NEXT IAS

THE CRUX

January Issue; 2025

Chief Editor

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CMD, NEXT IAS & MADE EASY Group

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Compilation of UPSC relevant news from 1st January to 31st January 2025

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76TH REPUBLIC DAY

Recently, India celebrated its 76th Republic Day with the theme 'Swarnim Bharat: Virasat aur Vikas,' with Indonesian President Prabowo Subianto as the chief guest.

About:

- **Background**
  - On **26th January 1950**, **India's Constitution came into effect**, marking the country's official transition to a Sovereign, Democratic and Republic state.
  - This day signifies the **culmination of India's struggle for independence** and the **establishment of constitutional governance** based on democratic principles.
- **Adoption of the Constitution**
  - The **Constituent Assembly of India** adopted the **Constitution** on **26th November 1949**, after nearly **three years of deliberations**.
  - However, **26th January** was chosen as the date of enactment to honor the **Purna Swaraj Resolution of 1930**, which first declared India's intent to seek complete independence.
- **Purna Swaraj Declaration (1930)**
  - On **19th December 1929**, at the **Lahore Session of the Indian National Congress (INC)**, a resolution for **Purna Swaraj (Complete Independence)** was passed under the leadership of **Jawaharlal Nehru**.
  - Following this, on **26th January 1930**, the INC made a **public declaration** urging Indians to observe the day as **Independence Day**.
  - From **1930 to 1947**, **26th January was annually celebrated as "Independence Day"**, symbolizing India's aspiration for full sovereignty.
  - This historical significance made **26th January** the ideal date to **proclaim India as a Republic** in 1950.

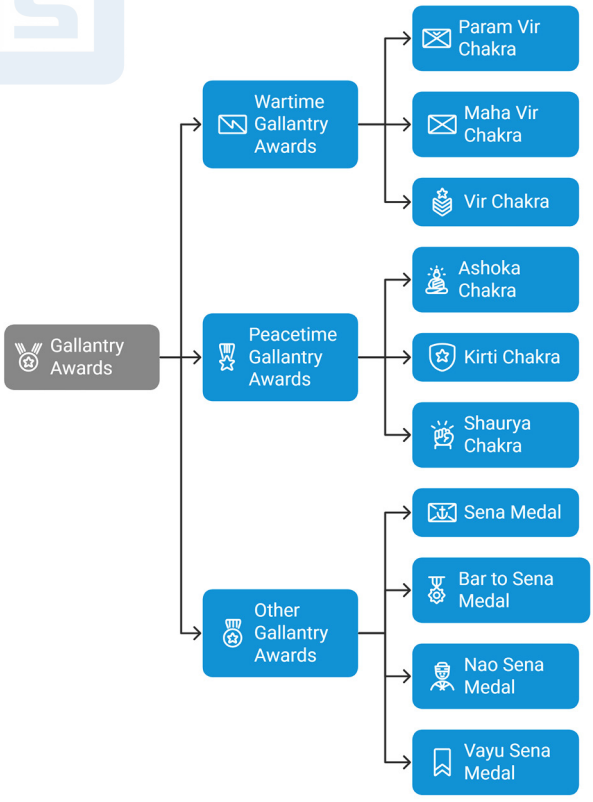
Flag Unfurling vs. Hoisting: Republic Day vs. Independence Day

- **Republic Day (January 26th):**
  - The President of India unfurls the national flag during the Republic Day celebrations in New Delhi.
  - The flag is tied at the top of the pole and unfurled downward, signifying India's status as a free, sovereign republic.
- **Independence Day (August 15th):**
  - The Prime Minister hoists the flag at the Red Fort in Delhi.
  - The flag is raised from the bottom to the top, symbolizing India's emergence as an independent nation after British rule.

Key Highlights of the 76th Republic Day

- **Padma Awards:** A total of 139 Padma Awards were conferred, including Padma Vibhushan, Padma Bhushan, and Padma Shri.
  - **Padma Vibhushan**: Awarded for exceptional and distinguished service.
  - **Padma Bhushan**: Recognizes **distinguished service of a high order**.
  - **Padma Shri**: Given for **distinguished service** in any field.
  - **Hierarchy**: Padma Vibhushan > Padma Bhushan > Padma Shri.
  - These awards are announced annually on **Republic Day**.
- **Gallantry Awards and Defence Decorations**
  - The President conferred Gallantry Awards to 93 personnel from the Armed Forces and CAPF.
  - These included Kirti Chakras, Shaurya Chakras, Bar to Sena Medal, Sena Medals, Nao Sena Medals, and Vayu Sena Medals.
  - Gallantry Awards are announced twice a year, on Republic Day and Independence Day.

Indian Gallantry Awards Classification



Key Highlights of the 2025 Republic Day Tableaux

- **Tri-Services Tableau (First Ever):** Featured for the first time, highlighting synergy between the Army, Navy, and Air Force.
  - Themed 'Shashakt aur Surakshit Bharat' (Strong and Secure India).
- **DRDO Tableau:** Themed **'Raksha Kavach – Multi-layer Protection against Multi-domain Threats'**.

Selection Process for Tableaux

- **Application Process**
  - Every year, **State Governments, Union Territories (UTs), and Central Ministries/Departments** submit their tableaux proposals to the **Ministry of Defence (MoD)**.
  - A **committee of experts**, consisting of professionals from **art, culture, painting, sculpture, music, architecture, and choreography**, evaluates the proposals.
- **Selection Process (Phased Approach)**
  - **Stage 1:** Initial Proposal and Design Assessment
    - The **Committee reviews** the concept note and **design sketches/blueprints** of each proposal.
    - It may suggest **modifications** to improve the design or alignment with the overarching theme.
  - **Stage 2:** 3D Model Evaluation
    - Shortlisted entries move to the next phase, where they submit **3D models** of their proposed tableaux.
    - The Committee **assesses these models** for visual appeal, structural feasibility, and thematic representation.
  - The Committee has the final authority on tableau selection (typically around 15 tableaux are chosen each year).

Tableaux (16 States/UTs)

- **Andhra Pradesh:** *Etikoppaka Bommalu* (Eco-Friendly Wooden Toys).
- **Bihar:** *Swarnim Bharat: Virasat Aur Vikas* (Nalanda Vishwavidyalaya, Buddhist heritage).
- **Chandigarh:** *Harmonious Blend of Heritage, Innovation & Sustainability* (Focus on film production).
- **Dadra & Nagar Haveli and Daman & Diu:** *Daman Aviary Bird Park & Kukri Memorial* (Tribute to naval sailors).
- **Delhi:** *Quality Education*.
- **Goa:** *Cultural Heritage* (Diwija Festival & Kaavi Art).
- **Gujarat:** *Swarnim Bharat: Virasat Aur Vikas* (Kirit Toran & C-295 Transport Aircraft Unit).
- **Haryana:** *Bhagavad Gita and Krishna's Teachings*.
- **Karnataka:** *Lakkundi: Cradle of Stone Craft* (Jain heritage, Chalukya-era temples).
- **Madhya Pradesh:** *Kuno National Park – The Land of Cheetahs*.
- **Punjab:** *Land of Knowledge and Wisdom*.
- **Tripura:** *Eternal Reverence: Worship of 14 Deities – Kharchi Puja*.
- **Uttar Pradesh:** *Mahakumbh 2025: Swarnim Bharat – Virasat aur Vikas* (Maha Kumbh Mela, Triveni Sangam).
- **Uttarakhand:** *Cultural Heritage and Adventure Sports*.
- **West Bengal:** *Lakshmir Bhandar & Lok Prasar Prakalpa* (Women empowerment & self-reliance).

Winness State Tableaux

- **First Place:** *Uttar Pradesh* (Mahakumbh 2025 – Spiritual and Cultural Heritage).
- **Second Place:** *Tripura* (Kharchi Puja – Worship of 14 Deities).
- **Third Place:** *Andhra Pradesh* (Etikoppaka Wooden Toys – Promoting Handicrafts).

Best Marching Contingents

- **Services:** Jammu & Kashmir Rifles Contingent.
- **CAPFs & Auxiliary Forces:** Delhi Police Marching Contingent.

Best Tableau from Central Ministries/Departments

- **Winner:** Ministry of Tribal Affairs (Theme: Janjatiya Gaurav Varsh).
- Honored the **150th** birth anniversary of Bhagwan Birsa Munda.
- **Depicted a majestic Sal tree**, symbolizing tribal strength and sustainability.
- **Theme: 'Jal, Jungle, Jameen' (Water, Forest, Land)** – Highlighting tribal environmental conservation.

Beating Retreat Ceremony

- **Overview:**
  - Held annually on **January 29th** at **Vijay Chowk**, New Delhi, the **Beating Retreat Ceremony** marks the **conclusion of Republic Day celebrations**.
  - The **President of India** is the **Chief Guest**, arriving in a cavalry unit escorted by the **President's Bodyguards (PBG)**.
- **Historical Origin:**
  - The ceremony originated in the **early 1950s**, conceptualized by **Major Roberts of the Indian Army**.
  - It was developed as a **unique military display** featuring massed bands.
  - The tradition is rooted in a **centuries-old military practice** where:
    - At sunset, **troops ceased fighting**, sheathed their weapons, and withdrew from the battlefield.
    - The **sounding of the retreat** signaled soldiers to return to their camps.

INDIA-INDONESIA RELATIONS

Indonesian President Prabowo Subianto's visit to India as the chief guest for the 76th Republic Day marked a key milestone in India-Indonesia relations.

Key Outcomes of Indonesia-India Bilateral Talks

- **South China Sea & Maritime Cooperation**
  - **Code of Conduct (COC) Agreement:** Both nations emphasized the need for a **"full and effective" Code of Conduct** in the South China Sea as per **1982 UNCLOS** to ensure peace, stability, and freedom of navigation.
  - **Peaceful Dispute Resolution:** Advocated for the **unimpeded flow of maritime commerce** and adherence to **international law** amid China's military assertions.
  - **Maritime Security Strengthening:** Agreed to station an Indonesian liaison officer at India's IFC-IOR (Gurugram) and establish bilateral maritime and cybersecurity dialogues.
  - **Naval Cooperation:** Enhanced collaboration in hydrography and submarine search & rescue operations.
- **Defence & Strategic Partnerships:**
  - **Defence Cooperation Agreement (DCA):** Ratified to deepen security ties and joint defense initiatives.
  - **BrahMos Missile Export:** India to export ₹3,800 crore worth of BrahMos missiles to Indonesia, strengthening defense collaboration.
  - **Naval Infrastructure Development:** Discussed cooperation in shipbuilding and aircraft carrier development.
- **Economic & Trade Relations:**
  - **AITIGA Review by 2025:** Agreed to **fast-track the review of the ASEAN-India Trade in Goods Agreement (AITIGA)** to boost bilateral trade.
  - **Local Currency Trade MoU:** Implementing an MoU to **enhance financial integration** by conducting bilateral trade in **local currencies**.
  - **Energy & Mineral Cooperation:** Explored partnerships in renewable energy, critical minerals, and S&T (e.g., BPCL's $121 million investment in Indonesia's Nunukan oil & gas block).
  - **Global Biofuels Alliance:** Indonesia welcomed India's invitation to join the initiative, fostering sustainable energy collaboration.
- **Cultural & Scientific Cooperation**
  - **MoUs Signed:** Agreements in healthcare, maritime affairs, traditional medicine, digital development, and cultural exchange.
  - **Space Collaboration:** ISRO will **support Indonesia's Biak Telemetry, Tracking, and Command (TTC) Station** for satellite and launch vehicle operations.
  - **Scientific Cooperation:** Strengthened partnership between **India's ISRO and Indonesia's National Research & Innovation Agency**.
- **Counter-Terrorism & Security Cooperation:** Both nations condemned terrorism in all forms and called for global action against UN-proscribed groups. Both nations also agreed to enhance intelligence-sharing and counter-terrorism efforts for regional security.

Historical Background of Relationship

- **Early Post-Independence Period (1940s-1950s)**
  - India supported Indonesia's independence from Dutch rule, with PM Nehru advocating for its freedom.
  - **The Treaty of Friendship (1951)** strengthened cooperation in trade, culture, and military affairs.
  - Both nations shared anti-colonial and non-alignment principles, participating in the **1955 Bandung Conference** and co-founding **NAM (1961)**.
- **Deterioration in Ties (1960s):** Relations declined due to geopolitical shifts.
  - **Sino-Indian Conflict (1962):** India's ties with China soured, while Indonesia maintained good relations with China.
  - **India-Pakistan War (1965):** Indonesia supported Pakistan, straining ties with India.
- **Cold War Era (1966-1980s)**
  - Relations improved under Indonesia's President Suharto, who distanced from China.
  - **The Maritime Boundary Agreement (1977)** strengthened regional security.
  - **Indonesian President Suharto's Visit to India (1980)** marked a renewed diplomatic phase.
- **Look East Policy (1990s):** India's **1991 Look East Policy** and economic liberalization boosted ties. Trade and investment grew, leading to a **comprehensive partnership** in the economic, security, and cultural sectors.
- **Act East Policy & Recent Developments (Since 2000s)**
  - **India's Act East Policy (2014)** positioned Indonesia as a key regional partner.
  - **Trade:** Indonesia is India's **2nd largest ASEAN trade partner,** with trade rising from **$4.3 billion (2005-06) to $29.4 billion (2023-24)**.
  - **Comprehensive Strategic Partnership (2018):** Strengthened Indo-Pacific maritime cooperation.

Significance of India-Indonesia Relations

- **Economic & Trade Relations:**
  - **Bilateral Trade:** Reached **$29.4 billion (2023-24)**, aiming for **$50 billion by 2025**.
  - **Exports & Imports:** India imports **coal, palm oil, and rubber**; and exports **refined petroleum, telecom equipment, and agricultural products**.

- **Investment:** Indian FDI in Indonesia is **$1.56 billion** (mining, textiles, infrastructure), while Indonesian FDI in India is **$653.8 million** (manufacturing, trade).

- **Strategic & Security Cooperation:**
  - **Defense & Security:** Joint exercises like **Coordinated Patrol, Ex Garuda Shakti (Army), Ex Samudra Shakti (Navy)**, and Bilateral Maritime & Cyber Security Dialogue.
  - **Defense Industry Collaboration: India-Indonesia Defense Industry Exhibition (2024)** showcased technology and manufacturing opportunities.
- **Energy & Health Security:**
  - **Renewable Energy & Minerals:** Joint exploration of **nickel and bauxite** for clean energy and biofuel.
  - **Health Cooperation:** MoUs on digital health, traditional medicine, and capacity-building for healthcare professionals.
- **Technological Cooperation:**
  - **Digital Initiatives:** India's **Aadhaar, UPI, CoWIN** serve as models for Indonesia's digital expansion.
  - **Tech Collaboration:** Focus on **AI, cybersecurity, quantum communication, and space technology**.
- **Cultural & Educational Cooperation:**
  - **Heritage & Arts:** India supports the restoration of the **Prambanan Temple (UNESCO World Heritage site)** and promotes culture through Indian centers in **Jakarta & Bali**.
  - **Education:** Scholarships through the **Indian Technical and Economic Cooperation (ITEC) and the Indian Council for Cultural Relations (ICCR) programs** for Indonesian students.
  - **Religious Harmony:** Indonesia has the world's largest Muslim while India has the 2nd largest Muslims population.
    - This difference shapes bilateral relations, influencing interfaith dialogue, addressing radicalization, and fostering religious harmony.
- **Multilateral Cooperation:**
  - **ASEAN & Indo-Pacific:** Strong collaboration on ASEAN Outlook on Indo-Pacific, India-Indonesia-Australia Trilateral, and Indo-Pacific Oceans Initiative (IPOI).
  - **Global Engagements:** Active cooperation in BRICS and the Indian Ocean Rim Association (IORA).

Challenges in India-Indonesia Relations

- **Trade and Economic Barriers:**
  - **No Comprehensive Economic Cooperation Agreement (CECA):** Unlike Malaysia and Singapore, Indonesia lacks a CECA with India, affecting trade competitiveness, especially in palm oil.
  - **Low AITIGA Utilization:** Only **25% of the ASEAN-India Trade in Goods Agreement (AITIGA)** is utilized, limiting its benefits.
  - **Trade Imbalance:** India imports **$11 billion worth of palm oil (2022)** and coal, favoring Indonesia.
  - **Untapped Trade Potential:** Bilateral trade could grow **33% to $61 billion**, highlighting missed opportunities.
- **Investment & Competition with China:**
  - **Chinese Investment Dominance:** Under President Joko Widodo, **China outpaces India in investments**, signing **$10 billion in business deals (2024)**.
  - **India's Protectionist Policies:** Indian industries, especially **textiles**, fear competition from Indonesian imports like **Viscose Staple Fibre (VSF)**.
- **Geopolitical & Strategic Constraints:**
  - **China's Influence:** Indonesia's participation in **China's Belt and Road Initiative (BRI)**, including large-scale infrastructure projects, raises concerns for India.
  - **Defense Procurement Issues:** Regulatory differences **delay joint defense projects**, restricting deeper military cooperation.
- **Connectivity & People-to-People Barriers:**
  - **Limited Direct Flights:** Weak air connectivity hampers **tourism, business, and cultural exchanges**.
  - **Visa Restrictions: Tough visa policies** limit student exchanges, business travel, and cultural engagement.
- **Influence of Radical Groups:** There is concern that radicalized elements in Indonesia, such as Jemaah Islamiyah (JI), Jamaah Ansharut Daulah (JAD), and Laskar Jihad, could find ideological links with extremist groups in India.
  - These groups have been involved in violent extremism and share similar radical ideologies, potentially exacerbating security concerns and impacting the broader South and Southeast Asian stability.

WAY FORWARD

- **Accelerating CEPA Negotiations:** Fast-tracking the Comprehensive Economic Partnership Agreement (CEPA) will enhance trade and reduce imbalances.
- **Expanding Renewable Energy & Agriculture Ties:** Collaboration in solar energy, biofuels, and agribusiness will unlock new economic opportunities.
- **Encouraging Indonesia's regional and Global cooperation:** Supporting Indonesia's participation in ISA & Global Biofuels Alliance will drive sustainability and innovation. Deepening ties through ASEAN, IORA, and the Indian Ocean Naval Symposium will promote regional stability.
- **Joint Defense & Maritime Security:** Expanding defense projects, naval coordination, and infrastructure will enhance Indo-Pacific security and counterbalance China.

10 YEARS OF NITI AAYOG

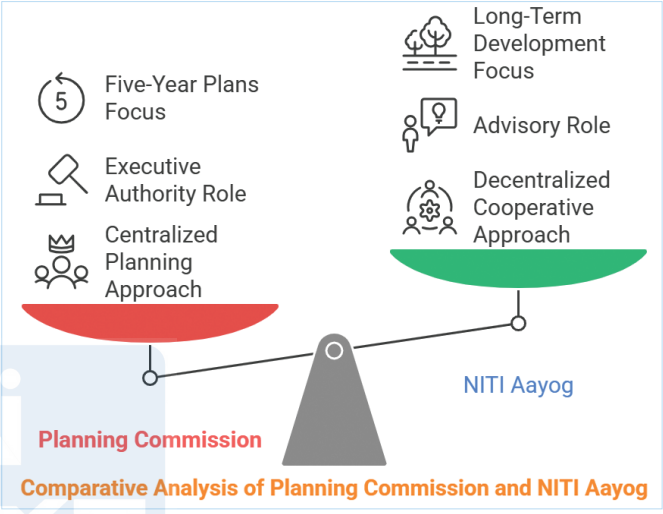
NITI Aayog, the Government of India's premier policy think tank, marks a major milestone as it completes a decade since its inception in 2015.

About

- **Established:** NITI Aayog (National Institution for Transforming India) is a government think tank established in **2015**.
- **Aim:** It replaced the erstwhile Planning Commission, aiming to focus on more **contemporary challenges like sustainable development, policy innovation, and governance reforms.**

Roles of NITI Aayog:

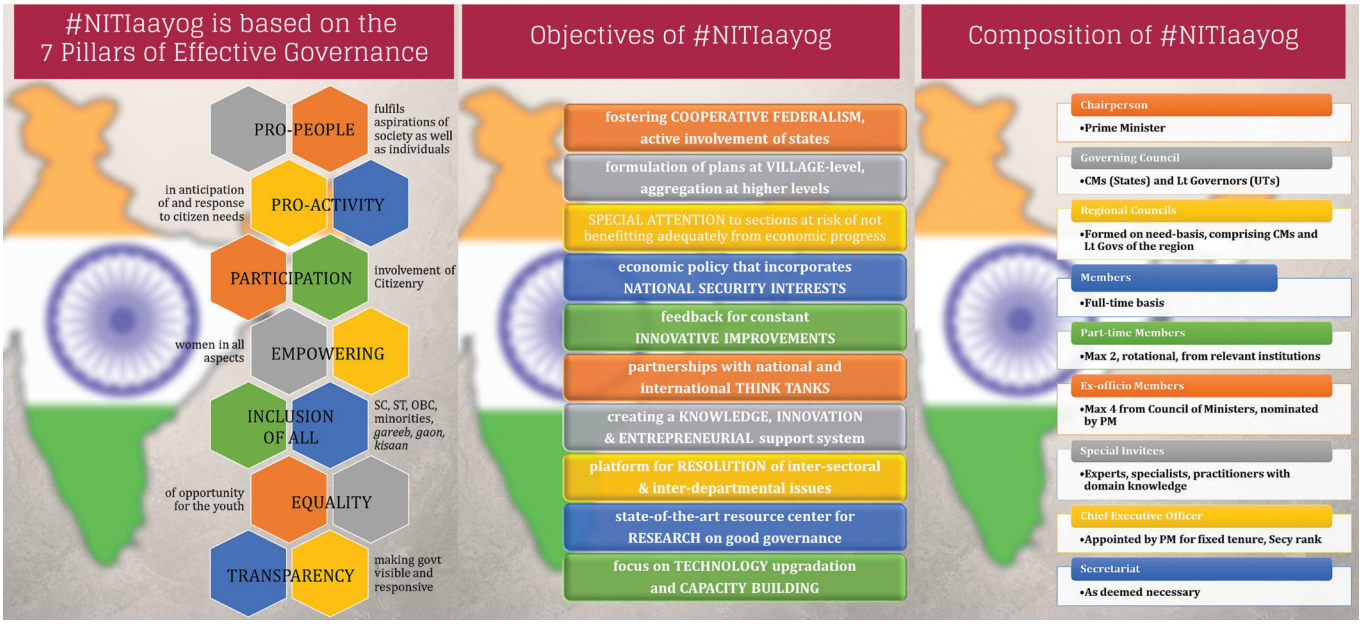
- **Policy Formulation:** NITI Aayog plays a key role in developing long-term strategies for India's sustainable development. It ensures policies are adaptable to the country's evolving needs.
  - Recently, it launched the **"Trade Watch Quarterly"** to analyze India's trade dynamics and inform better policy decisions.
- **Coordination:** It acts as a bridge between central and state governments, ensuring smooth policy implementation.
  - ***For example***, in November 2024, it organized a symposium on **"Green Transition in States,"** encouraging sustainable practices across different regions.
- **Monitoring and Evaluation:** NITI Aayog tracks the effectiveness of government programs and aligns them with Sustainable Development Goals (SDGs).
  - The **"SDG India Index 2023-24"** was recently released to measure states' performances on these global benchmarks.
- **Data Collection and Analysis:** Gathering and analyzing data is a crucial function, helping in evidence-based policymaking.
  - ***For instance***, the launch of the **"Trade Watch Quarterly"** in December 2024 provides insights into India's trade developments, helping refine economic strategies.



Comparative Analysis of Planning Commission and NITI Aayog

Reasons behind Government Replaced Planning Commission with NITI Aayog

- **Need for a Modern Approach:** The centralized model of the Planning Commission became outdated in addressing India's diverse challenges.
  - NITI Aayog was introduced to enable flexible, region-specific solutions with greater state and local government participation.



- **Cooperative Federalism:** Unlike the Planning Commission, which had a top-down approach, NITI Aayog ensures states play an active role in decision-making. Policies are now formed through consultations, making governance more inclusive and effective.
- **Focus on Strategic Input:** Acting as a think tank rather than just a funding body, NITI Aayog provides strategic guidance for policymaking. This shift enables dynamic responses to economic and social challenges.
- **Enhanced Stakeholder Engagement:** It collaborates with states, experts, and private players for well-informed policies. In January 2025, NITI Aayog partnered with "The New Shop" to empower women entrepreneurs in the retail sector, promoting economic inclusivity.
- **Relevance in a Globalized Economy:** The shift from the Planning Commission to NITI Aayog aligns India with modern global economic trends. Competitive federalism is encouraged, fostering innovation and efficiency across states.

Challenges for NITI Aayog

- **Lack of Financial Authority:** NITI Aayog cannot allocate funds, limiting its influence on policy execution and making it reliant on ministries and states.
- **Inter-State Development Imbalance:** Economic and social disparities persist among states, affecting policy implementation due to financial and administrative constraints.
- **Limited Legislative Backing:** Without constitutional or legal status, NITI Aayog remains a think tank rather than a decision-making authority.
- **Challenges in Private Sector Engagement:** Regulatory issues, bureaucratic red tape, and risk aversion hinder private sector participation in national initiatives.
- **Mismatch Between Aspirations and Ground Realities:** High-cost policies like AI and energy transition face budget constraints and infrastructure challenges, slowing implementation.
- **Data Gaps and Real-time Monitoring:** While NITI Aayog plays a key role in data analysis, many sectors still lack robust and real-time data collection mechanisms. This affects evidence-based policymaking and tracking of Sustainable Development Goals (SDGs).

NITI Aayog's Goals for 2030 and 2035

- **NITI Aayog's Goals for 2030**
  - **Energy Transition:** NITI Aayog targets 50% renewable energy by 2030, aiming for a 500 GW non-fossil capacity to cut carbon emissions.
  - **Public Health Enhancement:** It prioritizes health surveillance and pandemic preparedness, launching a proactive framework in September 2024.
  - **Sustainable Development Goals (SDGs):** Aligns policies with SDGs, tracking state progress on poverty, education, and gender equality via the SDG India Index.
- **NITI Aayog's Goals for 2035**
  - **Long-term Economic Growth:** Vision 2035 focuses on sustainable growth through innovation, balancing social equity and environmental goals.
  - **Energy Security:** NITI Aayog promotes green technologies and renewables to ensure affordable, reliable, and clean energy for the future.
  - **AI Integration:** Three AI Centers of Excellence, announced in October 2024, aim to revolutionize healthcare, agriculture, and education with smart solutions.

WAY FORWARD

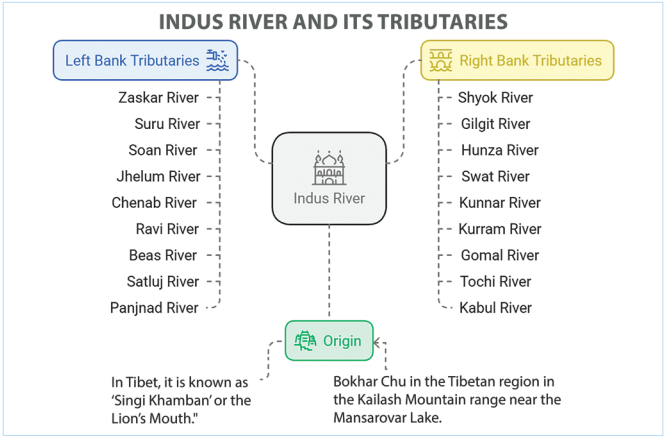
- **Enhance Financial Authority:** While direct fund allocation may not be feasible, NITI Aayog can be stronger in designing performance-based incentive structures for states, ensuring better policy execution.
- **Strengthen Monitoring and Accountability:** Improving real-time data collection through AI-driven analytics and digital dashboards can enhance transparency and accelerate policy implementation, especially for SDG tracking.
- **Empower States for Decentralized Planning:** Encouraging states to create region-specific policies, with NITI Aayog acting as a facilitator, can ensure more effective governance. More autonomy for state planning boards could lead to better execution of national strategies.
- **Improve Coordination with Ministries and States:** Establishing dedicated task forces for critical sectors like climate resilience, digital economy, and public health can ensure faster policy adoption and prevent bureaucratic delays.
- **Increase Private Sector Participation:** Streamlining regulations and creating sector-specific investment roadmaps can attract more private capital into key development areas such as clean energy, AI, and urban infrastructure.
- **Legal and Institutional Strengthening:** Providing NITI Aayog with a stronger legislative framework could enhance its authority in national policy planning and coordination, ensuring a greater role in fiscal federalism.

NEUTRAL EXPERT FOR INDUS WATER TREATY DISPUTES

The World Bank-appointed Neutral Expert affirmed his authority to rule on disputes over the Kishenganga and Ratle projects, aligning with India's stance to exclude the Permanent Court of Arbitration.

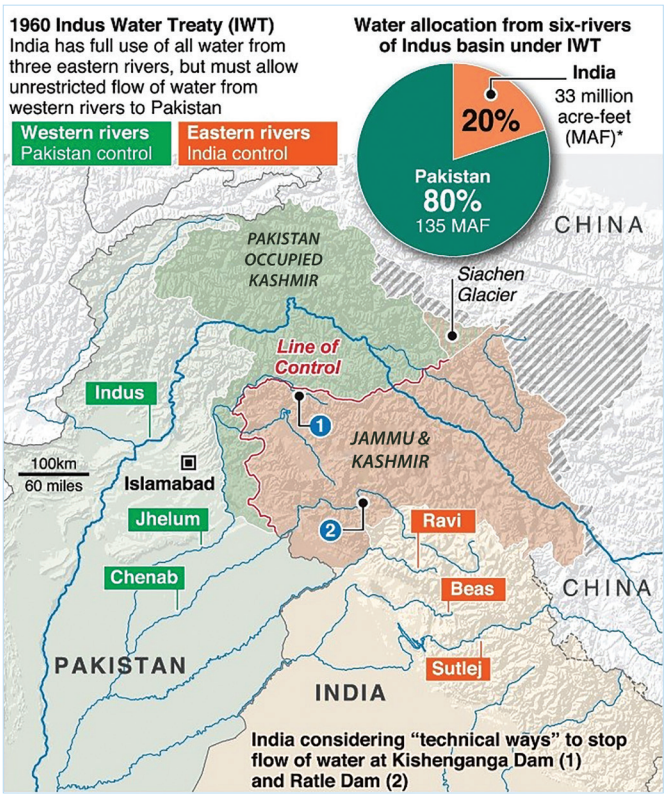
About Indus River

- The Indus River is one of the longest rivers in the world, flowing 3,180 km from Tibet through India and Pakistan before emptying into the Arabian Sea.
- It has historical significance as the cradle of the Indus Valley Civilization.



Background of the Indus Waters Treaty (1960)

- **Partition & Boundary Issue:** At the time of India's independence (1947), the boundary was drawn across the Indus Basin, leaving Pakistan as the lower riparian.
- **Key Irrigation Headworks:**
  - Important headworks at **Madhopur (Ravi)** and **Ferozepur (Sutlej)** were in Indian territory.
  - **Punjab (Pakistan) depended on these for irrigation,** leading to a dispute over water use.
- **Dispute & Negotiations:**
  - Water-sharing disagreements arose between **India & Pakistan** over existing irrigation facilities.
  - The **World Bank (IBRD)** mediated negotiations between both nations.
- **Indus Waters Treaty (1960):**
  - Signed on 19th September 1960 in Karachi.
  - Signed by President Ayub Khan (Pakistan), PM Jawaharlal Nehru (India), and W.A.B. Illif (World Bank).
  - The treaty became effective from 1st April 1960
  - It is a water-sharing agreement between India and Pakistan, signed in 1960 under the supervision of the World Bank.
  - It divides the waters of the Indus River and its five tributaries—Sutlej River, Beas River, Ravi River, Jhelum River, and Chenab River—between the two nations.



Key Provisions of the Treaty

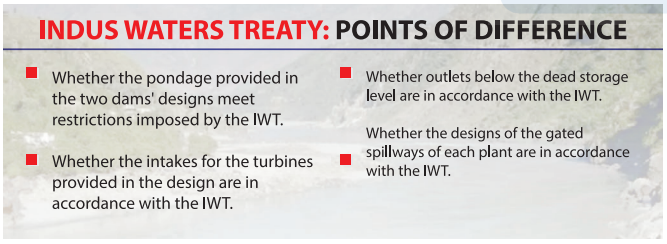
- **Water Sharing Arrangement:**
  - **India** has **full control over the three eastern rivers** (Beas River, Ravi River, and Sutlej River), while Pakistan receives the three western rivers (Chenab River, Indus River, and Jhelum River).
  - India is permitted to use the waters of the western rivers for domestic needs, non-consumptive purposes, agricultural activities, and hydroelectric power generation under specific conditions.
  - Pakistan is allocated approximately 80% of the total water from the Indus River system, while India receives around 20%.
- **Permanent Indus Commission:** Both India and Pakistan must appoint a high-ranking engineer (expert in hydrology and water use) as their Commissioner for Indus Waters.Each Commissioner will represent their respective Government and handle matters related to the Indus Waters Treaty.
  - **Functions of the Commission:** The Commission's role is to ensure cooperation between India and Pakistan for the proper use and development of the rivers.

- It will study and report on issues related to river development and resolve problems. It will conduct regular inspections (once every 5 years) and upon request, visit specific works or sites for fact-finding.

➲ **Dispute Resolution:**
- If there's a disagreement on the interpretation or application of the Treaty, the Commission will try to resolve it.
- If the Commission fails to reach an agreement, the dispute can be handled by a Neutral Expert or escalated to arbitration.
- A report will be submitted to both Governments, outlining the disagreement.
- If negotiation or mediation fails, a Court of Arbitration may be established.

Background of the Current Issue:

➲ **Dispute Over Resolution Procedure:**
- Pakistan initially requested a Neutral Expert in 2015 to address concerns over the Kishanganga and Ratle hydroelectric projects but later sought adjudication by the Permanent Court of Arbitration.
- India opposed this move, stating that the treaty prioritizes the Neutral Expert as the first step in dispute resolution.
- In 2022, the World Bank initiated both Neutral Expert and Permanent Court of Arbitration proceedings.
- India boycotted the arbitration process but participated in the Neutral Expert proceedings, asserting that only the Neutral Expert has the authority to resolve the dispute under the treaty.



Kishanganga and Ratle Hydroelectric Project

➲ **Kishanganga Hydroelectric Project:** Located on the Kishanganga River, a tributary of the Jhelum, in Jammu and Kashmir. Pakistan objected, arguing that India's diversion of water for power generation violates the treaty.

➲ **Ratle Hydroelectric Project:** A run-of-the-river project on the Chenab River in Jammu and Kashmir. Pakistan claimed that the dam's design, especially the spillway gates, gives India excessive control over river flow.

> **'Blood & Water can't flow together at the same time –Prime Minister Modi**

Challenges Associated with the IWT

➲ **Outdated Provisions:** The IWT does not address modern challenges like climate change, which has altered hydrological patterns, impacting water availability in the Indus basin.

➲ **Climate Change Impacts:** Accelerated glacial melt, erratic rainfall, and increased evaporation due to climate change are further straining water resources, undermining the IWT's reliance on historical hydrological data.

➲ **Lack of Flexibility:** The treaty's rigid water allocation system limits the capacity for adaptive management strategies in response to changing environmental conditions and regional needs.

➲ **Geopolitical Tensions:** Political instability and hostility between India and Pakistan, particularly following incidents such as the Uri attack and Pulwama attack, have significantly strained bilateral relations, further complicating cooperation on water-sharing and management under the treaty.

➲ **Hurdles in Hydropower and Economic Growth:** Pakistan's objections to India's hydropower projects and water usage under the Indus Waters Treaty restrict India's ability to harness its full hydropower potential. These challenges limit India's agricultural, energy, and industrial growth, slowing overall economic development.

WAY FORWARD

➲ **Renegotiation of the Treaty:** The IWT should be revisited to address its limitations, with provisions for climate resilience, sustainable water management, and flexible water allocation strategies.

➲ **Enhanced Dialogue:** India and Pakistan need to prioritize open dialogue and confidence-building measures to peacefully resolve disputes, starting with the revitalization of the Permanent Indus Commission.

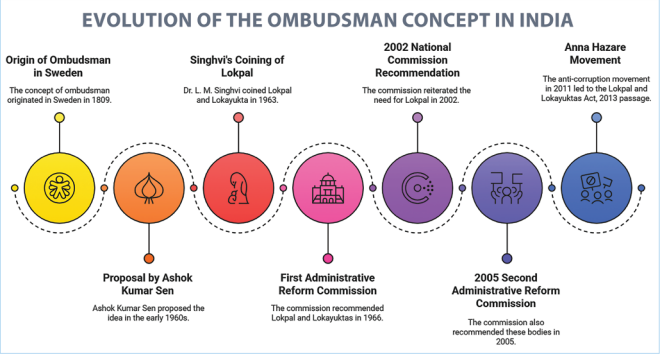
➲ **Third-Party Mediation:** Neutral third parties like the World Bank can play a crucial role in facilitating constructive negotiations and ensuring treaty compliance in the face of bilateral tensions.

➲ **Focus on Technical Solutions:** Both nations should adopt a science-driven approach to resolving disputes over hydroelectric projects, with an emphasis on collaborative data sharing and joint studies for better water resource management.

LOKPAL OF INDIA

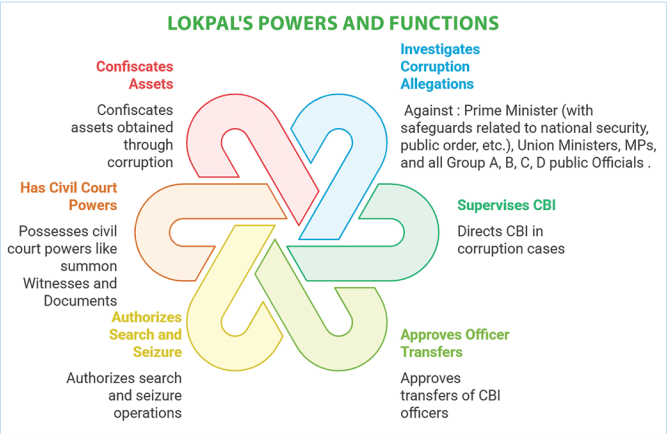
On January 16, 2025, the Lokpal of India celebrated its Foundation Day, marking 11 years since its inception on January 16, 2014, under the Lokpal and Lokayuktas Act, 2013.

Historical Background



About Lokpal

- **Statutory Body**: The Lokpal is a statutory body established under the Lokpal and Lokayuktas Act, 2013.
- **Mandate:** It investigates allegations of corruption against specific public officials and related matters.
- **Composition:**
  - **Chairperson:** A former Chief Justice of India, Supreme Court Judge, or an eminent person with integrity and expertise.
  - **Members:** Up to 8 members, with at least 50% being judicial members and 50% from underrepresented groups (SC/ST/OBC, minorities, and women).
- **Appointment and Tenure:**
  - Appointed by the President of India based on recommendations from a Selection Committee (**PM as chairman, Speaker of LS, Leader of Opposition of LS, CJI or eminent jurist**).
  - **Term:** 5 years or until the age of 70 years, whichever is earlier.



Key Challenges Ahead of Lokpal

- **Delays in Appointments and Staffing:** The first Lokpal, Justice Pinaki Chandra Ghosh, was appointed in March 2019, six years after the Act was passed.
  - The current Lokpal, Justice (retd) A.M. Khanwilkar, was appointed in March 2024. The Lokpal has faced issues related to staffing and the appointment of key positions such as the Director of Inquiry and Director of Prosecution.
- **Investigations and Prosecutions: Nearly 90% of complaints** in the last five years were **rejected due to incorrect formats or other procedural issues.**
- **Coordination with Agencies:** The Lokpal relies on various investigative agencies for conducting probes. Ensuring seamless cooperation and avoiding bureaucratic bottlenecks remain critical hurdles.
- **Lack of Independence:** The government's influence over Lokpal appointments and operations has been criticized for compromising its independence. The process for dealing with complaints against the Prime Minister lacks transparency.
- **Anonymous Complaints:** The Act does not allow anonymous complaints, deterring potential whistleblowers.
- **Time Limitation:** The seven-year limit for filing complaints may not allow sufficient time for some cases.
- **Limited Investigation Powers:** Lokpal cannot independently initiate investigations against public servants.
- **Complaint Form Over Content:** The form of the complaint is emphasized more than the substance of the complaint itself.

Way Forward:

- **Timely Appointments:** Ensure quick appointments to key positions like Director of Inquiry and Prosecution to avoid delays and improve efficiency.
- **Simplify Complaints:** Make the complaint process easier by reducing procedural errors and creating an automated system to handle submissions.
- **Better Coordination:** Strengthen cooperation between the Lokpal and investigative agencies to avoid delays in investigations.
- **Greater Independence:** Minimize government influence in Lokpal appointments and ensure transparency in dealing with complaints against high officials.
- **Allow Anonymous Complaints:** Permit anonymous complaints to protect whistleblowers and encourage more reports on corruption.
- **Extend Filing Time:** Increase the time limit for filing complaints to allow for thorough investigations of older cases.
- **Empower Investigations:** Grant the Lokpal the power to initiate investigations independently, making it more proactive.

ABOUT LOKAYUKTA

- **Historical Evolution:**
  - The institution of Lokayukta was first established in Maharashtra in 1971.
  - By 2013, 21 states and 1 Union Territory (Delhi) had set up Lokayukta institutions.
- **Lokayukta Structure:**
  - The structure of Lokayukta varies across states.
  - Some states, like Rajasthan, Karnataka, Andhra Pradesh, and Maharashtra, have both Lokayukta and Upa-Lokayukta.
  - Other states, like Bihar, Uttar Pradesh, and Himachal Pradesh, have only the Lokayukta.
- **Appointment Process:** The Governor appoints the Lokayukta and Upa-Lokayukta after consulting the Chief Justice of the High Court and the Leader of the Opposition.
- **Qualifications:**
  - States like Uttar Pradesh, Himachal Pradesh, Andhra Pradesh, Gujarat, Orissa, Karnataka, and Assam require judicial qualifications.
  - States like Bihar, Maharashtra, and Rajasthan do not mandate judicial qualifications.
- **Jurisdiction Variations:**
  - In states like Himachal Pradesh, Andhra Pradesh, Madhya Pradesh, and Gujarat, the Chief Minister is within the jurisdiction of Lokayukta.
  - In Maharashtra, Uttar Pradesh, Rajasthan, Bihar, and Orissa, the Chief Minister is excluded from Lokayukta's purview.
  - Lokayukta has jurisdiction over ministers and higher civil servants in almost all states.
  - Maharashtra includes former ministers and civil servants under Lokayukta.
  - Members of state legislatures are included in states like Andhra Pradesh, Himachal Pradesh, Gujarat, Uttar Pradesh, and Assam.
  - Lokayukta in most states includes local bodies, corporations, companies, and societies within its jurisdiction.
- **Roles and Functions:**
  - Lokayukta presents an annual report to the Governor regarding its performance.
  - It works with state investigative agencies to conduct inquiries.
  - Lokayukta can request relevant files and documents from state government departments.
  - Recommendations by Lokayukta are advisory and not binding on the state government.

KEY LEGISLATIONS IN INDIA PERTAINING TO ANTI-CORRUPTION

- **Prevention of Corruption Act, 1988 (Amended in 2018):** Criminalizes bribery and corruption by public officials and corporations.
  - Introduced stricter penalties and time-bound trials.
- **Whistleblowers Protection Act, 2014:** Protects whistleblowers and ensures confidentiality.Penalizes threats or victimization of whistleblowers.
- **Right to Information Act, 2005:** Empowers citizens to access government information. Promotes transparency and accountability in public offices.
- **Prevention of Money Laundering Act, 2002 (PMLA):** Prevents money laundering and confiscates proceeds of crime.
  - Strengthens global cooperation in anti-money laundering efforts.
- **Benami Transactions (Prohibition) Act, 1988 (Amended in 2016):** Criminalizes Benami transactions to conceal property ownership. Allows confiscation of benami properties.
- **Black Money (Undisclosed Foreign Income and Assets) Act, 2015:** Targets undisclosed foreign income and assets.Imposes heavy penalties and prosecution for offenders.
- **Fugitive Economic Offenders Act, 2018:** Addresses economic offenders fleeing the country.Allows confiscation of assets for offenses over ₹100 crore.

INDIAN DIASPORA

PM Modi inaugurated the 18th Pravasi Bharatiya Divas convention in Odisha.
Over 3,000 delegates from 70 countries to the 18th Pravasi Bharatiya Divas (PBD) celebration.

About

- **The Pravasi Bharatiya Divas (PBD) Convention** is the flagship event of the Government of India that provides an important platform to connect and engage with the Indian diaspora and enable them to interact with each other.
- **The theme for the 18th PBD:** "Diaspora's Contribution to a Viksit Bharat".

Parvasi Bharatiya Divas:

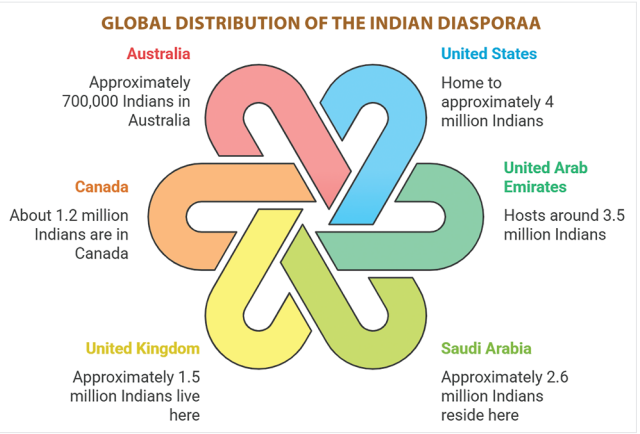
- It is celebrated on January 9 every year to honor the contribution of the Overseas Indian community to India's development.
- The date was chosen because, on January 9, 1915, **Mahatma Gandhi returned to India from South Africa,** marking the beginning of his leadership in India's freedom struggle.
- **Objective**: The main goal of PBD is to strengthen the engagement of the overseas Indian community with the Government of India and reconnect them with their roots.
- **Initiatives:**
  - **PBD Conventions:** The first PBD Convention was organized on January 9, 2003.
  - **Pravasi Bharatiya Samman Award:** During the PBD Convention, selected overseas Indians are honored with the prestigious Pravasi Bharatiya Samman Award for their contributions to various fields both in India and abroad.

Significance of the Indian Diaspora

- **Economic Contributions:** Indians abroad send large amounts of **remittances**, supporting families and boosting India's foreign exchange reserves. India received **$129 billion in remittances in 2024**, the highest globally.
  - Diaspora members invest in **real estate, healthcare, and education**, contributing to India's economy. Initiatives like **GIFT City in Gujarat** showcase how overseas Indians drive economic development.
- **Cultural Diplomacy & Soft Power:** Indian festivals like **Diwali in New York** and the **Notting Hill Carnival in London** promote India's culture. These events enhance India's global image and strengthen cultural ties.
  - Indian movies, music, and literature play a key role in shaping perceptions. Bollywood Films & Music like **Lagaan, Slumdog Millionaire, Naatu Naatu** song have gained international recognition, spreading Indian culture.
- **Political Influence & Advocacy:** Indian-origin leaders hold top positions worldwide, such as Rishi Sunak, Tan France, Vivek Ramaswamy, Krish Patel, Vikram Patel, Nikki Haley, Priti Patel, and Kamala Harris. They influence global policies and support India's interests.
  - Diaspora organizations like the **Indian American Impact Project and the British Indian Diaspora Council** advocate for stronger bilateral ties and Indian causes abroad.
- **Technology & Academic Contributions:** Indian-origin entrepreneurs lead global tech companies like **Adobe, Microsoft, and Google**, highlighting India's role in innovation. Silicon Valley has a strong Indian presence in AI, IT, and biotech.
  - Academic collaborations between Indian and foreign universities drive research and knowledge exchange. Indian scholars abroad contribute significantly to global education.
- **Crisis Management & Philanthropy:** During crises like **COVID-19**, diaspora communities raised funds and sent medical aid to India. Their quick response showcased their strong connection with their homeland.
  - Organizations like the **Global Organization of People of Indian Origin (GOPIO) and the Association of Indians in America (AIA)** run welfare programs, including healthcare, education, and disaster relief, to support vulnerable communities.

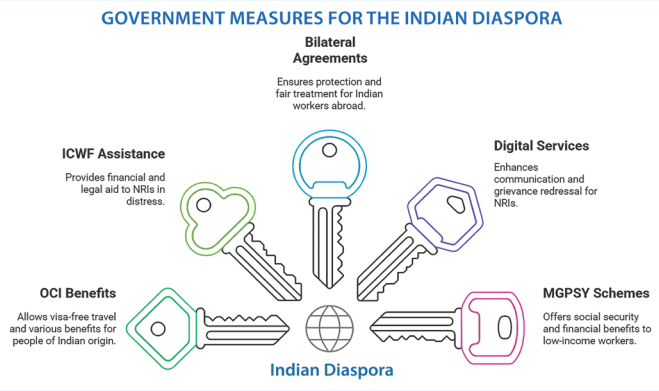
Indian Diaspora

- Diaspora refers to the dispersion or spread of a group of people from their original homeland to other parts of the world. It often applies to ethnic, cultural, or national groups who maintain connections to their ancestral land despite living elsewhere.
- As of May 2024, there were around **35.42 million** people of Indian origin living outside of India, making it the world's largest diaspora.
- This includes around **15.85 million** non-resident Indians (NRIs) and **19.57 million** people of Indian origin (PIOs).



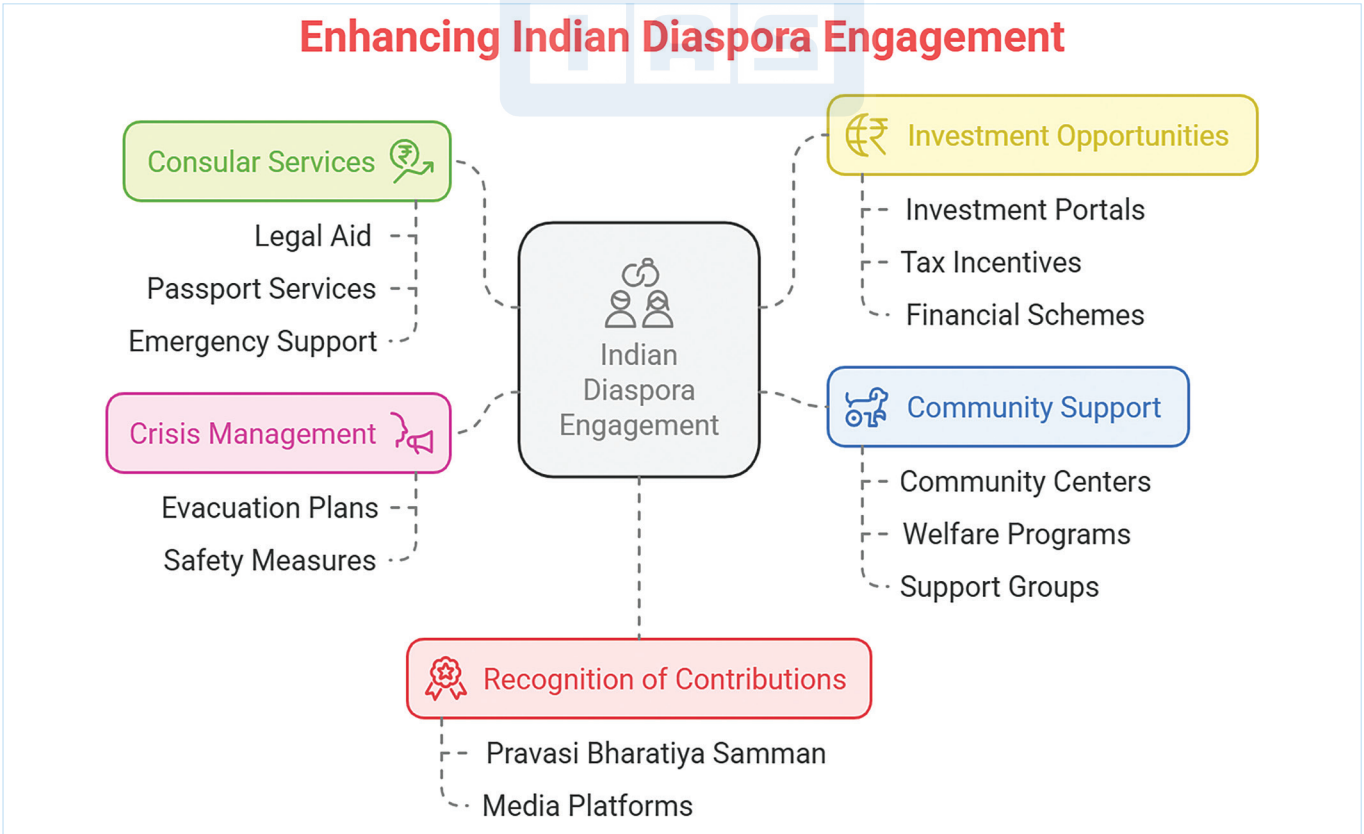
Challenges Faced by the Indian Diaspora

- **Regional Conflicts & Political Instability:** Indians in conflict-prone areas like **West Asia** face safety concerns. Wars in **Yemen and Israel-Palestine** have led to evacuations of Indian workers.
- **Job Insecurity & Labor Exploitation:** Policies like **Saudization in Saudi Arabia** can cause job losses for Indian workers. Migrant laborers often face **low wages, poor working conditions, and exploitation**.
- **Discrimination & Racism:** Many Indians abroad experience **ethnic bias, racial attacks, and social exclusion**. In Western nations, workplace discrimination creates barriers to career growth.
- **Security Risks & Extremism:** Some terrorist groups attempt to **radicalize Indian youth abroad**, creating security concerns. Separatist movements like **Pro-Khalistan protests in Canada, the UK, and Australia** pose challenges for India.
- **Legal & Immigration Barrier:** Indians face **visa restrictions, residency challenges, and uncertain immigration policies** in countries like the US and the UK, affecting their stability and prospects.
- **Social & Economic Integration:** Indian professionals struggle with **recognition of qualifications and career progression** abroad. Language barriers and cultural differences slow down integration in foreign societies.
- **Limited Access to Healthcare & Welfare:** Many Indian expatriates **lack social security, health insurance, and government support** in their host countries, impacting their well-being.



International Protection for the Diaspora

- **UN Human Rights Framework:** India supports international treaties like the **International Covenant on Civil and Political Rights (ICCPR)** and the **International Convention on the Elimination of Racial Discrimination (ICERD)**, ensuring diaspora rights are protected.
- **UN Declaration on Minority Rights:** This declaration helps **diaspora communities preserve their cultural, religious, and linguistic identities**, ensuring equal rights in foreign countries.



LINKING FOREST ECOSYSTEM WITH GREEN GDP

Recently, Chhattisgarh became the first state in India to launch a groundbreaking initiative that connects the ecosystem services of forests to the Green Gross Domestic Product (Green GDP).

About

- **Traditional GDP**
  - **Definition:** It is the measure of the annual value of goods and services produced within a country, widely used since 1944.
  - **Limitation:** Simon Kuznets, the economist behind GDP, acknowledged that GDP doesn't capture a nation's true welfare since it ignores factors like environmental health and social well-being.
- **Green GDP**
  - **Definition:** Green GDP is a modified version of traditional GDP that incorporates environmental costs into the economic output, accounting for factors like resource depletion, pollution, and environmental degradation.
  - **Objective:** It provides a more accurate picture of a country's economic performance by integrating the environmental impact of economic activities.
- **Need for Green GDP**
  - **Limitation of Traditional GDP:** Traditional GDP focuses solely on economic output, overlooking sustainability, environmental degradation, and social welfare.
    - It doesn't account for the long-term effects of economic activities on the environment.
  - **Benefits of Green GDP:** Green GDP ensures economic growth aligns with sustainability by reflecting the environmental and resource costs that are otherwise ignored in traditional GDP.
- **Uttarakhand's GEP Index**
  - In 2024, Uttarakhand became the first state to launch the Gross Environment Product (GEP) Index, a system to evaluate environmental health.
  - The GEP Index measures contributions to the environment beyond traditional ecosystem services.
    - It includes factors such as tree species value, survival rates, and conservation efforts, offering a comprehensive approach to assessing ecosystem growth.

Green GDP and Sustainable Development

- **Sustainable Resource Use:**
  - By factoring in environmental damage, Green GDP encourages responsible consumption and production, promoting SDG 12 (Responsible Consumption and Production).
  - It shifts the focus from maximizing economic output to preserving natural resources for long-term prosperity.
- **Climate Change Mitigation:**
  - Green GDP supports reducing fossil fuel dependency and encourages the adoption of renewable energy.
  - This contributes to SDG 13 (Climate Action), supporting the global effort to combat climate change.
- **Biodiversity Conservation:**
  - Green GDP fosters environmental preservation by safeguarding ecosystems and species, aligning with SDG 15 (Life on Land) and SDG 14 (Life Below Water).
  - It helps policymakers develop regulations that ensure economic growth is balanced with ecological sustainability.
- **Incentivizing Green Investments:**
  - Green GDP encourages investments in sustainable technologies, fostering green jobs and industries.
  - This supports SDG 8 (Decent Work and Economic Growth), driving inclusive and sustainable economic growth while prioritizing environmental health.

Challenges in Green GDP Framework

- **Forest Cover Definition:**
  - The forest cover is defined as 'all land, more than one hectare in area, with a tree canopy density of more than 10 percent irrespective of ownership and legal status.
  - Such land may not necessarily be a recorded forest area. It also includes orchards, bamboo and palm'.
- **Methodological Differences:**
  - There is no universally accepted method for calculating Green GDP, making cross-country comparisons challenging.
  - Valuing environmental costs and services is a complex process, and the approach may vary depending on local conditions, priorities, and available data.
  - This lack of standardization can reduce the reliability of global Green GDP assessments.
- **Local Body Integration:**
  - **Lack of Awareness and Literacy:** Many grassroots leaders are not familiar with the concepts of Green GDP and sustainable development, making it difficult for them to engage effectively in related initiatives.
  - **Limited Technical Expertise:** Accurate ecological and economic data collection requires specialized skills, which local bodies often lack.
  - **Resource Constraints:** Panchayats frequently operate with limited financial and human resources, hindering their ability to implement comprehensive environmental monitoring systems.

- **Data Collection Challenges:** The absence of standardized methodologies and tools for environmental data collection at the local level leads to inconsistencies and gaps in data, affecting the reliability of Green GDP calculations.

➲ **Lack of Clarity on Benefits:** The financial benefits of Green GDP accounting remain unclear, particularly in terms of how they will reach local communities such as tribes and forest dwellers.
- These communities have traditionally played a key role in forest preservation, and it is important to ensure that they directly benefit from Green GDP initiatives.

Global Practices of Green GDP

➲ **United Nations:** The **System of Environmental-Economic Accounting (SEEA)**, developed by the UN, integrates economic and environmental data to provide a comprehensive understanding of the relationship between the economy and the environment.
- It focuses on environmental assets and their benefits to humanity.

➲ **European Union:** The EU's Beyond GDP initiative incorporates sustainability metrics into economic assessments, prioritizing the long-term health of the planet and emphasizing environmental concerns alongside economic factors.

➲ **World Bank:** The **Wealth Accounting and the Valuation of Ecosystem Services (WAVES)** program, led by the World Bank, promotes sustainable development by integrating natural resource accounting into national development planning.

➲ **Bhutan:** Bhutan's Gross National Happiness (GNH) framework emphasizes ecological sustainability as a core principle of its development policies, integrating environmental health into measures of national well-being.

➲ **Other Countries:** Countries such as China, Norway, and the US have explored incorporating environmental costs into national accounting systems, taking steps to account for ecological impact alongside economic factors.

WAY FORWARD

➲ **Establishing a Standardized Framework and Methodology**
- Develop and adopt a **unified framework** for measuring and valuing environmental costs and benefits.
- Base methodologies on **scientific and economic best practices** to ensure accuracy and credibility.
- Conduct **pilot projects and case studies** to test, refine, and improve Green GDP calculations before full-scale implementation.

➲ **Enhancing Data Collection and Quality**
- Improve **availability, accuracy, and consistency** of environmental indicators such as emissions, resource use, and ecosystem services.
- Ensure **harmonization and comparability** of data across different countries to facilitate global benchmarking.

➲ **Raising Awareness and Advocacy**
- Promote **awareness and understanding** of Green GDP among policymakers, businesses, and the public.
- Highlight its **advantages over conventional GDP**, emphasizing its role in measuring economic performance while accounting for social well-being and sustainability.
- Conduct **educational campaigns and training programs** to equip stakeholders with the knowledge needed to adopt Green GDP principles.

➲ **Encouraging Stakeholder Collaboration**
- Facilitate the active participation of **governments, international organizations, civil society, academia, and the private sector** in Green GDP policy formulation and execution.
- Strengthen **public-private partnerships (PPPs)** to fund and support Green GDP initiatives.

➲ **Managing Trade-offs and Policy Conflicts**
- Address potential conflicts between **economic growth and environmental sustainability** by designing policies that balance both objectives.
- Ensure **equity and justice** by considering the impact of Green GDP policies on different groups, regions, and economic sectors.
- Develop **compensation mechanisms and incentives** to support industries and communities transitioning toward a green economy.

DEPRECIATION OF INDIAN RUPEE

Recently, the Indian rupee hit an all-time low, crossing the 86 mark against the US dollar, raising concerns over currency depreciation.

About

- **Definition:** Currency depreciation refers to the **decline in the value of one country's currency** relative to another.
- **Depreciation of the Indian Rupee:** The Indian rupee has **periodically depreciated** against major currencies, especially the **US dollar**. Over the past **10 months**, the rupee has depreciated by **3.6%**.
- **Key Factors of INR:**
  - **Rising Crude Oil Prices:** Higher global crude oil prices have increased India's import bills, putting downward pressure on the rupee.
  - **Foreign Institutional Investor (FII) & Foreign Portfolio Investor (FPI) Outflows:**
    - Since October 2024, FIIs have been selling heavily in Indian markets.
    - Net sales of $11 billion in Q3 FY25 have further weakened the rupee.
    - FPIs have also shifted investments away from India due to global economic uncertainties, reducing foreign currency inflows.
  - **Widening Trade Deficit:**
    - The trade deficit has reached $188 billion in the current fiscal year.
    - It is expected to increase by 18% over FY24, further weakening the rupee.
  - **Increased Demand for US Dollars:** Foreign banks have increased demand for US dollars, adding pressure on the rupee.
  - **Weak Domestic Markets:** A decline in domestic equity and bond markets has reduced investor confidence, making the rupee less attractive to foreign investors.

Impact of Rupee Depreciation

- **Inflationary Pressures** – A weaker rupee increases the cost of imports, raising prices of essential commodities like fuel, electronics, and raw materials.
- **Higher Import Bills** – India relies on imports for crude oil, gold, and machinery. A depreciating rupee escalates costs, worsening the trade deficit.
- **Export Competitiveness** – A weaker rupee makes Indian exports cheaper in foreign markets, boosting sectors like textiles, IT services, and pharmaceuticals.
- **Rising Foreign Debt Burden** – Borrowings in foreign currencies become costlier, increasing repayment liabilities for companies and the government.
- **Stock Market Volatility** – A depreciating rupee may trigger foreign investor outflows, leading to stock market instability and reduced investor confidence.
- **Higher Education & Travel Costs** – Overseas education, tourism, and medical expenses become more expensive for Indian students and travelers.
- **Pressure on Forex Reserves** – To stabilize the currency, the RBI may intervene by selling foreign exchange, leading to a depletion of forex reserves.

Measures to Deal with Depreciation of Currency:

- **Foreign Exchange Market Interventions**
  - **Buying or Selling US Dollars** – The RBI intervenes by selling dollars from its forex reserves when the rupee depreciates and buying dollars when it appreciates.
  - **Example:** If the rupee weakens sharply, RBI sells dollars to increase supply, stabilizing the exchange rate.
- **Monetary Policy Tools**
  - **Repo Rate Adjustments** – Raising interest rates makes Indian assets more attractive to foreign investors, increasing forex inflows and strengthening the rupee.
    - Repo rate is the rate at which the central bank of a country (RBI in case of India) lends money to commercial banks in the event of any shortfall of funds.
- **Open Market Operations (OMO)**
  - **Buying/Selling Government Bonds** – RBI controls liquidity by purchasing bonds (injecting liquidity) or selling bonds (absorbing liquidity), indirectly influencing the rupee's value.
- **Trade Policy Measures**
  - **Import Duty Adjustments** – Increasing import duties on certain products reduces dollar demand, helping stabilize the rupee.
  - **Example:** Hike in gold import duty to control rising gold imports and rupee depreciation.
- **External Borrowings & Foreign Investment Management**
  - **Encouraging Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI)** – By making Indian markets attractive to global investors, RBI increases dollar inflows.
  - **Example:** Liberalizing FDI in sectors like insurance and defense to attract foreign capital.
- **Currency Swap Agreements**
  - **Bilateral Agreements with Other Central Banks** – RBI enters swap agreements with other countries to ensure foreign currency liquidity when needed.
  - **Example:** India's currency swap agreement with Japan to access emergency foreign exchange.
- **Forward Market Interventions:** RBI uses forward contracts to stabilize rupee fluctuations without immediate forex reserve depletion.

ILO REPORT ON INTERNATIONAL MIGRANTS

The International Labour Organization (ILO) recently published the fourth edition of its Global Estimates on International Migrant Workers.

Definition:

- Migration refers to the movement of people from one place to another, either within a country or across international borders, for temporary or permanent settlement due to economic, social, political, or environmental factors.
- According to the **United Nations Department of Economic and Social Affairs (UN DESA)**, migration is defined as: "The movement of persons away from their place of usual residence, either across an international border or within a State."
- The **World Bank** describes migration as: "The movement of people from one place to another, driven by economic, social, or environmental factors, often influencing labor markets and economic development."

Types of Migration Based on Push and Pull Factors:

- **Push Factors (Forcing People to Migrate)**
  - **Economic Push Factors:**
    - Lack of job opportunities and low wages (e.g., rural-to-urban migration in India due to agricultural distress).
    - High cost of living and inflation.
  - **Social Push Factors:**
    - Poor education and healthcare facilities (e.g., migration from remote villages to metropolitan cities).
    - Discrimination or social unrest.
  - **Political Push Factors:**
    - War, political instability, and persecution (e.g., Rohingya refugee crisis).
    - Human rights violations and lack of freedom.
  - **Environmental Push Factors:**
    - Natural disasters (e.g., floods, earthquakes, and droughts in regions like Sundarbans, leading to displacement).
    - Climate change impacts (e.g., desertification forcing migration in sub-Saharan Africa).
- **Pull Factors (Attracting People to a Destination):** Pull factors are favorable conditions that encourage people to migrate to a new location.
  - **Economic Pull Factors:**
    - Better job opportunities and higher wages (e.g., migration of Indian IT professionals to the USA).
    - Improved business prospects and industrial growth.
  - **Social Pull Factors:**
    - Access to quality education and healthcare (e.g., student migration to developed nations for higher studies).
    - Presence of family, friends, or diaspora networks.
  - **Political Pull Factors:**
    - Political stability, better governance, and strong law enforcement.
    - Protection of human rights and social security.
  - **Environmental Pull Factors:**
    - Favorable climate and better living conditions.
    - Availability of resources like water and arable land (e.g., migration to greener and urbanized regions).

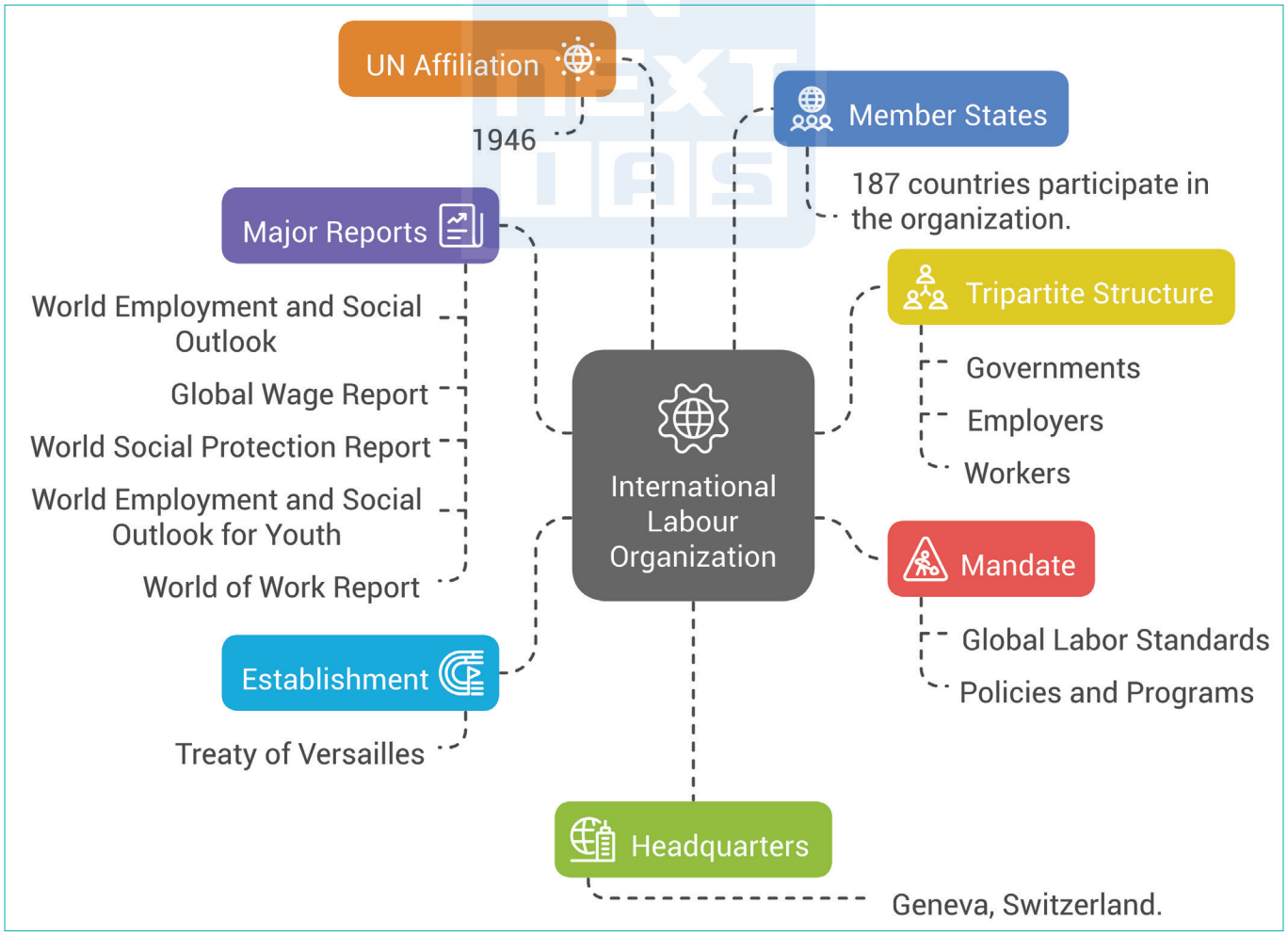
Key Highlights

- **Contribution to Global Economy:**
  - In 2022, international migrants accounted for **4.7% (167.7 million)** of the global labor force, including both employed and unemployed individuals.
  - The migrant workforce has grown significantly, increasing by **over 30 million** since 2013, reflecting the rising mobility of labor across borders.
- **Regional Distribution:**
  - **High-income countries** remain the largest destination for migrant workers, absorbing **68.4% (114 million)** of the total.
  - These migrants are primarily employed in service-based industries, including healthcare, hospitality, and domestic work.
- **Upper-middle-income countries** hosted **17.4% (29.2 million)** of international migrants, with a notable presence in manufacturing and trade.
- **Labour force share of migrants in key regions:**
  - **Northern, Southern, and Western Europe:** 23.3% of the total workforce comprises international migrants.
  - **North America:** 22.6% of the workforce consists of migrant workers, contributing significantly to sectors such as retail, healthcare, and technology.
- **Employment Sectors**
  - **Services Sector:** 68.4% of international migrants are engaged in service-oriented jobs, surpassing the share of non-migrants in this sector.
    - **Women (80.7%)** dominate service-based jobs, especially in domestic work and caregiving.
    - **Men (60.8%)** also form a substantial part of the service workforce, including transportation, hospitality, and IT services.
  - **Care Economy Contribution:**
    - **Migrant Women:** 28.8% are engaged in caregiving, including nursing and childcare.
    - **Migrant Men:** 12.4% contribute to healthcare and support roles.

- **Industry Sector: 24.3% of migrant workers** are employed in manufacturing, construction, and mining.
- **Agriculture Sector: 7.4%** of migrants work in agriculture, compared to **24.3% of non-migrants**, highlighting a declining presence of migrants in farming due to industrialization and urban employment opportunities.

Key Challenges Faced by International Migrants

- **Legal and Documentation Issues:**
  - Difficulty in obtaining visas, work permits, and residency status.
  - Complex immigration laws and risk of deportation due to legal non-compliance.
  - **Example:** Many undocumented migrants in the U.S. face legal uncertainty and deportation threats.
- **Employment and Economic Challenges:**
  - Exploitation in low-wage jobs, poor working conditions, and wage theft.
  - Lack of recognition for qualifications and skills acquired in home countries.
  - **Example:** Migrant workers in the Gulf often experience labor rights violations and contract breaches.
- **Language and Cultural Barriers:**
  - Difficulty in communication, leading to social isolation and workplace challenges.
  - Struggles in adapting to new cultural norms, affecting integration.
  - ***Example:*** Many South Asian migrants in Europe face difficulties due to language constraints.
- **Discrimination and Xenophobia:**
  - Prejudices based on nationality, race, or religion leading to social exclusion.
  - Rising anti-immigrant sentiments in various countries affect safety and well-being.
  - **Example:** Reports of hate crimes against migrants in the U.K. and U.S. have increased.
- **Exploitation and Human Trafficking:**
  - Vulnerability to forced labor, trafficking, and abuse, especially for low-skilled workers.
  - Lack of protection mechanisms for domestic and undocumented workers.
  - **Example:** Reports of South Asian domestic workers facing abuse in Middle Eastern countries.

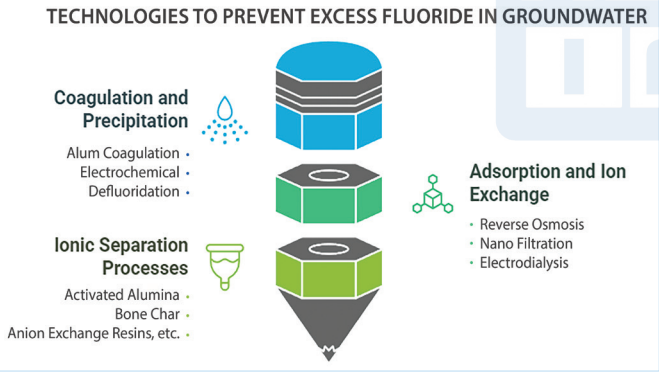


ANNUAL GROUND WATER QUALITY REPORT, 2024

Recently, the Central Groundwater Board (CGWB) under the Jal Shakti Ministry released the Annual Ground Water Quality Report 2024, raising major concerns about India's groundwater quality.

Key Highlights

- **Dependence on Groundwater**
  - Groundwater is crucial, meeting **85% of rural drinking water** and **62% of irrigation needs**.
  - Over-extraction depletes water tables and increases contamination risks.
- **Contamination and Regional Variations**
  - **Major pollutants:**
    - **Nitrate (20%)** – Mainly from fertilizer runoff in Rajasthan, Tamil Nadu, and Maharashtra.
    - **Fluoride (9.04%):** High in Rajasthan, Haryana, Karnataka, Andhra Pradesh, and Telangana, causing health risks.
    - **Arsenic (3.55%):** Severe in Ganga-Brahmaputra floodplains (West Bengal, Bihar, Assam, Uttar Pradesh, etc).
    - **Uranium:** High in Rajasthan (42% of unsafe samples) and Punjab (30%).
  - **States with safe groundwater:** Arunachal Pradesh, Mizoram, Meghalaya.
  - **Highly contaminated states:** Rajasthan, Punjab, Haryana, Andhra Pradesh.



- **Seasonal Influence on Water Quality**
  - **Monsoon improves water quality temporarily** by diluting contaminants.
  - **Post-monsoon salinity increase** in areas like Barmer and Jodhpur signals long-term groundwater issues.
- **Electrical Conductivity (EC) and Salinity Issues**
  - Electrical Conductivity (EC) measures the presence of dissolved ions and charged particles in water.
  - Higher Electrical Conductivity indicates contamination from industrial wastewater, agricultural runoff, or sewage discharge.
  - Electrical Conductivity helps identify water quality issues even without pinpointing specific pollutants.
  - Increased Electrical Conductivity generally indicates higher pollution levels in a water body.
  - **High EC levels** in Rajasthan, Delhi, Gujarat, Haryana, Punjab, Telangana, Andhra Pradesh, and Karnataka.
- **Urban Groundwater Challenges**
  - **Industrial effluents and untreated sewage** degrade groundwater quality.
  - **Microbial contamination** is a rising concern, impacting drinking water safety.
- **Impact on Agriculture**
  - **Coastal groundwater salinity** reduces soil fertility and crop yields.
  - **High salt content** affects irrigation, leading to declining agricultural productivity.

Degradation of Ground Water Quality

- **Industrialization and Pollution**
  - **Rapid industrial expansion** has led to **untreated waste discharge**, introducing **heavy metals, toxic chemicals, and solvents** into groundwater.
  - **Industrial clusters near water sources** in states like **Punjab, Gujarat, and Maharashtra** show higher levels of heavy metal contamination.
- **Agricultural Practices and Nitrate Contamination**
  - **Overuse of chemical fertilizers and pesticides** leads to nitrate leaching into aquifers, causing severe contamination.
  - **Unregulated borewell drilling for irrigation** depletes water tables and increases **fluoride and salinity levels** in regions like Rajasthan, Haryana, and Andhra Pradesh.
  - **Pesticide residue accumulation** is a growing concern, with harmful chemicals entering groundwater sources.
- **Urbanization and Waste Mismanagement**
  - **Unplanned urban expansion** has led to **sewage leakage, landfill contamination, and unregulated waste disposal**, impacting shallow aquifers.
  - **Leaching from municipal solid waste dumps** introduces **pathogens, organic pollutants, and heavy metals**, increasing health risks.
  - **Microbial contamination** due to poorly managed sanitation systems is a significant issue in urban groundwater sources.
- **Climate Change and Aquifer Depletion**
  - **Irregular monsoons and prolonged droughts** reduce natural groundwater recharge, lowering water levels.
  - **Rising temperatures and increased evaporation** intensify groundwater salinization, especially in coastal states like Gujarat, Tamil Nadu, and Odisha.
  - **Over-extraction in semi-arid regions** leads to an alarming rise in **arsenic and uranium contamination** in groundwater.

- **Over-Exploitation of Groundwater**
  - **Extraction beyond recharge levels** leads to groundwater stress, as seen in Punjab, Haryana, and western Uttar Pradesh.
  - **Deep drilling for water access** increases exposure to naturally occurring toxic elements like arsenic, uranium, and fluoride.
- **Salinity Intrusion in Coastal Areas**
  - **Excessive groundwater extraction near coastal regions** leads to seawater intrusion, increasing salinity.
  - **States like Gujarat, Tamil Nadu, and West Bengal** are experiencing reduced freshwater availability due to saltwater mixing in groundwater reserves.
- **Lack of Effective Regulation and Monitoring**
  - **Weak enforcement of environmental laws** leads to unchecked groundwater pollution from industries and urban areas.
  - **Limited real-time monitoring** results in delayed responses to contamination hotspots.
  - **Unregulated sand mining** along river beds impacts natural groundwater recharge, further aggravating water quality issues.

Key Initiatives by Government

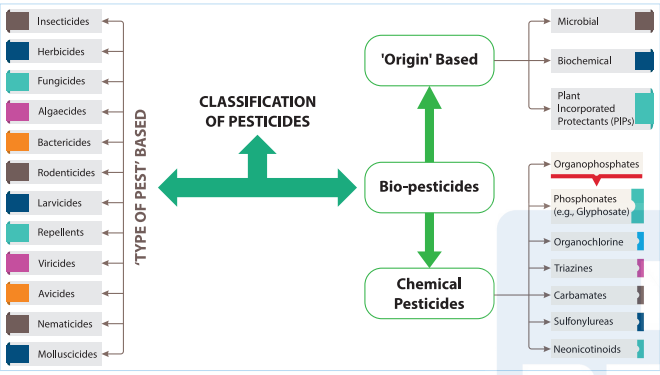
- **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)**
  - **Focus:** Integrates water conservation activities such as ponds, check dams, and water harvesting structures into rural employment programs.
  - **Impact:** Enhances rural water security and groundwater recharge by improving local water storage capacity.
- **Jal Shakti Abhiyan (JSA)**
  - **Launched:** 2019; currently in its 5th phase ("Catch the Rain" 2024).
  - **Focus:** Encourages rainwater harvesting and groundwater recharge across rural and urban districts.
  - **Implementation:** Promotes inter-departmental convergence of various water conservation schemes.
- **Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0**
  - **Focus:** Supports urban rainwater harvesting through stormwater drains and promotes groundwater recharge via Aquifer Management Plans.
  - **Implementation:** Ministry of Housing & Urban Affairs has developed guidelines like:
  - **Unified Building Bye-Laws (UBBL), Delhi (2016)**
    - Model Building Bye-Laws (MBBL), 2016
    - Urban and Regional Development Plan Formulation and Implementation (URDPFI), 2014
  - **Impact:** Integrates rainwater harvesting mandates into urban planning regulations.
- **Atal Bhujal Yojana (2020)**
  - **Focus:** Targets groundwater management in water-stressed Gram Panchayats across 80 districts in 7 states.
  - **Implementation:** Uses a community-led approach to promote sustainable water use.
- **Pradhan Mantri Krishi Sinchai Yojana (PMKSY)**
  - **Focus:** Expands irrigation coverage and improves water-use efficiency.
  - **Key Components:**
    - **Har Khet Ko Pani –** Ensures every farm receives irrigation.
    - **Repair & Renovation of Water Bodies** – Revitalizes existing water sources.
    - **Surface Minor Irrigation Schemes –** Enhances local irrigation networks.
- **Bureau of Water Use Efficiency (BWUE) – National Water Mission (2022)**
  - **Established:** By the Ministry of Jal Shakti.
  - **Focus:** Enhances water-use efficiency across irrigation, drinking water, power generation, and industrial sectors.
  - **Impact:** Encourages water conservation practices in diverse economic sectors.
- **Mission Amrit Sarovar (2022)**
  - **Focus:** Aims to create or rejuvenate 75 Amrit Sarovars (ponds/lakes) in every district.
  - **Impact:** Enhances rainwater harvesting and groundwater recharge.
- **National Aquifer Mapping (NAQUIM)**
  - **Implemented by:** Central Ground Water Board (CGWB).
  - **Focus:** Maps over 25 lakh sq. km of aquifers to support groundwater conservation plans.
  - **Impact:** Provides scientific data for groundwater recharge and sustainable water use.
- **National Water Policy (2012)**
  - **Formulated by:** Department of Water Resources, River Development & Ganga Rejuvenation.
  - **Focus:** Advocates for rainwater harvesting, water conservation, and direct use of rainfall.
  - **Impact:** Guides policy-level decision-making for sustainable water management.
- **Watershed Development Component of PMKSY (WDC-PMKSY)**
  - **Focus:** Targets rainfed and degraded lands to implement:
    - Soil conservation measures.
    - Rainwater harvesting projects.
    - Livelihood development for rural communities.
  - **Impact:** Restores degraded landscapes and promotes climate-resilient agriculture.
- **National Water Awards (2018)**
  - **Launched by:** Department of Water Resources.
  - **Focus:** Recognizes and encourages best practices in water conservation and management.
  - **Impact:** Raises public awareness and promotes community-driven water conservation initiatives.

PESTICIDE POISONING AND REGULATIONS

Recently, a new study revealed that more than 70% of wild bee species, essential for pollinating food crops, are at significant risk due to pesticide residues in soil.

About

- Pesticides are substances or mixtures of substances that are used to **prevent, destroy, repel, or mitigate pests.**
- **Pests can include** insects, rodents, fungi, weeds, and other organisms that can **negatively impact agriculture.**
- Pesticides are commonly used in **agriculture to protect crops from pests and increase yields.**



Concerns with Use of Pesticides

- **Harm to Pollinators:**
  - Pesticides, especially **neonicotinoids** *(It is a class of neuro-active insecticides chemically similar to nicotine)* pose significant risks to pollinators like bees, butterflies, and other insects that are crucial for crop pollination.
  - Studies have shown that pesticide exposure can lead to colony collapse, reducing pollination and negatively affecting food production.
- **Soil Health Degradation:**
  - Pesticide residues can accumulate in the soil over time, harming soil microorganisms that play a key role in nutrient cycling, soil fertility, and overall ecosystem health.
  - This disrupts the balance of soil life, potentially reducing agricultural productivity in the long term.
- **Water Contamination**:
  - Pesticides can run off from fields into nearby water bodies, contaminating rivers, lakes, and groundwater.
  - This can lead to the poisoning of aquatic life, making water unsafe for consumption, and affecting the broader ecosystem.
- **Pesticide Resistant Pests**:
  - The continuous use of pesticides can lead to the evolution of pesticide-resistant pests, making it more difficult to control them. *Example*, Diamondback moth
  - This creates a vicious cycle where farmers must use even more toxic chemicals, worsening the environmental impact.
- **Health Risks to Humans**:
  - Long-term exposure to pesticides can pose health risks to farm workers and consumers.
  - These risks include respiratory problems, neurological disorders, and even cancer.
  - Children are particularly vulnerable to pesticide exposure due to their developing immune systems.
- **Impact on Biodiversity**:
  - Pesticides can harm non-target species, including beneficial insects, birds, and other wildlife.
  - This can lead to a loss of biodiversity, disrupting food chains and reducing ecosystem resilience.
- **Resistance in Weeds**:
  - Just as pests develop resistance, certain weeds have become resistant to herbicides, resulting in the increased use of stronger chemicals.
  - This creates an environmental burden, as more potent chemicals are needed to manage weed growth.

Regulation of Pesticides in India

- **Insecticide Act, 1968**
  - The **Ministry of Agriculture** regulates pesticides through the **Central Insecticide Board and Registration Committee (CIB & RC)**, established under this Act.
  - The **CIB & RC** oversees the **manufacturing, import, transport, and storage** of pesticides.
  - Based on its regulations, pesticides can be **registered, banned, or restricted** in India.
- **Maximum Residue Limit (MRL) Standards**
  - The **Food Safety and Standards Authority of India (FSSAI)** aligns pesticide residue standards with international benchmarks.
  - **It follows guidelines set by:**
    - **Codex Alimentarius Commission** (a global food safety and quality standards body under WHO & FAO).
    - **European Union (EU)** regulations.
    - MRL for pesticides in herbs ranges from **0.01 mg/kg to 0.1 mg/kg**.
- **Anupam Verma Committee**
  - Formed by the **Department of Agriculture & Farmers Welfare** to **review 66 pesticides** that were banned or restricted in other countries but were still registered in India.
  - The committee assessed the safety, environmental impact, and necessity of these pesticides for agricultural use.

INDIA METEOROLOGICAL DEPARTMENT (IMD)

Recently, the India IMD marked its 150th anniversary of service on January 15, 2025.

About

- **Established:** 1875
- **Role:** National Meteorological Service of India and principal government agency for meteorology and allied subjects.
- **Parent Ministry:** Ministry of Earth Sciences, Government of India.
- **Headquarters:** New Delhi.
- **Global Role:** One of the six Regional Specialized Meteorological Centres of the World Meteorological Organization.
- **Objectives:**
  - **Weather Monitoring & Forecasting:** Collects meteorological data and provides forecasts to support weather-sensitive sectors such as agriculture, irrigation, shipping, aviation, and offshore oil exploration.
  - **Severe Weather Warnings:** Issues alerts for extreme weather events like tropical cyclones, norwesters, dust storms, heavy rains, snow, cold waves, and heat waves to minimize damage to life and property.
  - **Meteorological Data for Development:** Supplies weather-related statistics essential for agriculture, water resource management, industries, oil exploration, and other nation-building activities.
  - **Research & Innovation:** Conducts and promotes research in meteorology and allied disciplines to enhance weather prediction and climate studies.

Did You Know?

The India Meteorological Department (IMD) became the first organization in India to have a message switching computer for supporting its global data exchange.

IMD: Achievements and Advancements

- **Pioneering Weather Observations**
  - **Mercury Barometer Replacement:** By 2023, IMD replaced all Mercury Barometers with Digital Barometers at Class I observatories as part of the UNEP Minamata Convention, promoting environmental safety.
  - **Agro-Meteorological Services Enhancement:** Deployment of 200 AGRO AWS stations to improve services for the agriculture sector.
  - **GPS-based Pilot Balloon (PB) Stations:** Maintains 25 GPS-based PB Stations, with 5 IMD-manufactured and 20 outsourced from Indian manufacturers.
- **Communication and Outreach**
  - **Crowdsource Web Interface:** Launched in January 2021, the Crowdsource web interface enables users to report weather conditions anytime, anywhere.
  - **Public Observation Mobile App:** Introduced in January 2022, the Public Observation App allows public participation in weather reporting.
  - **Crowdsourced Weather Data:** IMD started collecting crowdsourced data on weather events like Rain, Hail, Dust Storms, Wind Speed, Thunderstorms, and Fog.
- **Advances in Numerical Weather Prediction**
  - **Improved Forecast Accuracy:** Achieved a 40% improvement in overall forecast accuracy in 2023 compared to 2014.
  - **Doppler Weather Radar Expansion:** Expanded the Doppler Weather Radar (DWR) network from 15 in 2014 to 39 in 2023, increasing coverage by 35%.
  - **Cyclone Prediction Success:** Successfully predicted major cyclones such as Phailin (2013), Hudhud (2014), Fani (2019), Amphan (2020), Tauktae (2021), Biparjoy (2023), and Dana (2024), showcasing the department's life-saving capabilities.
  - **Reduction in Cyclone Deaths:** The number of cyclone-related deaths decreased from 10,000 in 1999 to Zero in 2020-2024 due to more accurate cyclone warnings.

Did You Know?

India was the first developing country in the world to have its own geostationary satellite, INSAT, for continuous weather monitoring of this part of the globe and particularly for cyclone warning.

- **Technological Advancements**
  - **HRRR and EWRF Models:** Introduced the High-Resolution Rapid Refresh (HRRR) model for rainfall and reflectivity forecasts, and the Electric Weather Research and Forecasting (EWRF) model for lightning and rainfall predictions.
  - **Mausamgram Meteogram:** Released in January 2024, Mausamgram is an interactive, dynamic meteogram that provides location-specific weather forecasts.
  - **Increased Automatic Rain Gauges:** The number of Automatic Rain Gauges (ARG) increased from 1,350 in 2014 to 1,382 in 2023.
  - **Expansion of DRMS Stations:** The number of District-wise Rainfall Monitoring Scheme (DRMS) stations grew from 3,955 in 2014 to 5,896 in 2023.

DECCAN VOLCANISM'S IMPACT ON TROPICAL FLORA

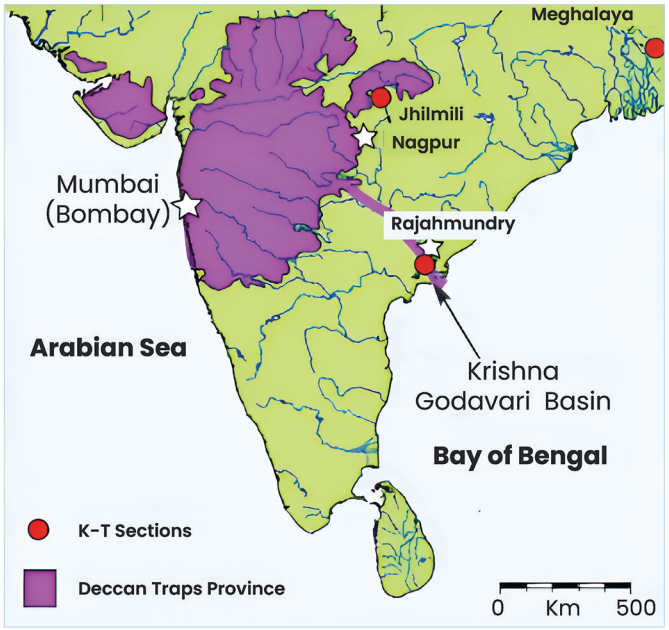
Recently, a new study found that tropical flora demonstrated remarkable resilience during the Deccan Volcanism on the Indian Plate, even as it led to mass extinctions of fauna.

Key Findings

- **Impact on Fauna and Flora**
  - **Mass Extinctions**: Deccan Volcanism led to the extinction of dinosaurs, other fauna, and gymnosperms due to extreme environmental changes.
  - **Support for Tropical Flora**: Despite causing faunal extinctions, it favored angiosperms (flowering plants) by creating fertile, undisturbed habitats, preventing large-scale floral extinction.
  - **Climatic Influence**: A warm, humid climate during volcanic inactivity and the movement of the Indian Plate through the equator promoted floral diversity.
- **Global and Regional Implications**
  - **Role in Mass Extinction**: Deccan Volcanism was a contributing factor to the Cretaceous-Paleogene (K-Pg) mass extinction (66 million years ago), leading to the decline of ammonoids (marine cephalopods) and dinosaurs globally.
  - **Resilience of Tropical Rainforests**: Unlike many other regions, tropical rainforests in the Indian Plate adapted and thrived, demonstrating a higher resilience of tropical flora to climatic stresses.

Deccan Volcanism

- **About**
  - The **Deccan Volcanism Theory** posits that volcanic eruptions, leading to the formation of the **Deccan Traps**, played a significant role in the **mass extinction event** approximately **66 million years ago**.
  - The **Deccan Traps** are a vast volcanic plateau in **peninsular India**, formed by **fissure volcanic eruptions**.
  - These eruptions occur when magma escapes through long **cracks or fissures** in the Earth's crust, rather than through a central volcanic vent.
- **Formation of the Deccan Traps**
  - The **Deccan Traps** are believed to have formed as a result of intense volcanic activity caused by the **Deccan mantle plume**, which continued for several hundred thousand years.
  - A **mantle plume** is an upwelling of hot, molten rock from the Earth's mantle that leads to volcanic hotspots independent of plate boundaries.
  - The **Deccan Traps** now consist of **vast layers of basaltic lava flows**, formed during large-scale volcanic eruptions.
- **Connection with Indian Plate Movement**
  - Approximately **200 million years ago**, **India** was a large island off the coast of **Australia**, and it began its **northward journey** towards its current position.
  - Underneath the **Indian Plate**, the **Réunion hotspot** (a mantle plume of molten rock) caused fissure volcanic eruptions as the plate moved over it, leading to the formation of the **Deccan Traps**.
  - The **Réunion hotspot** is located in the **Indian Ocean**, near the island of **Réunion** (a French overseas region).
- **Economic Significance of Deccan Volcanism**
  - ***Major Rocks***
    - **Basalt** is abundant in the **Deccan Traps**, while **granite** and **gneiss** are common in southern India, particularly in **Karnataka** and **Tamil Nadu**.
    - Mineral Resources
    - **Iron ore** is abundant in **Karnataka**, and **bauxite** is found in the **Eastern Ghats**, contributing significantly to the region's mineral wealth.
  - ***Agriculture***
  - The region supports the cultivation of crops like **cotton** and **tobacco** due to the fertile **Black soil** formed from volcanic rock weathering, particularly **basalt**.
  - **Black soil** is rich in minerals such as **iron, magnesium, calcium, and potassium**, making it ideal for agriculture.
- **Geographical Extent:** The **Deccan Traps** cover significant areas of **South India**, including parts of **Maharashtra, Karnataka, Gujarat, Madhya Pradesh, Andhra Pradesh,** and **Tamil Nadu**, with smaller extensions into **Telangana** and **Kerala**.



COMPLETION OF GENOME INDIA PROJECT

Recently, the Prime Minister of India hailed the completion of the Genome India Project, calling it a 'historic step in the world of research' at the Genome India Data Conclave, held at Vigyan Bhavan, New Delhi.

About the Genome India Project

- It was launched in **2020 by the Department of Biotechnology (DBT)** and coordinated by the Indian Institute of Science (IISc), Bengaluru.
- It involved sequencing the genomes of individuals from 99 distinct populations across the country. It accounts for about 2% of India's 4600 population groups.

Key Achievements of the Genome India Project

- Collected **over 19,000 blood samples**, approaching the **20,000-sample target**, with samples stored in the **Genome India Biobank** for future research.
- Completed **whole-genome sequencing of 10,074 samples**, representing **99 ethnic groups across India**.
- In **Phase 1**, scientists analyzed **5,750 samples**, revealing unique insights into **India's genomic structure**.
- The genome data is now accessible at the **Indian Biological Data Center (IBDC) in Faridabad, Haryana**.

Impact on Biotechnology and Healthcare

- **Empowering Global Research**: The launch of **IBDC Portals** and the **Framework for Exchange of Data Protocols (FeED)** enables **easy access to genetic data**.
  - Strengthens **India's position in genomics**, supporting the development of **genomic chips suited to the Indian population**.
  - Advances in research in **mRNA-based vaccines, protein production, and treatments for genetic disorders**.
- **Improving Public Healthcare**: Helps in **disease prevention and treatment** by providing a **genetic basis for medical research**.
  - Enhances healthcare systems by **tailoring treatments to genetic variations**.
- **Encouraging Innovation:** Sequencing 10,000 genomes has created a comprehensive genetic database, enabling the development of customized genomic chips tailored to India's diverse population.
- **Supporting Policy Making:** The project's rich genetic data offers policymakers critical insights into the health profiles of various Indian communities. This information is instrumental in designing targeted health strategies that effectively address region-specific health challenges.
- **Boosting the Bioeconomy:** India's bioeconomy has experienced remarkable growth, expanding from $10 billion in 2014 to over $130 billion in 2024, with a target of $300 billion by 2030.

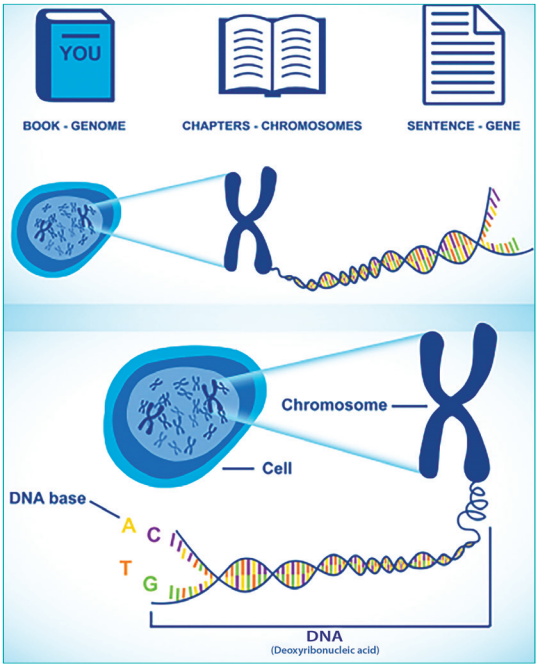
Understanding Genomes

- A genome is the complete set of **deoxyribonucleic acid (DNA)** in an organism, **containing all the genetic information** necessary for the **development, functioning, and reproduction** of that organism. In living organisms, genetic information is stored in long molecules of DNA called **chromosomes**.
- In humans, the genome is composed of **approximately 3.05 billion base pairs** of DNA, which are **organized into 23 pairs of chromosomes.**

Key Components of a Genome:

- **DNA:** The genome is made up of DNA, a double-stranded molecule consisting of four types of bases: Adenine (A), Cytosine (C), Guanine (G), and Thymine (T). These bases pair (A with T and C with G) to form the rungs of the DNA ladder.
- **Genes:** Segments of DNA that code for proteins or functional RNA molecules. **Genes are the functional units** of heredity and play a crucial role in determining an organism's traits.
- **Non-coding Regions:** Parts of the genome that do not code for proteins but have regulatory functions, such as controlling gene expression.

Genome Sequencing: It is the process of determining the precise order of the base pairs in a DNA molecule. It allows scientists to decode the genetic information contained within an organism's genome.

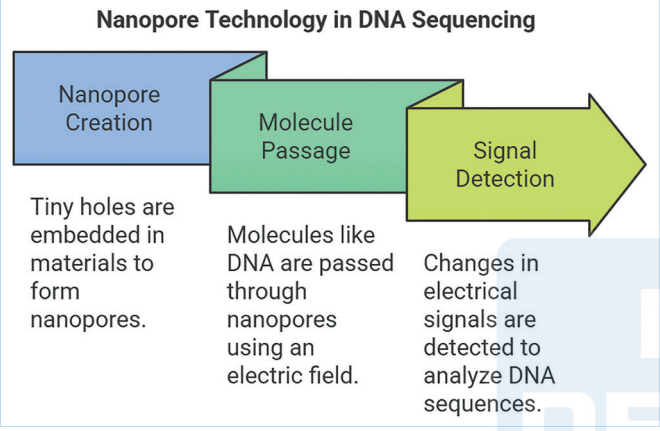


NANOPORE TECHNOLOGY

Nanopore technology is becoming a game-changer in molecular analysis, especially for DNA and RNA. It's being widely used in fields like genomics and diagnostics, offering faster and more efficient solutions.

About

- Nanopore technology involves embedding nano-sized holes in a thin membrane to detect changes when charged biological molecules, such as DNA, RNA, or amino acids, pass through these pores.
- This technology can analyze and sense individual molecules.



Advantages of Nanopore Technology:

- **High Resolution:** Nanopore technology offers high-resolution analysis, revealing fine details about molecular properties.
  - ***For example***, it can accurately sequence long DNA strands without breaking them into smaller pieces, unlike traditional sequencing methods.
- **Real-time Analysis:** The technology allows molecules to be analyzed as they pass through the nanopores, providing real-time insights.
  - ***For instance***, it's being used in the MinION device by Oxford Nanopore for continuous genomic data collection during research expeditions.
- **No Polymerase Chain Reaction (PCR) or Amplification Needed:** Traditional DNA sequencing often requires PCR amplification. Nanopore technology, however, can sequence DNA directly without this step, speeding up processes, as seen in the direct sequencing of COVID-19 genomes using nanopore technology.
  - **Polymerase Chain Reaction (PCR)** is a technique used to amplify small segments of DNA, making them easier to analyze.
  - It requires multiple cycles of heating and cooling to replicate DNA, which can be time-consuming and costly.
- **Portability:** Devices like the MinION are portable, allowing researchers to conduct DNA sequencing in remote locations, such as in the field during disease outbreaks or in remote environmental studies.
- **Minimal Sample Preparation:** Nanopore sequencing requires less sample preparation, reducing costs and time. It's being used in research to quickly analyze viral genomes, such as tracking new variants of the coronavirus.

Applications:

- **DNA Sequencing:** Nanopore technology allows rapid genome sequencing.
  - It has been used to sequence the full genome of the Ebola virus, providing quick data during outbreaks, and is now used for sequencing human genomes for personalized medicine.
- **Protein Analysis:** Nanopore technology helps in studying proteins and their structure.
  - *For example*, it is used in studying amyloid proteins linked to Alzheimer's disease to better understand their role in neurodegeneration.
- **Biomarker Detection:** This technology can detect biomarkers in blood or urine.
  - It is applied in identifying cancer biomarkers in non-invasive tests, allowing for earlier detection of diseases.
- **Environmental and Food Safety Testing:** Nanopore technology is used in water testing to identify harmful bacteria or pathogens, ensuring public health safety, as demonstrated in studies that detect pathogens in drinking water using nanopores.
- **Real-time Pathogen Detection:** During the COVID-19 pandemic, nanopore sequencing helped with immediate viral genome sequencing, allowing for faster tracking of mutations and new variants.
- **Pharmaceutical Research:** Nanopore technology plays a role in drug discovery by analyzing drug interactions with biological molecules, helping researchers design better treatments.
  - *For example*, it's used in screening potential drug candidates by analyzing their interactions at the molecular level.
- **Agrigenomics:** In agriculture, nanopore technology is employed to study plant genomes, enhancing crop breeding programs and improving food security.
- **Forensic Science:** The portability and speed of nanopore sequencing make it valuable in forensic investigations, allowing for rapid DNA analysis at crime scenes.
- **Educational Applications:** Due to its user-friendly interface and scalability, nanopore technology serves as an effective educational tool, facilitating hands-on learning in genomics and molecular biology.

SC BANS MANUAL SCAVENGING IN 6 METROPOLITAN CITIES

Recently, The Supreme Court passed directions banning manual scavenging and manual sewer cleaning in six metropolitan cities in a writ petition seeking the eradication of manual scavenging in India.

About

- **Definition**
  - Manual scavenging refers to the manual cleaning, carrying, handling, or disposal of human excreta from dry latrines, open drains, sewers, and septic tanks without protective gear or mechanized equipment.
  - The practice is hazardous, exposing workers to toxic gases, bacterial infections, and long-term health risks.
  - Despite an official ban, it continues due to inadequate sewage management, lack of mechanized alternatives, and economic dependence of marginalized communities on this occupation.
- **Supreme Court Directive (2023)**
  - In the case of **Dr. Balram Singh Vs Union of India (2023)**, the Supreme Court of India directed the Union Government to take immediate and appropriate measures to eradicate manual scavenging in a phased manner.
  - The court emphasized the need for strict enforcement of laws, rehabilitation of affected workers, and adoption of mechanized cleaning solutions to ensure the dignity and safety of sanitation workers.
- **Legal and Regulatory Framework**
  - **Employment of Manual Scavengers and its Prohibition Act, 1993:**
    - First legal framework prohibiting **manual scavenging**.
    - Focused on banning **dry latrines**, which require manual cleaning.
  - **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013**:
    - Expanded the ban to include **cleaning of sewers, septic tanks, and railway tracks**.
    - Mandated the **identification and rehabilitation** of manual scavengers through **alternative employment and financial aid**.
  - **National Action for Mechanized Sanitation Ecosystem (NAMASTE) Scheme**:
    - Launched to **replace manual cleaning** with **mechanized alternatives**.
    - Provides training and alternative employment to former manual scavengers.
    - Ensures **use of protective gear** for sanitation workers.
  - **Constitutional Provisions:**
    - **Article 14** – Ensures **equality before the law** and prohibits **discriminatory practices**.
    - **Article 17** – Abolishes **untouchability**, which is closely linked to manual scavenging.
    - **Article 21** – Guarantees the **right to life and dignity**, ensuring that no individual should be subjected to inhumane and degrading treatment.
  - **Present Status:** According to official data, **456 out of 775 districts** have declared themselves **free from manual scavenging**.

Bandicoot Robot

- **Purpose:** A robotic device designed for sewer and manhole inspection to ensure worker safety and efficient maintenance.
- **Equipped with robotic arms**, cameras, and sensors for real-time monitoring. Uses AI and machine learning for intelligent navigation and detection.
- **Functionality:** Enters confined spaces like sewers and drains. Removes blockages and collects waste for proper disposal.

Key Issues and Challenges related to Manual Scavenging

- **Humanitarian Crisis:**
  - Manual scavengers work in extremely hazardous conditions, with exposure to harmful gases such as methane, hydrogen sulfide, and ammonia.
  - Prolonged exposure causes respiratory diseases, skin infections, and even fatalities due to asphyxiation.
- **Caste-Based Discrimination:**
  - The profession is historically linked to caste-based hierarchies, with most manual scavengers belonging to the Dalit community.
  - This leads to social exclusion, economic marginalization, and intergenerational exploitation.
- **Lack of Alternative Livelihoods:**
  - Many manual scavengers have limited educational and skill-based opportunities, making it difficult for them to transition to alternative employment.
  - Government schemes for rehabilitation often face implementation delays and inadequate outreach.
- **Weak Law Enforcement**:
  - Although the 2013 Act prohibits manual scavenging, violations continue due to weak monitoring and lack of accountability.
  - In many cases, contractors and local authorities bypass the law by employing informal or contractual labor.

RANI VELU NACHIYAR

Recently, Prime Minister Narendra Modi commemorated the birth anniversary of Rani Velu Nachiyar, recognizing her bravery and contribution to India's history.

About

- **Early Life**
  - Rani Velu Nachiyar was born on January 3, 1730, to Raja Chellamuthu Vijayaragunatha Sethupathy and Rani Sakandhimuthal of the Ramnad Kingdom (modern-day Ramanathapuram in Tamil Nadu).

Ramnad Kingdom

- **Establishment:**
  - The kingdom was located in the southern part of Tamil Nadu, with Ramanathapuram as its capital.
  - It included regions like Rameswaram, Sivaganga, and parts of modern-day Madurai and Tirunelveli.
- **Rulers & Dynasties:**
  - The kingdom was ruled by the Sethupathi dynasty, a powerful line of feudal chieftains who governed on behalf of the Nayakas of Madurai.
  - The Sethupathis were known as the protectors of the Rameswaram Temple and the Sethu Samudram region.
- **Relations with Colonial Powers:**
  - The British East India Company and the French sought alliances with the Ramnad rulers due to the kingdom's strategic coastal location.
  - In the 18th century, conflicts arose between different factions within the kingdom, leading to British intervention.
- **Decline & Integration into British India:**
  - Internal disputes and British interference weakened the kingdom.
  - By 1795, the British took full control, reducing Ramnad to a zamindari under the Madras Presidency.

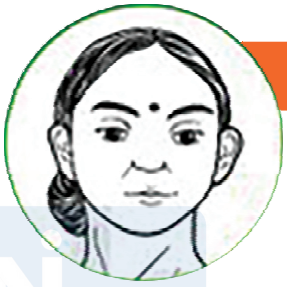
  - She was the only child of her parents and the princess of Ramanathapuram. As a royal, she was brought up with extensive training in governance, warfare, and scholarship.
  - Among Tamils, she is popularly known as "Veeramangai", meaning Brave Woman, due to her fearless fight against the British.
- **Education and Military Training**
  - Unlike most women of her time, Rani Velu Nachiyar received formal education in multiple fields, including governance, languages, and war strategy.
  - She was well-trained in **combat techniques**, including:
    - **Valari** – a traditional throwing weapon used in battle.
    - **Silambam** – an ancient Tamil martial art using bamboo sticks.
    - **Horse riding** and **archery** – essential skills for leading armies into battle.
  - **Linguistic Prowess**: She mastered several languages, including Tamil, English, French, and Urdu, which later helped her form diplomatic alliances against the British.
- **Marriage and Personal Life**
  - At the age of 16, she was married to Prince Muthuvadugananthur Udaiyathevar, the ruler of Sivaganga, a princely state in Tamil Nadu.
  - The couple had one daughter, Vellachi Nachiyar.
  - Their peaceful rule was disrupted in 1772, when the British East India Company and the Nawab of Arcot attacked Sivaganga.
  - In the battle, Muthuvadugananthur Udaiyathevar was killed, and the British forces took control of Sivaganga, forcing Velu Nachiyar to flee for safety with her daughter.
- **Exile and Preparations for Revolt**
  - After escaping the British attack, Rani Velu Nachiyar sought refuge with the Palayakaarar (local chieftain) Gopala Nayakar in Virupachi, near Dindigul.
  - She spent the next eight years in exile, planning her counterattack and gathering support.
  - She allied with Hyder Ali, the ruler of Mysore, who provided her with weapons, financial support, and trained soldiers.
  - She also formed an army of women warriors, one of the first known women-led military units in India.
- **War Against the British (1780)**
  - In 1780, Rani Velu Nachiyar launched a fierce rebellion against the British and the Nawab of Arcot.
  - **Strategic Warfare**:
    - She led the attack herself, using guerrilla warfare tactics and intelligence strategies to weaken the enemy.
    - She formed a suicide squad led by Kuyili, her trusted commander, who carried out the first recorded suicide bombing in history by setting herself on fire and destroying British ammunition stores.
  - After an intense battle, Rani Velu Nachiyar successfully reclaimed Sivaganga from British control.
- **Governance and Administration**
  - **Restored stability** in the region and ensured the British could not regain control.
  - **Appointed the Marudu Brothers** to assist in administration:
    - Vellai Marudu as the Commander-in-Chief.
    - Chinna Marudu as her Minister.
- **Legacy and Death:** She became the first queen in India to wage a war against the British for independence, nearly 75 years before the 1857 Revolt. Rani Velu Nachiyar ruled Sivaganga until her death on December 25, 1796.

THE UNSUNG FEMALE FREEDOM FIGHTERS OF INDIA

Matangini Hazra *(aka Gandhi Buri)*

- Quit India Movement
- Non-Cooperative Movement
- Shot thrice by British Indian Police in 1942 during a protest procession

Kanaklata Barua *(aka Birbala)*



- Quit India Movement
- Women Volunteers' Head in Assam
- Shot by British Police in 1942, aged 18

Aruna Asaf Ali *(aka Grand Old Lady)*

- Quit India Movement
- Part of Salt Satyagraha
- Organized political prisoners and protested through hunger strike against their ill-treatment

Bhikaji Cama

- Indian Nationalist Movement
- Fought for gender equality
- Travelled to Germany in 1907 as an Indian Ambassador to hoist the Indian National Flag

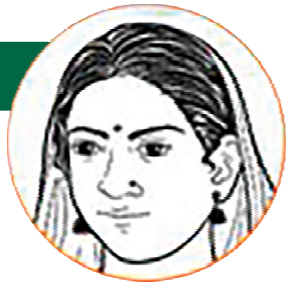
Lakshmi Sehgal *(aka Captain Lakshmi)*

- Part of Indian National Army
- In charge of establishing and leading the Rani of Jhansi Regiment, comprising of women soldiers

Kamaladevi Chattopadhyay

- Indian Independence Movement
- First Indian Patriotic Woman to be arrested by British Government
- First woman candidate in Legislative Assembly

Kittur Rani Channamma



- Rani of Kittur
- Led an Army Rebellion in 1824 against the British Policy of "Doctrine of Lapse"

Sucheta Kripalani

- Indian National Congress
- First Woman Chief Minister of Uttar Pradesh
- Founded All India Mahila Congress in 1940

358TH BIRTH ANNIVERSARY OF GURU GOBIND SINGH

Recently, the 358th birth anniversary of Guru Gobind Singh was commemorated across India on January 6.

About

- **Early Life**
  - **Birth**: **Guru Gobind Singh** was born on **22nd December 1666** in **Patna Sahib**, Bihar, as the son of **Guru Tegh Bahadur**, the **9th Sikh Guru**, and **Mata Gujri**.
  - **Succession**:
    - At the young age of **9**, Guru Gobind Singh was declared the **10th and final Guru** of the Sikhs following the martyrdom of his father, **Guru Tegh Bahadur**.
    - Guru Tegh Bahadur was martyred by the Mughal Emperor **Aurangzeb** for refusing to convert to Islam, making Guru Gobind Singh the rightful successor and leader of the Sikh community.
- **Philosophy and Contributions**
  - **Poet and Philosopher**: Guru Gobind Singh was not only a spiritual leader but also an accomplished **poet**, **philosopher**, and a significant figure in the **development of Sikhism**.
  - **Formation of Khalsa:**
    - Guru Gobind Singh is credited with **founding the Khalsa**, the **Sikh warrior community**, in **1699** during the **Baisakhi festival**.
    - The formation of the Khalsa was aimed at **combating oppression** and **promoting justice** in society.
  - **Five Ks (Kakaars)**: Guru Gobind Singh introduced the **Five Articles of Faith** known as the **Five Ks**, which every Sikh who is baptized into the Khalsa is required to uphold:
    - **Kesh:** Uncut hair, symbolizing respect for God's creation.
    - **Kangha**: A wooden comb, representing cleanliness and discipline.
    - **Kara**: An iron or steel bracelet, symbolizing eternity.
    - **Kirpan**: A ceremonial sword, symbolizing the defense of truth and justice.
    - **Kachera**: Short breeches, representing modesty and self-control.
- **Guru Granth Sahib and Hymns**
  - **Sacred Hymns**: Guru Gobind Singh contributed numerous hymns, known as **Shabad**, which are recited and sung during **Sangat** (spiritual gatherings).
    - His hymns are included in the **Guru Granth Sahib**, the central religious scripture of Sikhism.
  - **Final Declaration**: Guru Gobind Singh declared that after his death, the **Guru Granth Sahib** would be the **eternal Guru** for the Sikhs.
    - He thus ended the line of **human Gurus**, ensuring that the teachings of the Gurus would be passed on through the Holy Scriptures.
- **Creation of Panj Piare**: On Baisakhi **1699**, Guru Gobind Singh established the institution of **Panj Piare** (the Five Beloved Ones) during the foundation of the Khalsa.
  - He called for **five volunteers** to sacrifice their lives for the faith, and five men from different regions and castes responded to the call:
    - **Bhai Daya Ram** from **Lahore**.
    - **Bhai Dharam Rai** from **Hastinapur (Uttar Pradesh)**.
    - **Bhai Himmat Rai** from **Jagannath (Odisha)**.
    - **Bhai Mohkam Rai** from **Gujarat**.
    - **Bhai Sahib Chand** from **Bidar (Karnataka)**.
  - **Role in Sikh Society**: Any baptized Sikh could become a **Panj Piare**, and the decisions made by the **Panj Piare** were considered supreme in the Sikh community, including decisions made by the **Akal Takht** Jathedars (leaders of the temporal seats).
- **Veer Bal Diwas and the Sacrifice of Guru Gobind Singh's Sons**
  - **Veer Bal Diwas**: **Veer Bal Diwas** is observed annually on **26th December** to honor the bravery of **Guru Gobind Singh's youngest sons**, **Zorawar Singh** and **Fateh Singh**, who sacrificed their lives at the hands of the Mughal forces.
  - **Capture and Martyrdom**: During the siege of **Anandpur Sahib Fort** by the Mughal army in **1705**, Guru Gobind Singh's sons were captured.
    - They were **offered conversion to Islam**, but they refused to abandon their faith.
    - As a result, **Wazir Khan**, the Mughal commander, ordered them to be bricked alive.
    - Despite their young age, **Zorawar Singh** and **Fateh Singh** exhibited extraordinary courage and loyalty to their religion, choosing death over conversion.
    - Their martyrdom is remembered as a symbol of **sacrifice**, **bravery**, and unwavering faith.
- **Legacy and Contributions**
  - **Guru Gobind Singh's Enduring Influence**: Guru Gobind Singh's life and teachings continue to inspire Sikhs and people of all backgrounds. His commitment to **justice**, **equality**, and **spirituality** forms the foundation of the **Khalsa** and the Sikh way of life.
  - **Guru Granth Sahib as Eternal Guru**: Guru Gobind Singh's declaration of the **Guru Granth Sahib** as the eternal Guru marked a turning point in Sikh history, ensuring the continuity of the faith through the written word.
  - **Inspiration for Social Justice**: Guru Gobind Singh's advocacy for **equality**, **courage**, and **self-defense** continues to influence the Sikh community's role in promoting justice and fairness in society.

1 POLITY & GOVERNANCE

TRIAL IN ABSENTIA UNDER THE BHARATIYA NAGARIK SURAKSHA SANHITA, 2023 (BNSS)

Context

The Union Home Minister suggested initiating 'trial in absentia' against fugitives who have been evading justice for a long time, especially in national security cases.

About

- **BNSS introduces 'trial in absentia',** allowing trials and judgments even if the accused is not present.
- This was **not permitted under the previous Cr.P.C.**

Key Provisions:

- **Section 355**:Judges or Magistrates can proceed **without the accused** if:
  - Their presence is **not necessary for justice**, or
  - They **disrupt court proceedings**.
- **Section 356:** Courts **must** conduct trials in absentia for **proclaimed offenders** who have absconded to evade trial.
  - A **90-day waiting period** after framing charges is required before starting the trial.
  - Judgment can be **pronounced in absentia**, and the trial will continue even if the accused is later arrested or appears at the end of the proceedings.

SECTION 152 OF THE BHARATIYA NYAYA SANHITA (BNS): A POSSIBLE SEDITION LAW IN DISGUISE

Context

Experts warn that Section 152 could be misused and may function as a modern version of sedition law.

About

- Applies to individuals who, **intentionally or knowingly**, through:
  - Words (spoken or written)
  - Signs, visible images
  - Electronic communication
  - Financial means
  - Other methods
- **Punishes those who:**
  - Incite or attempt to incite secession, armed rebellion, or subversive activities.
  - Encourage separatist sentiments or threaten India's sovereignty, unity, or integrity.
- **Punishment:**
  - Life imprisonment, or
  - Up to seven years in prison, along with a fine.

Key Concerns:

- **Vague and Open to Misuse:**Terms like "endangering sovereignty, unity, and integrity" are **not clearly defined**, leaving room for **misinterpretation and misuse**.
  - Authorities could use it to **target critics of political or historical figures**.
- **Low Threshold for Offense:**The use of **"knowingly"** makes it **easier to accuse** individuals, especially on social media.
  - Even **sharing a post** without bad intentions could lead to legal action if deemed provocative.

Recommendations:

- **Judicial Oversight:**Courts have emphasized evaluating the **actual impact** of speech rather than just its content.
  - Landmark cases like **Balwant Singh v. Punjab** and **Kedar Nath Singh v. Bihar** stress the need for a **direct link** between speech and actual harm.
- **Safeguarding Free Speech:**
  - Encouraging a **"marketplace of ideas"** where people can express opinions **without fear of prosecution**.
  - Protecting **freedom of expression**, especially in the **social media era**, is crucial for democracy.

SECTION 479 OF BNSS

Context

The MHA has urged all states and Union Territories to implement Section 479 of the Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS) to provide relief to undertrial prisoners.

Key Provisions of Section 479 of BNSS

- **One-half Detention:** Undertrial prisoners (UTPs) who have completed half of the maximum sentence for their offence (excluding offences punishable with death or life imprisonment) must be released on bail by the court.
- **One-third Detention (First-Time Offenders):** First-time offenders who have served one-third of the maximum sentence should be released on bond by the court.

- **Responsibilities of Prison Authorities:** Section 479(3) mandates prison superintendents to file applications in the concerned courts for eligible prisoners to secure their release on bail or bond.

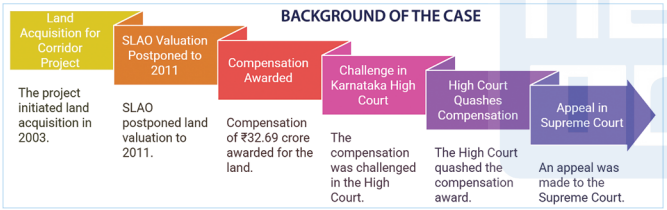
NO ONE CAN BE DEPRIVED OF PROPERTY WITHOUT ADEQUATE COMPENSATION: SC

Context

In the verdict against the Karnataka HC order, SC held that landowners cannot be deprived of property without fair compensation under Article 300-A. The case involved the Bengaluru-Mysuru Corridor Project (2003), where compensation was delayed.

Key Highlights of the Judgment

- **Right to Property as a Constitutional and Human Right:** The Supreme Court reaffirmed that while the Right to Property is no longer a Fundamental Right (post the 44th Constitutional Amendment, 1978), it remains a **constitutional right under Article 300-A** and a **human right in a welfare state.**
  - No person can be deprived of their property **without legal authority and without adequate compensation**.



- **High Court's Approach**: SC upheld HC's ruling that SLAO **cannot shift valuation date**, only SC (Articles **32/142**) or HC (**Article 226**) can. Criticized HC for not using its powers to ensure justice.
- **Fair Market Value**: Compensation **based on 2003 rates is unjust** (violates **Article 300-A**). In cases of **long delays**, the valuation date can be updated.
- Using **Article 142,** to ensure complete justice, SC shifted valuation date to April 22, 2019, directed SLAO to reassess compensation based on 2019 market value. Landowners are entitled to all benefits under the 1894 Land Acquisition Act.

BLOOD MONEY

Context

In 2019, Arjunan Athimuthu from Thanjavur, sentenced to death in Kuwait, had his sentence commuted to life imprisonment after his family paid ₹30 lakh as blood money.

About

- **Blood money (diya)** is a concept in **Islamic Sharia law**, requiring the offender to **compensate the victim's family** financially in case of death.
- **India's legal system does not recognize blood money**, but allows **plea bargaining**, enabling the accused to negotiate with the prosecution.

Plea Bargaining

- A process where a **defendant pleads guilty** in exchange for **concessions** like reduced sentences or lesser charges.
- **Objective**: Expedites case resolution, saving **time, resources, and expenses**.
- **India's legal framework:** Governed by the Bharatiya Nagarik Suraksha Sanhita (BNSS), applicable to offenses punishable by up to seven years of imprisonment.

DRAFT DIGITAL PERSONAL DATA PROTECTION RULES, 2025

Context

The government released the draft of Digital Personal Data Protection Rules, 2025 for public consultations. Once notified, the Rules will enable the effective implementation of the Digital Personal Data Protection Act, 2023 (DPDP Act).

Key Highlights of the Draft Rules

- **Data Fiduciaries:** All major tech companies including Meta, Google, Apple, Microsoft, and Amazon are expected to be classified as significant **data fiduciaries.**
  - Data Fiduciaries refer to entities (such as companies, organizations, or governments) that collect, store, process, or manage personal data and are legally or ethically obligated to act in the best interests of the individuals whose data they handle.
- **Data Protection Officer:** It is the person authorised by the Data Fiduciary to respond to any communication from the Data Principal for the purpose of exercise. "Data Principal" means the individual to whom the personal data relates.
  - The officer should be based in India;
  - be an individual responsible to the Board of Directors or similar governing body of the Significant Data Fiduciary.
- **Transparency:** Data Fiduciaries must provide clear and accessible information about how personal data is processed, enabling informed consent.
- **Restriction on flow of Data:** The Union Government will specify the kind of personal data which can be processed by "significant data fiduciaries".

- It is subject to the restriction that such personal data is not transferred outside the territory of India.

- **Rights to Citizens:** Citizens are empowered with rights to demand data erasure, appoint digital nominees, and access user-friendly mechanisms to manage their data.
- **For Children:** It allows tech companies to implement a mechanism for collecting "verifiable" parental consent before processing personal data of children.
- **Data Protection Board:** The Board will function as a digital office, with a digital platform and app to enable citizens to approach it digitally and to have their complaints adjudicated.
- **Data Breach:** In the event of a data breach, data fiduciaries will have to intimate impacted individuals without delay, including the measures implemented to mitigate risk.
  - The penalty for not being able to take enough safeguards for preventing a data breach could go as high as Rs 250 crore.

Digital Personal Data Protection Act, 2023

- **Background:** In 2017, the Ministry of Electronics and Information Technology (MeitY) established the **Justice B.N. Srikrishna Committee** to develop a data protection framework for India.
  - The first draft of the Data Protection Bill came out in 2018.
  - After various rounds of amendment in 2019 and 2021, the bill was replaced with the Digital Personal Data Protection Bill, 2022.
- **Scope:** It applies to the processing of digital personal data within India where such data is collected online, or collected offline and is digitised.
  - It also applies to such processing outside India, if it is for offering goods or services in India.
- **Consent:** Personal data may be processed only for a lawful purpose upon consent of an individual.
  - Consent may not be required for specified legitimate uses such as voluntary sharing of data by the individual or processing by the State for permits, licenses, benefits, and services.
- **Obligations for Data fiduciaries:** To maintain the accuracy of data, keep data secure, and delete data once its purpose has been met.
- **Rights to Individuals:** The right to obtain information, seek correction and erasure, and grievance redressal.
- **Exemptions:** Government agencies can be exempted in the interest of specified grounds such as security of the state, public order, and prevention of offences.
- **Data Protection Board:** To adjudicate on non-compliance with the provisions of the Act. The Data Protection Board (DPB) has **civil court powers for personal data breach complaints.**
  - Board members will be appointed for two years and will be eligible for re-appointment.
  - The central government will prescribe details such as the number of members of the Board and the selection process.

SC DECLARES DOMICILE-BASED PG MEDICAL ADMISSIONS UNCONSTITUTIONAL

Context

In the case "Tanvi Behl v. Shrey Goel & Others, 2025," the Supreme Court ruled that domicile-based reservations for PG medical admissions are unconstitutional.

About

- The **Supreme Court's decision** was based on appeals challenging a Punjab and Haryana High Court ruling, which had **already struck down domicile-based PG admission reservations**.
- **Domicile Quota:** A system where states reserve PG medical seats for local residents.
  - **PG medical admissions:**
    - **50% of seats** filled through **centralized counseling** by the Centre.
    - The **remaining 50% seats is managed** by states, which often **set aside a quota for domicile candidates.**

SC's Ruling on Domicile-Based Reservation:

- **Violates Article 14 (Right to Equality):** Creates **unfair discrimination** based on state residency.
- **Merit-Based Admission:** PG admissions must be based on NEET scores, even for state quota seats.
- **No Impact on Past Admissions:** The ruling **won't affect previously admitted students** under domicile quotas.
- **Domicile vs. Residence:**
  - "Domicile" refers to **legal permanent residence**, not just where someone currently lives.
  - India has a single domicile system—'Domicile of India'—and state-specific domiciles are not legally valid.

AD HOC JUDGES IN HIGH COURT

Context

High Courts can bring back retired judges if faced with 20% staff shortage, rules Supreme Court.

About:

- **Article 224A** of the Constitution allows the **Chief Justice of a High Court** to request retired HC judges to perform the duties of a judge again, with the permission of the President of India.
  - Such appointees are entitled to allowances as determined by the President's order and have the jurisdiction, powers, and privileges of a Judge of that High Court.
- Both the retired judge and the President of India are required to consent to the appointment.

- The Detailed Procedure Can be found In the **1998 Memorandum of Procedure (MOP)** for the appointment of **High Court judges.**

SC's Latest Judgement:

- SC **relaxed the 20% vacancy condition**, allowing **ad hoc judges even if vacancies are lower**.
- Each **HC can appoint 2 to 5 ad hoc judges**, but their number cannot exceed 10% of the sanctioned strength.
- **Ad hoc judges must sit with a regular sitting judge** of the HC.
- Their primary role is to **decide pending criminal appeals**.
- The **Memorandum of Procedure (MoP)** for appointments under **Article 224A** will be followed.
- The SC **put on hold** its previous directions (April 2021) regarding the **20% vacancy requirement**.

DIFFRENT TYPES OF JUDGES

Category	Conditions for Appointment	Authority Responsible	Privileges & Powers
Acting Chief Justice	➲ When the office of Chief Justice of India (CJI) is vacant ➲ When the CJI is temporarily absent ➲ When the CJI is unable to perform duties	➲ President of India	➲ Same powers and jurisdiction as the Chief Justice of India
Ad Hoc Judge (Supreme Court)	➲ When there is a lack of quorum of permanent judges to hold or continue a session of the Supreme Court ➲ Must be a High Court judge qualified for appointment as an SC judge ➲ Appointment is temporary	➲ Chief Justice of India (CJI) after consultation with the Chief Justice of the concerned High Court and with the President's consent	➲ Enjoys all jurisdictions, powers, and privileges of an SC judge
Retired Judges (Supreme Court)	➲ A retired SC or HC judge (qualified for SC appointment) can be requested to act as an SC judge temporarily ➲ Requires consent of the President and the judge to be appointed	➲ Chief Justice of India (CJI) with the President's consent	➲ Enjoys all jurisdictions, powers, and privileges of an SC judge ➲ Entitled to allowances determined by the President ➲ Not considered a permanent SC judge
Additional Judges (High Court)	➲ Appointed when there is a temporary increase in the workload of a High Court or when there is a backlog of cases ➲ Appointment is for a maximum period of two years	➲ President of India after consultation with the Chief Justice of India	➲ Enjoys the same powers, jurisdiction, and privileges as a permanent High Court judge during tenure but is not a permanent judge

STATE PUBLIC SERVICE COMMISSION (SPSC)

Context

Recently, the Vice President addressed the 25th National Conference of Chairpersons of State Public Service Commissions (SPSC).

About SPSC:

- **Role and Function:** Conducts examinations for appointments to state services.
  - Advises on recruitment, promotions, transfers, and disciplinary actions in state public services.
- **Constitutional Provisions:** SPSCs are governed by **Articles 315-323 under Part XIV** of the Indian Constitution.
  - These provisions outline the structure, powers, and functions of Public Service Commissions for the Union and States.
- **Appointment of Chairperson and Members:** Appointing Authority is the Governor of the State **(Article 316)**
  - The Chairperson serves a term of **6 years or until they reach the age of 62 years**, whichever is earlier.
- **Removal from Office:** The Chairperson can be removed by the President of India on the following grounds:
  - Adjudged Insolvent, engages in employment outside their official duties, Mentally unsound and in case of proved misbehaviour.

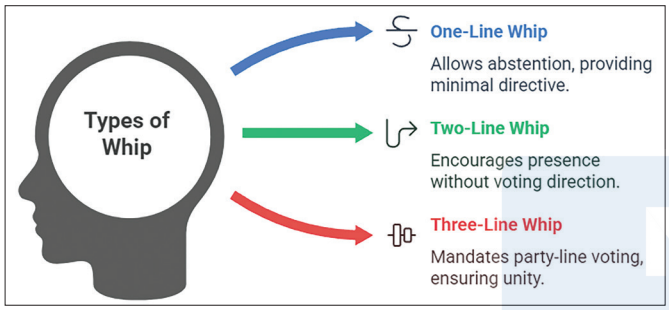
WHIP SYSTEM

Context

Vice President Jagdeep Dhankhar's recent statement that party whips curtail an MP's freedom of expression by enforcing a party line has sparked a debate.

About:

- A whip refers to an order **to members of a party in the House** to abide by a certain direction of the party.
- Political parties issue whips to their MPs to either vote for or against the bill, depending on their party line. Once the whip is issued, the MPs from each party will **necessarily have to obey the whip** or else risk losing their seat in Parliament.
- The term is derived from the old **British practice of "whipping in"** lawmakers to follow the party line.
- **It is not mentioned in the constitution** but is considered a parliamentary convention.
- Parties appoint a senior member from among their House contingents to issue whips — this member is called a **chief whip,** and he/ she is assisted by **additional whips.**



- **Importance of a whip:**
  - The whip maintains discipline, secure attendance of, and gives necessary information to, members of the party.
  - It is a **channel of communication** between the political party and the members of the party in the legislature.
  - They also serve the **function of gauging the opinion** of the members, and communicating it to party leaders.

SC CRITICIZES DELAY IN APPOINTMENT OF INFORMATION COMMISSIONERS

Context

The Supreme Court criticized the Centre and States for the delay in appointing Information Commissioners, highlighting the importance of upholding citizens' rights under the Right to Information (RTI) Act.

SC's Observations:

- The **Supreme Court** noted that the **Central Information Commission (CIC)** currently has **eight vacant positions** for Information Commissioners.
- Several **State Information Commissions (SICs)** have remained **non-functional since 2020**.
- **The Court questioned the purpose of these institutions, stating:** "An institution has been established, but what is its purpose if there are no individuals to fulfil the duties mandated by law?"

COMPARISON: CENTRAL INFORMATION COMMISSION (CIC) VS. STATE INFORMATION COMMISSIONS (SICS)

Aspect	Central Information Commission (CIC)	State Information Commissions (SIC)
Legal Basis	Established under the RTI Act, 2005	Established under the RTI Act, 2005
Composition	Chief Information Commissioner + up to 10 Information Commissioners	Chief Information Commissioner + up to 10 State Information Commissioners
Appointment	Appointed by the President on the recommendation of a selection committee (PM, Leader of Opposition in Lok Sabha, Union Minister nominated by PM)	Appointed by the Governor on the recommendation of a selection committee (CM, Leader of Opposition in State Legislature, State Minister nominated by CM)
Qualifications	Eminent persons with expertise in law, governance, science, etc., with no political affiliations	Same as CIC—Eminent persons with expertise, without political ties
Tenure	3 years or until 65 years of age, whichever is earlier; no reappointment allowed	3 years or until 65 years of age, whichever is earlier; no reappointment allowed
Removal	By the President for insolvency, moral turpitude, incapacity, or misconduct, following a Supreme Court inquiry.	By the Governor for similar reasons, following a Supreme Court inquiry if necessary
Functions	Handles RTI appeals and complaints for Central Government entities, ensuring transparency	Handles RTI appeals and complaints for State Government entities, ensuring transparency
Powers	Has civil court powers, can issue orders, impose penalties, and ensure RTI Act compliance	Has similar powers as CIC, including issuing orders, penalties, and enforcing compliance

NATIONAL GEOSPATIAL KNOWLEDGE-BASED LAND SURVEY OF URBAN HABITATIONS

Context

Recently, the Government launched a pilot project, the National Geospatial Knowledge-based Land Survey of Urban Habitations (NAKSHA).

Background:

- As per the 2023-24 Economic Survey, nearly 40% of India's population is expected to be living in urban areas by 2030.
- Streamlining land and property record systems is essential for the planned development of cities.
- Only a few states such as Karnataka, Maharashtra and Gujarat have a system of urban land record management in place.

About NAKSHA:

- It was announced in the **2024-25 Budget.**
- **Aim:** To standardise record-keeping, simplify processes and bring transparency in land transactions.
- **Features:**
  - Creating updated digitised land records in 150 cities across the country in the next year.
  - To link each land parcel with details about the owner of the land and the type of development on it.
  - Cover the entire urban area in the country within a period of 5 years.
- **Other Initiatives:** There has been the successful implementation of two crucial Central government schemes — the Digital India Land Records Modernization Programme (DILRMP) and the Survey of Villages and Mapping with Improvised Technology in Village Areas (SVAMITVA) scheme.
  - These schemes aimed to modernise land records in rural areas for agricultural land parcels and residential areas.

Need for Digitization of Land Records

- It will transform land management by addressing traditional challenges like disputes, fraud, and inefficient manual processes.
- **Ownership information** will be **easily accessible** online, enhancing transparency and reducing illegal encroachments.
- It **simplifies dispute resolution,** easing court burdens, and empowering marginalized communities by improving access to land rights.
- Integration with geospatial mapping **enhances land management,** enabling accurate surveys and planning.
- **During land acquisitions or disasters,** digital records ensure fair and timely **compensation**.

Achievements under DILRMP

- It was restructured as a Central Sector Scheme in 2016 to establish a modern and transparent land records management system.
- **Achievements:**
  - **Around 95%** of land records have been computerized.
  - Digitization of cadastral maps has reached 68.02% at national level.
  - 87% of Sub-Registrar Offices (SROs) have been integrated with land records.

NATIONAL BROADBAND MISSION 2.0

Context

The Department of Telecommunications launched the vision document for the National Broadband Mission (NBM) 2.0.It aims to build upon the foundation laid by NBM 1.0 (2019-2024).

Broadband Connectivity in India

- In **2023**, India had **83.22 crore** broadband connections, with 79.98 crore being wireless and 3.23 crore being wireline.
- India witnessed a **200% increase** in internet subscriptions in **rural areas** and a **158% increase** in **urban areas** between **2015 and 2021.**
- The **NBM 1.0** accelerated growth in digital infrastructure, especially in rural areas, bridging the digital divide.

Broadband Connection Types

- **Wired broadband:** Broadband delivered through optical fiber cables.
- **Wireless broadband:** Broadband delivered through radio links.
- **Digital Subscriber Line (DSL):** Broadband delivered through copper lines.

NBM 2.0: Vision and Objectives

- The new phase of the National Broadband Mission builds on NBM 1.0 and sets ambitious goals for 2030 to ensure affordable and reliable broadband access across India.
- **Key Objectives:**
  - **Expand Optical Fiber Connectivity:** Extend Optical Fiber Cable (OFC) to 2.70 lakh villages by 2030, from around 50,000 villages currently.
    - Maintain 95% uptime for OFC networks.
  - **Anchor Institution Connectivity:** Provide broadband to 90% of anchor institutions such as schools, PHCs, Anganwadi Centers, and Panchayat offices.
  - **Enhanced Broadband Speeds:** Increase the national average fixed broadband download speed to a minimum of 100 Mbps by 2030.

- **5G Rollout and 6G Preparedness:** Facilitate the nationwide rollout of 5G networks while laying the groundwork for future 6G technologies.
- **Leverage Power Sector Infrastructure:** Utilize Optical Ground Wire (OPGW) from the power sector to boost connectivity, particularly for critical situations like disasters, wars, and emergencies.

ENTITY LOCKER

Context

The National eGovernance Division (NeGD), under the Ministry of Electronics and Information Technology (MeitY) has developed Entity Locker.

About

- Entity Locker is a secure, cloud-based digital platform designed to streamline the storage, sharing, and verification of business documents for a wide range of organizations in India.

Key Features

- **Target Entities:** Large corporations, MSMEs, startups, trusts, societies, and other organizations.
  - Aligns with India's Digital Public Infrastructure initiative and the Union Budget 2024-25 vision for enhanced digital governance.
- **Secure Digital Infrastructure:** 10 GB encrypted cloud storage for safe document storage.
  - Legally valid digital signatures for authentication.
  - Aadhaar-authenticated, role-based access management for secure and accountable access.
- **Integration Capabilities:** Real-time access and verification via integration with government databases.
- **Seamless connectivity with systems like:**
  - Ministry of Corporate Affairs (MCA)
  - Goods and Services Tax Network (GSTN)
  - Directorate General of Foreign Trade (DGFT)
- **Consent-based Sharing:** Ensures secure sharing of sensitive business information.

Benefits

- **Operational Efficiency:** Reduces administrative overhead and document processing times.
  - Streamlines document sharing and compliance processes.
  - Tracks all document-related activities for enhanced accountability.
- **Enhanced Integration:** Direct integration with government platforms enables efficient compliance and reporting.
- **Strategic impact:** Entity Locker is part of India's Digital Public Infrastructure and aligns with the Digital India Programme, reflecting MeitY's commitment to leveraging technology for improving governance and fostering economic growth.

CROSSPATHY

Context

The Maharashtra Food & Drugs Administration recently authorized homeopathic practitioners who have completed a certificate course in modern pharmacology to prescribe allopathic medications.

About

- Crosspathy refers to the practice of healthcare professionals prescribing treatments or practicing medicine outside their designated field of expertise.
- This is most commonly seen when practitioners of alternative medicine systems, such as Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy (AYUSH), provide treatments typically administered by allopathic (modern medicine) doctors.

Reasons for Promoting Crosspathy

- **Shortage of Specialists:** Rural areas face an 80% shortage of medical specialists, prompting the government to encourage AYUSH practitioners to help bridge the gap.
- **Expanding Healthcare Access:** India has over 13 lakh allopathic doctors and 5.5 lakh AYUSH practitioners. Crosspathy is seen as a way to improve affordable healthcare access, especially in remote areas.
- **Rural Healthcare Challenges:** Poor working conditions and low salaries deter MBBS doctors from serving in rural regions, increasing reliance on AYUSH professionals.

Concerns and Issues with Crosspathy

- **Legal Constraints:** The National Medical Commission Act of 2019 prohibits AYUSH practitioners from practicing allopathy. Maharashtra's recent decision contradicts national policies.
- **Patient Safety Risks:** The Indian Medical Association (IMA) warns that allowing unqualified practitioners to prescribe modern medicine could lead to negligence and malpractice, endangering patient safety.
- **Undermining Medical Integrity:** Crosspathy is seen as devaluing specialized medical qualifications and training.
- **Quality of Care:** Since AYUSH practitioners are not adequately trained in modern medicine, there are concerns that patient care may be compromised.

Supreme Court's Stand

- In the **1996 case of Poonam Verma vs. Ashwin Patel**, the Supreme Court of India held a homeopath guilty of negligence for prescribing allopathic medicines, which resulted in a patient's death.
- The Court ruled that practicing outside one's medical expertise constitutes medical negligence. However, later rulings clarified that crosspathy is permissible only if explicitly allowed by the respective State Government.

10 YEARS OF BETI BACHAO, BETI PADHAO (BBBP) AND SUKANYA SAMRIDDHI YOJANA

Context

India celebrates 10 years of BBBP and SSY, highlighting efforts to empower girls, promote gender equality, and improve the Child Sex Ratio.

About

- **Genesis:** Launched on **22nd January 2015** in **Haryana**, in response to the **dismal CSR** of **918 girls per 1,000 boys** (2011 Census) caused by societal norms favoring male children.
- **Objectives:** Improve the **Child Sex Ratio (CSR)**.
  - Promote **gender equality** and **women empowerment**.
  - Prevent **gender-biased, sex-selective elimination**.
  - Ensure **survival and protection** of the girl child.
  - Encourage the **education and participation** of girls.
- **Implementation:** Executed by states with **100% Central Assistance**.
  - No provision for **Direct Benefit Transfer (DBT)**.
- **Ministries Involved:** Women and Child Development
  - Health and Family Welfare.
  - **Education** (formerly Human Resource Development).

Sukanya Samriddhi Yojana (SSY)

- **Launched as Part of BBBP:** Aimed at securing the financial future of girl children by encouraging families to invest in their education and welfare through **tax-saving, high-return savings accounts**.
- **Eligibility:** Families with a **girl child below 10 years**.
  - A **Sukanya Samriddhi Account (SSA)** must be opened in the girl's name.
  - Only **resident Indians** are eligible; **Non-Resident Indians (NRIs)** are excluded.

Achievements Over the Decade

- **Improved Child Sex Ratio (CSR): Awareness campaigns** and the enforcement of the **Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act, 1994** helped increase CSR.
  - CSR at birth rose from **918 (2014-15)** to **933 (2022-23)**.
- **Increased Female Enrollment in Schools:** Free and subsidized education, improved infrastructure (e.g., toilets under the **Swachh Bharat Mission**), and scholarships like SSY reduced dropout rates.
  - Programs like **Kasturba Gandhi Balika Vidyalayas** significantly boosted enrollment in **primary and secondary schools**.
- **Women Entrepreneurs and Policy Synergy:** The **Women's Welfare Budget** grew over **200%**, from ₹0.97 lakh crore (FY 2014) to ₹3.10 lakh crore (FY 2025).
  - **2.3 crore MSMEs** are now led by women.
  - Under **PM Mudra Yojana**, **70% of loans** are availed by women.
  - Initiatives like **Jan Dhan Yojana** (banking access for 30 crore women) and **Lakhpati Didi** (helping 1 crore women earn ₹1 lakh+ annually) empowered women economically.
- **Empowering Women Through Awareness:** Campaigns like **Selfie with Daughter** and **National Girl Child Day** inspired participation from all sections of society.
  - **Panchayati Raj institutions** and grassroots organizations celebrated the **birth of girl children** and trained workers to combat gender stereotypes.

PROSPECTS FOR CHILDREN IN 2025: BUILDING RESILIENT SYSTEMS FOR CHILDREN'S FUTURES

Context

The latest report, Prospects for Children 2025: Building Resilient Systems for Children's Futures, by the UN Children's Fund (UNICEF) has warned that the world is entering a new era of crisis for children.

Key Highlights of the Report

- **Doubling of Children Living in Conflict Zones:** Over **473 million children**—more than one in six globally—are currently residing in areas affected by conflict.
  - The proportion of children living in conflict zones has surged from **10%** in **the 1990s to nearly 19% today,** with the world witnessing the highest number of conflicts since World War II.
- **Debt Crisis Hurting Children's Futures:** Nearly **400 million** children live in countries burdened by debt, a figure projected to rise without urgent fiscal reforms.
- **Climate Crisis and Its Consequences:** Only 2.4% of multilateral climate finance is allocated to child-responsive initiatives.
  - Children are disproportionately affected by climate-related events, from food insecurity to displacement caused by natural disasters.
- **Unequal Access to Technology:** While internet access is nearly universal in high-income countries, only **53% of youth aged 15-24 are online in Africa.**
  - **Adolescent girls and children with disabilities** face the greatest exclusion, with **90%** of young women in low-income countries remaining offline.

10 YEARS OF UJALA SCHEME

Context

The Unnat Jyoti by Affordable LEDs for All (UJALA) scheme launched on 5th January 2015 marked its 10th anniversary as a groundbreaking initiative in energy efficiency.

About:

- **Launched:** It was launched as the Domestic Efficient Lighting Programme (DELP) and later rebranded as UJALA to revolutionize household lighting by providing affordable energy-efficient LED bulbs, tube lights, and fans to millions of Indian homes.
- **Implementing Agencies:** It is a joint effort by Energy Efficiency Services Limited (EESL) and DISCOMs under the Ministry of Power.
- **Implementation Model:** EESL handled initial costs, with repayments made through monthly or quarterly annuities by municipalities.
- **Impact on Public Services:** Ensured over 95% uptime for LED streetlights, enhancing public safety and reliable municipal services.

Street Lighting National Programme (SLNP)

- **Launched in 2015** to promote **energy efficiency** in India.
- **Implemented by EESL**, which replaces **conventional streetlights with LEDs**.
- Funding Model
- **EESL** bears the upfront cost, with no initial investment required from municipalities.
- **Expected Impact:**
  - Peak demand reduction of 500 MW.
  - Annual energy savings of 190 crore kWh.
  - Reduction of 15 lakh tons of CO_2 emissions.

Energy Efficiency Services Limited (EESL)

- **Establishment and Ownership:** Promoted by the Ministry of Power, Government of India. A Joint Venture of NTPC Limited, Power Finance Corporation Limited, REC Limited, and POWERGRID Corporation of India Limited.
  - Registered under the Companies Act, 1956 on 10th December 2009.
- **Objectives and Role:** Created to develop and sustain market access for energy-efficient technologies.
  - Focuses on public facilities like municipalities, buildings, agriculture, and industry.
  - Implements schemes of Bureau of Energy Efficiency (BEE), Ministry of Power, and Ministry of New & Renewable Energy.
- **Key Initiatives:** Leads market-related activities under the National Mission for Enhanced Energy Efficiency (NMEEE).

BHARATPOL PORTAL

Context

The Union Home Minister inaugurated the BHARATPOL portal developed by the Central Bureau of Investigation (CBI) in New Delhi.

About:

- BHARATPOL, or **Broadcast Hub for Assistance and Real-Time Action against Transnational Crimes,** is a technological platform created to facilitate real-time coordination between central and state agencies and the International Criminal Police Organization (INTERPOL).
- It is designed to speed up investigations and improve crime control measures by providing a structured and secure interface for data sharing.

About Interpol

- **Interpol** is an intergovernmental organization, which stands for International Criminal Police Organization.
- **Background:** It was founded in **1923** at the International Police Congress in Vienna as the **International Criminal Police Commission (ICPC).**
  - In 1956, the ICPC adopted the name Interpol.
- **Members:** It has **196 member** countries, including **India.**
- **Headquarters:** Lyon, France
- **Mandate:** It connects police around the world – both technically and in person. It is the world's largest and only organization with the mandate and technical infrastructure to share police information globally.
- **National Central Bureau (NCB):** In each country, an Interpol NCB provides the central point of contact for the General Secretariat and other NCBs.

India's Record:

- **India joined** the Interpol in **1949.**
- **The CBI (Central Bureau of Investigation)** is the National Central Bureau for Interpol in India and coordinates all international police cooperation requirements of Indian law enforcement agencies via Interpol channels.

Key Modules

- **Connect:** This module allows all Indian law enforcement agencies to function as an extension of INTERPOL's National Central Bureau (NCB-New Delhi).
  - It ensures quick and secure transmission of investigation requests and data.
- **INTERPOL Notices:** The portal enables faster issuance and management of INTERPOL notices, such as Red Corner Notices, for locating criminals both domestically and globally.
- **References:** It provides access to data and references from INTERPOL's 195 member countries, simplifying the process of seeking and offering international assistance.
- **Broadcast:** This module facilitates immediate sharing of crime-related information and alerts with international agencies.
- **Resources:** Designed for capacity-building, this module supports document exchange and management for effective crime control operations.

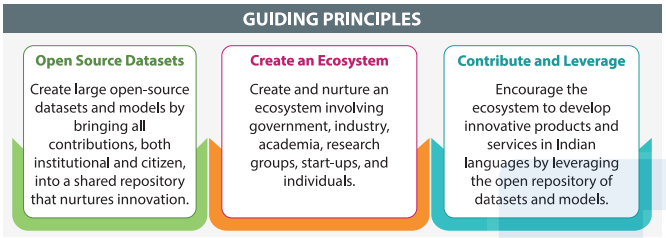
BHASHINI PROJECT

Context

The Ministry of Electronics and Information Technology's Bhashini project has been leveraged to upgrade the eShram portal with 22 languages.

About:

- It was launched in 2022. It is part of the broader **National Language Translation Mission (NLTM).**
- It aims to enable easy access to the internet and digital services in Indian languages, including voice-based access, and help create content in Indian languages.



Significance

- It empowers Indian citizens by connecting them to digital initiatives in their own language, promoting digital inclusion.
- It increases the content in Indian languages on the internet, especially in governance, policy, and science.
- It promotes self-reliance (Atmanirbhar) by enabling citizens to easily contribute through the crowd-sourcing platform, Bhasha Daan.

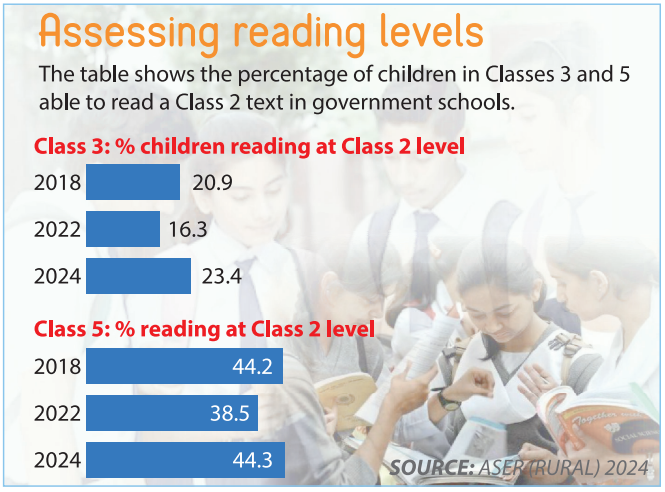
ANNUAL STATUS OF EDUCATION REPORT (ASER) 2024

Context

The Annual Status of Education Report (ASER) 2024 revealed that enrolment in both government and private schools has returned to pre-pandemic levels.

About

- The word **ASER** means 'impact' in **Hindustani**.
- It is a nationwide citizen-led household survey that provides a snapshot of children's schooling and learning in rural India.
  - It captures data from all children, including those who are not in school or are absent.
- It tracks children **aged 3 to 16 for schooling status**, and children aged **5 to 16** are tested for **basic reading and arithmetic abilities.**
- The survey is coordinated by ASER Centre and facilitated by the Pratham network.
- The first ASER survey was conducted in 2005 and repeated annually for 10 years (2005-2014).



Key Findings: Recent Survey

- **Improvement in Learning:** The proportion of Class 3 students in government schools able to read a Class 2 text rose to 23.4% in 2024, up from 16.3% in 2022.
  - Basic arithmetic skills also improved across both government and private schools.
  - For Class 3, two-thirds could not solve subtraction problems, and only 30.7% of Class 5 students could solve division problems. Class 8 students saw slight improvement, with 45.8% mastering basic arithmetic.
- **Regional Variations:** States like Uttar Pradesh, Bihar, Haryana, and Odisha saw notable gains in reading levels. Uttar Pradesh had the largest increase, with a 15-percentage-point rise in reading skills.
- **Government vs Private Schools:** Learning recovery has been stronger in government schools, while private schools still lag behind their pre-pandemic levels. Despite improvements, 30% of children still struggle with reading a Class 2 text.
- **Enrolment Trends:** School enrolment for children aged 6-14 is at 98.1%, close to pre-pandemic levels. However, government school enrolment, which rose during the pandemic, has dropped to 66.8% in 2024 from 72.9% in 2022.
  - The proportion of underage children in Class 1 also declined to 16.7%, the lowest ever recorded.
- **Digital Literacy:** Smartphone access has increased significantly in rural areas, with 84% of households owning smartphones in 2024.
  - Among teenagers, 57% use smartphones for educational purposes, but 76% use them for social media. There is a gender gap in smartphone use, with more boys reporting smartphone use and ownership than girls.
- **Factors Driving Learning Trends:** The report credits the National Education Policy (NEP) 2020 and the Nipun Bharat Mission for improvements in foundational literacy. Digital tools, especially smartphones, have played a key role in continuing education during and after the pandemic.

2 INTERNATIONAL RELATIONS

EASING OF RESTRICTIONS ON INDIAN NUCLEAR DEAL

Context

Recently, the United States has announced the easing of restrictions on Indian nuclear entities, such as Bhabha Atomic Research Centre (BARC), Indira Gandhi Atomic Research Centre (IGCAR), and Indian Rare Earths Limited (IREL) from the US Entity list.

About

- **US Entity List** is a tool used by the **United States Department of Commerce** to restrict certain foreign entities from accessing US-origin goods, services, and technology.

Historical Background

- The bilateral **'Agreement for Co-operation between India & US concerning Peaceful Uses of Nuclear Energy'** has been done under **Section 123 of US Atomic Energy Act 1954.**
  - Hence, it is also **popularly known as the 123 Agreement.**
- The Agreement aims **to end technology denial regimes against India** that have been in place for three decades and end India's nuclear isolation.
- It opened the doors for India to **have civil nuclear cooperation** as an equal partner with the USA and the rest of the world.

Indo-US Nuclear Deal (2008)

- The **Indo-US nuclear deal, signed in 2008**, was a landmark agreement that allowed India access to nuclear technology and fuel from the international market **despite not being a signatory to the Nuclear Non-Proliferation Treaty (NPT)**.
- It aimed to facilitate nuclear cooperation between the two countries, allowing India access to nuclear technology and fuel from the US and other **Nuclear Suppliers Group (NSG)** countries.
- The Agreement entails **no obligations for India** to sign the **Comprehensive Nuclear-Test-Ban Treaty (CTBT) / Fissile Material Cut-off Treaty (FMCT).**

Implications of Easing of Restrictions by the US

- **Strategic Importance**: Boosts the **India-U.S. nuclear deal**, enabling **greater scientific and technological collaboration**.
- **Energy Security**: Helps **diversify India's energy sources**, ensuring a **stable and reliable supply**.
- **Clean Energy Goals**: Supports **low-carbon nuclear energy**, aiding **India's efforts to cut greenhouse gas emissions**.
- **Technological Advancements**: Grants India **access to advanced nuclear technologies**, improving **efficiency and safety** in nuclear power plants.
- **Research & Innovation**: Encourages **nuclear science research**, benefiting both nations.

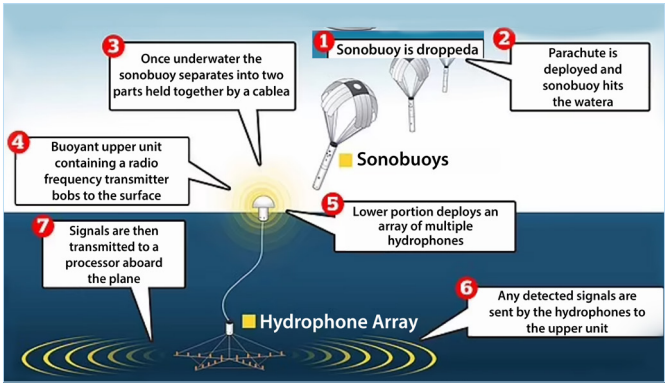
INDIA, U.S. TO JOINTLY MANUFACTURE INTEROPERABLE SONOBUOYS FOR NAVY

Context

India and the U.S. announced cooperation on co-production of U.S. sonobuoys for Undersea Domain Awareness (UDA) for the Indian Navy.

About

- The sonobuoys are small and expendable devices used in underwater acoustics and sonar systems to detect submarines and other hostile objects and to **carry out precision attacks to eliminate threats.**
- Sonobuoys are deployed from aircraft or ships and activate upon water impact.
- They have an inflatable float with a radio transmitter, which stays at the surface to maintain communication.
- It is expected to become operational by **2027**.
- The production is split across the U.S. and India, in accordance with **'Make in India' principles.**
- The sonobuoys co-produced in India are interchangeable and interoperable between U.S. Navy and Indian Navy.



Significance

- **Underwater Domain Awareness (UDA)** has become a key focus for **India and the QUAD** after **Maritime Domain Awareness**.

- India is **procuring U.S. sonobuoys with technology transfer** to strengthen **underwater threat detection**.
- The move addresses **rising Chinese presence** in the region, ensuring **maritime security**.
- **Enhanced UDA** is vital for safe and secure trade, commerce, and regional stability.

DATA EMBASSIES

Context

India is in discussions with multiple nations to establish data embassies, creating a new dimension in international relations and data sovereignty.

About

- Data embassies are secure facilities where countries can **store sovereign data** in another nation's territory while maintaining **complete control over it**. They provide:
  - **Backup and Contingency Storage:** Ensuring data availability during natural disasters or geopolitical crises.
  - **Independence in Operations**: Each data embassy independently handles data management, and access controls, while the host country ensures data security.
  - **Regulatory Flexibility:** Nations can store data abroad without being subject to local data regulations.
- India plans to set up special strategic zones to house these embassies, hosting data centers dedicated to **storing sovereign data for multiple nations**.
  - Andhra Pradesh, with its advanced data center infrastructure, is expected to host the first data embassy.
- ***Note:*** Data Sovereignty refers to the concept that data is subject to the laws and governance structures of the country where it is collected or stored. It ensures that a nation has control over data generated within its borders, preventing unauthorized access by foreign entities. This principle is crucial for data protection, national security, and regulatory compliance.

Additional Information

Estonia was the first country to establish a data embassy in Luxembourg after a 2007 cyberattack.

INDIA JOINS UN PANEL ON BIG DATA

Context

India has been included in the UN Committee of Experts on Big Data and Data Science for Official Statistics (UN-CEBD).

About:

- It was created in 2014 with Australia as the first Chair.
- It consists of 31 member states and 16 international organizations.
- A plenary meeting is held annually, usually alongside the Conference on Big Data for Official Statistics, to review and discuss activities and initiatives.

Mandate

- It provides direction for a global big data program, supporting the 2030 Agenda for Sustainable Development.
- It addresses challenges related to data quality, access, privacy, security, and analytics.
- It fosters training, experience-sharing, and collaboration.
- It promotes the use of big data for policy applications and monitoring sustainable development goals.

Importance for India

- India's involvement strengthens its influence in global statistical practices, reinforcing its commitment to data-driven progress.
- Membership allows India to align domestic advancements in big data with international goals, showcasing leadership in data science. Big data and advanced techniques like IoT, satellite imagery, and private sector data will modernize statistical processes and improve data accuracy.
- This marks a key achievement, as India recently regained membership in the **UN Statistical Council.**

United Nations Statistical Commission (UNSC)

- **Established in 1946**, it is the **highest body of the global statistical system**, comprising **Chief Statisticians from member states** worldwide.
- Serves as the **top decision-making body** for international statistical activities.
- Responsible for **setting statistical standards** and developing **concepts and methodologies** for national and international implementation.
- **Oversees the United Nations Statistics Division (UNSD)** and functions as a **commission under the UN Economic and Social Council (ECOSOC)**.

INDIA-SINGAPORE RELATIONS: A 60-YEAR JOURNEY

Context

Recently, India and Singapore celebrated 60 years of diplomatic relations, marked by Singapore's President Tharman Shanmugaratnam's first visit to India.

Significance:

- **Historical Ties:** Diplomatic ties established in 1965, with historical links dating to 1819 when Singapore became a British trading post. Singapore played a role in India's independence movement, hosting the Provisional Government of Azad Hind (1943). Leaders from both nations frequently engage in high-level visits to strengthen bilateral relations.
- **Trade & Economy:** Bilateral trade rose from $6.7B (2004-05) to $35.6B (2023-24), with Singapore as India's 6th largest trade partner.
- **FDI:** Singapore's $11.774B FDI in 2023-24 focused on Services, Telecom, and Pharma. It remains the largest source of FDI into India, accounting for nearly 23% of total inflows in recent years.
- **Fintech & Digital Economy:** First country to adopt RuPay card and UPI-PayNow linkage. This collaboration has enhanced cross-border digital payments, benefiting businesses and individuals.
- **Defense & Security:** Joint military exercises (Agni Warrior, Bold Kurukshetra, SIMBEX) and maritime security collaboration. Both nations also cooperate in counterterrorism efforts and intelligence sharing.
- **Science & Technology:** ISRO launched Singaporean satellites, with cooperation in digital health and women in science. Research collaborations in AI, space tech, and smart cities are expanding.
- **Global Alliances:** Singapore joined the International Solar Alliance & Global Bio-Fuel Alliance (2023). It actively participates in climate change initiatives and sustainable energy projects with India.
- **Indian Diaspora & Cultural Ties:** Indian diaspora forms 9% of Singapore's population, with strong cultural exchanges like Kalaa Utsavam & Little India.

INTERPOL INTRODUCES SILVER NOTICE

Context

The International Criminal Police Organisation (Interpol) has launched its first Silver Notice, an initiative aimed at tracing and recovering assets laundered across borders.This pilot project involves 52 countries, including India.

About

- **About:** The Silver Notice is the latest addition to Interpol's colour-coded alert system, designed to assist member countries in identifying, locating, and recovering criminally obtained assets.
- **These assets can include** Properties, Vehicles, Financial accounts, and Businesses.
- The notice is a crucial tool for addressing criminal activities such as Fraud, Corruption, Drug trafficking, Environmental crimes.

Working Mechanism

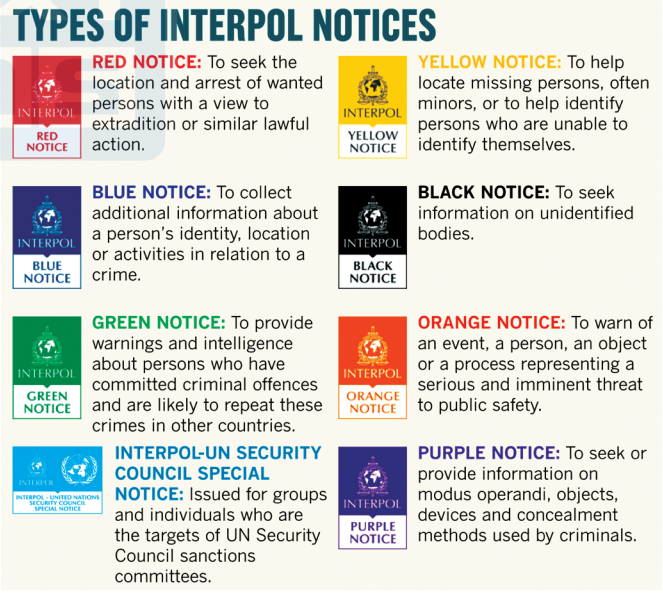
- **Requesting Information:** Member countries can request information about assets suspected of being linked to criminal activities.
- **Identification and Action:** The notice aids in locating assets, enabling further legal measures such as seizure or confiscation, in accordance with national laws.
- **General Secretariat Review:** Before issuance, the Interpol General Secretariat reviews each notice to ensure compliance with organisational rules and to prevent misuse for political purposes.

India's Role and Benefits

- India, as a participant, stands to gain significantly. India has a long-standing issue with fugitive economic offenders and unaccounted black money transferred to tax havens.
- It provides a platform to enhance India's efforts in combating financial crimes and bringing offenders to justice.

About INTERPOL Notices

- **International Information Sharing:** INTERPOL Notices are international alerts or requests for cooperation that enable police in its 195 member countries to share vital crime-related information.



- **Types:** There are eight different types of notices, each serving a specific purpose.
- **Issued By:** The Interpol General Secretariat.
- **Requested By:** Member countries' National Central Bureaus.
  - International Criminal Tribunals and the International Criminal Court.
  - The United Nations (for implementing Security Council sanctions).

3 ECONOMY

TOBACCO BOARD OF INDIA

Context

Recently, the Tobacco Board launched various strategic efforts to enhance the sustainability and development of the tobacco sector.

About

- **Climatic Conditions for Tobacco Production:**
  - **Temperature Range:** 21°C to 29°C is ideal for healthy growth.
  - **Frost-Free Period:** Requires 90-120 days without frost.
  - Humidity: Prefers moderate humidity (60-70%) for optimal leaf development.
  - **Rainfall:** Needs well-distributed rainfall to support steady growth.
  - **Sunlight:** Requires at least 6 hours of direct sunlight daily for proper leaf curing and quality.
  - ***Note:*** This crop was introduced by the **Portuguese** to India.

Tobacco Board of India

- **Establishment:** The Tobacco Board of India is a statutory body formed under the Tobacco Board Act, 1975 (Act 4 of 1975).
- **Leadership:** The Board is headed by a **Chairman** and functions under the **Ministry of Commerce and Industry**, Government of India.

- **Headquarters:** Guntur, Andhra Pradesh.
- **Nodal Ministry:** Ministry of Commerce and Industry.

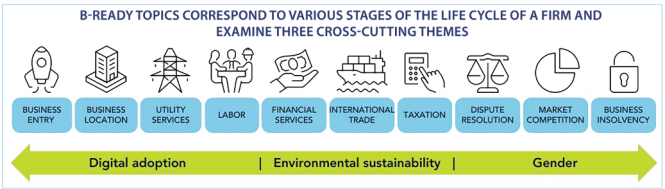
BUSINESS READY (B-READY) 2024 REPORT

Context

Recently, the World Bank introduced the Business Ready (B-READY) report 2024 as a replacement for the Ease of Doing Business report.

About

- **Objective:** The index aims to **assess the business and investment climate** worldwide and is accompanied by an **annual corporate report**.
- **Goals:**
  - Promote **private investment** and enhance **job creation**.
  - Improve **productivity** to support **inclusive and sustainable economic development**.
  - Ensure that data is **comparable across economies** and **representative within each economy**.
- **Key Focus Areas of the B-Ready Index**
  - **Reform Advocacy:** Encourages **policy reforms** by providing benchmarks and fostering dialogue among governments, businesses, and the World Bank.
  - **Policy Guidance:** Offers **tailored recommendations** for policy changes based on global best practices.
  - **Analysis and Research:** Supplies **detailed data** to support research on factors influencing private sector development.



- **Launch and Implementation:** The B-Ready initiative is a three-year project (2024–2026) by the World Bank Group, designed to assess the global business and investment climate.
- **Global Coverage:** Initially covering **50 economies** (excluding India), the index aims to expand to **180 economies by 2026** for a more comprehensive evaluation.
- **Replacement of EoDB Rankings:** The B-Ready framework replaces the World Bank's Ease of Doing Business (EoDB) rankings, which previously measured the ease of starting and operating a business but was discontinued in 2021 due to data irregularities and ethical concerns.

- **Integration with Indian Reforms:** The 2024 Business Reform Action Plan rankings by the Department for Promotion of Industry and Internal Trade (DPIIT) will incorporate select indicators from the B-Ready Index, aligning India's reforms with global standards.

PIG-BUTCHERING SCAM

Context

Recently, the Union Home Ministry's latest annual report highlighted that victims are being deceived into losing substantial amounts of money through the "pig butchering scam" or "investment scam."

About

- **Definition:** This online investment fraud involves scammers creating fake personas to lure victims into fraudulent investment schemes, often using cryptocurrency trading platforms.
- **Origin of the Term:** The name "pig butchering" comes from the scammers' strategy of building trust ("fattening the pig") before ultimately stealing the victim's money ("slaughtering the pig").
- **Methodology**
  - **Initial Contact:** The scammer (known as the "host") reaches out to potential victims through social media, dating apps, or deceptive messages.
  - **Building Trust:** They establish a false sense of friendship and persuade the target (the "pig") to explore cryptocurrency investments.
  - **Fake Profits:** Using a fraudulent trading app, they fabricate successful trades to make the victim believe they are earning profits.
  - **Encouraging Larger Investments:** As trust grows, the scammer convinces the victim to invest larger amounts, a process referred to as "fattening the pig."
  - **Final Deception:** When the victim tries to withdraw funds, the platform imposes fees, delays, or blocks access, ultimately revealing the scam.
  - **Irretrievable Funds:** Due to the irreversible nature of blockchain transactions, recovering lost money is extremely difficult.

RAMESH CHAND COMMITTEE

Context

Recently, the Indian government announced the establishment of the Ramesh Chand Committee to update the country's WPI setting a new base year of 2022-23, replacing the current base year of 2011-12.

About

- **Purpose:** The panel has been established to revise the base year of the Wholesale Price Index (WPI) from 2011-12 to 2022-23.
- **Key Mandates:**
  - Propose a revised commodity basket for WPI and the Producer Price Index (PPI) based on the base year 2022-23, considering structural changes in the economy.
  - Review and suggest improvements in the current system of price collection.
  - Decide on the computational methodology for WPI and PPI.
- **Composition:** The panel includes economists from the government, rating agencies, asset management companies, banks, as well as representatives from the Reserve Bank of India.
- **Timeline:** The final report is to be submitted to the Office of the Economic Adviser at the Department for Promotion of Industry and Internal Trade (DPIT) within 18 months.

WPI vs. PPI: Key Differences

- **Wholesale Price Index (WPI):**
  - **Definition:** WPI measures the price of goods at the wholesale stage, i.e., bulk goods traded between organizations.
  - **Coverage:** Does not account for inflation at the consumer level and excludes services, which constitute 55% of GDP.
  - **Limitations:** Includes double counting of the same product and does not include imports or exports.
- **Producer Price Index (PPI):**
  - **Definition:** PPI tracks prices from the perspective of producers, measuring price changes at different stages of production.
  - **Key Differences:** Excludes indirect taxes and reflects inflation from the perspective of industries and businesses.
  - **Coverage:** Includes both goods and services, making it a broader measure than WPI.

WPI vs. PPI: KEY DIFFERENCES

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- **Weighting System:** WPI weights items based on net traded value, while PPI uses weights derived from Supply Use Tables.
- **International Usage:** PPI has largely replaced WPI in many countries as it is conceptually aligned with the internationally accepted System of National Accounts (SNA).

DECLINE IN RURAL POVERTY: SBI RESEARCH

Context

Recently, SBI's economic research department (ERD) released a report on Rural Poverty.

Key Findings

- India's poverty rate has dropped significantly from **22% in 2011-12 to below 5% in 2023-24**, with minimal extreme poverty.
  - Rural poverty fell from 25.7% in 2011-12 to 4.86% in 2023-24, and urban poverty decreased from 4.6% in 2022-23 to 4.09% in 2023-24.
- **Threshold**: The report sets the new poverty line for FY24 at Rs 1,632 for rural areas and Rs 1,944 for urban areas, adjusted for inflation and the imputation factor.
  - **Suresh Tendulkar's poverty line** (estimated in 2011-12) was Rs 816 for rural areas and Rs 1,000 for urban areas.
- **Urban-Rural Consumption Disparity:** The gap in monthly per capita expenditure (MPCE) between rural and urban areas decreased to 70% in 2023-24 from 84% in 2011-12, reflecting sustained rural consumption growth.
- **Impact of Inflation and Consumption**: Rising inflation led to lower overall consumption, with a more pronounced effect in rural, low-income states.
  - Middle-income states helped sustain consumption demand.

Factors Behind Poverty Decline

- **Consumption Growth**: Higher consumption growth in the 0-5% income group.
  - Rural consumption saw a 22% increase, with MPCE reaching Rs 1,677 in 2023-24, and urban areas saw an 18.7% increase to Rs 2,376.
  - Consumption inequality decreased, with the Gini coefficient dropping to 0.24 in rural areas and 0.28 in urban areas.
- **Shift in the poverty line** from the 5-10% to the 0-5% income group.
- **Improved rural mobility** due to enhanced physical infrastructure.
- **Government schemes** like Direct Benefit Transfer (DBT) contribute to reduced rural-urban income disparity.
  - About 30% of rural monthly per capita expenditure (MPCE) is explained by factors like DBT transfers, rural infrastructure development, and support for farmers' income.

JAMMU RAILWAY DIVISION

Context

Recently, the Prime Minister inaugurated the Jammu railway division (under the Northern Railway Zone), marking a significant advancement in improving train service management in India's northernmost region.

About

- **Definition:** An administrative unit within Indian Railways responsible for managing train operations, maintenance, and infrastructure development in its jurisdiction.
- Indian Railways Structure
  - 19 zones (including Metro Railway, Kolkata) and 70 divisions under these zones.
  - Zones are headed by the **General Manager (GM)**.
- **Significance of the Jammu Division:** Overseeing iconic rail infrastructure projects that will transform regional connectivity:
  - **Anji Khad Bridge:** India's first cable-stayed rail bridge.
  - **Chenab Rail Bridge:** The world's highest railway arch bridge.
  - **USBRL Project:** Crucial for connecting Kashmir to the rest of India through the **Udhampur-Srinagar-Baramulla Railway Link (USBRL)**.
- **Strategic Importance:** Plays a key role in driving regional development, enhancing accessibility, and boosting tourism in **Jammu and Kashmir**.
- **Modern Infrastructure:** Equipped with advanced IT systems for streamlined and efficient rail operations.

COUNTRY'S FIRST ORGANIC FISH CLUSTER

Context

Recently, the Union Animal Husbandry and Fisheries Minister inaugurated India's first organic fisheries cluster in Sikkim.

About

- **Aim:** To sell antibiotic, chemical, and pesticide free organic fish in eco-conscious markets across the globe.

- **The organic fisheries cluster** focuses on an ecologically healthy fish farming system avoiding chemicals, antibiotics, and pesticides. This also ensures **minimal environmental pollution** and **prevents damage to aquatic ecosystems,** contributing to sustainable fish production practices.
- The minister has also laid the foundations for 50 key projects under the **Pradhan Mantri Matsya Sampada Yojana (PMMSY),** covering all northeastern states except Arunachal Pradesh and Mizoram.

Pradhan Mantri Matsya Sampada Yojana (PMMSY)

- It is the flagship scheme of the Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, and **was launched in 2020.**
- **Aim:** To give momentum to the 'sunrise' fisheries sector through **consolidated efforts from various schemes and initiatives.**
- The PMMSY is an umbrella scheme with **two separate components** namely **Central Sector Scheme (CS)** and **Centrally Sponsored Scheme (CSS).**
- The Centrally Sponsored Scheme (CSS) Component is further segregated into **Non-beneficiary oriented and beneficiary orientated subcomponents/activities**:
  - Enhancement of Production and Productivity
  - Infrastructure and Post-harvest Management
  - Fisheries Management and Regulatory Framework.

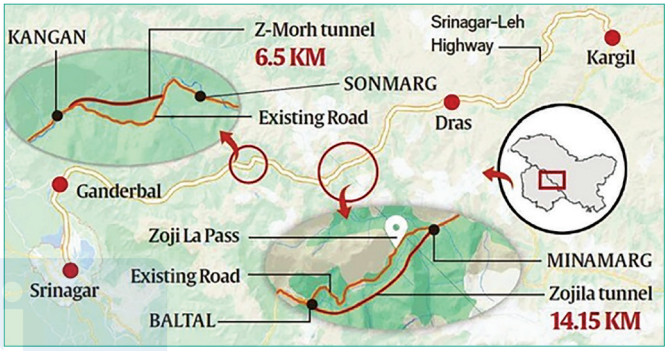
Z-MORH TUNNEL

Context

Recently, the Prime Minister inaugurated the 6.5 km-long Z-Morh tunnel at Sonamarg, a vital infrastructure project enhancing connectivity in the region.

About

- **Location:**
  - Constructed near **Gagangir village**, ahead of **Sonamarg**, on the **Srinagar-Leh highway**.
  - Ensures **all-weather connectivity** to Sonamarg, a major tourist destination.
  - Named after the **Z-shaped road stretch** at the site of construction.
- **Need for the Tunnel:**
  - The stretch is at an altitude of **8,500 feet**, making it prone to **snow avalanches** in winter.
  - The road to Sonamarg remains **closed for most of the winter**, necessitating an alternative route.
- **Strategic Importance:**
  - Part of the larger **Zojila tunnel project**, ensuring **year-round connectivity between Srinagar and Ladakh**.
  - **Facilitates quick military access** to Ladakh, reducing dependence on **air maintenance** for forward bases.
  - Enhances connectivity between **Srinagar, Dras, Kargil, and Leh**.
  - Supports **Indian defence forces** deployed in:
    - **Siachen Glacier** and **Turtuk sub-sector** (against Pakistan).
    - **Eastern Ladakh** (against Chinese forces, especially post-2020 standoff).
  - Reduces **logistical costs** and increases the **lifespan of transport aircraft** by enabling ground transportation of troops and supplies.



FUTURE OF JOBS REPORT, 2025

Context

Recently, the World Economic Forum (WEF) published the Future of Jobs Report 2025, highlighting emerging job trends and workforce transformations globally.

Key Highlights

- **Fastest-Growing Roles**
  - Increasing demand for **frontline jobs** (farmworkers, delivery personnel) and **care economy roles**.
  - Expansion of **technology-driven** and **green transition jobs** due to sustainability and digitalization efforts.
- **Declining Roles**
  - **Clerical jobs** (cashiers, data entry clerks, bank tellers) are declining due to **automation and AI**.
  - Adoption of **self-service kiosks, AI-driven data processing, and digital banking** is replacing traditional roles.
- **Job Displacement and Creation**
  - **Automation, renewable energy investments, and demographic shifts** are reshaping the job market.
  - **1.6 million jobs** are expected to be displaced globally due to slower economic growth.
  - New opportunities are emerging in **AI, machine management, and renewable energy**.
- **Technological Advancements:** 60% of businesses see digital transformation as the biggest driver of change by 2030.

World Economic Forum (WEF)

- **About:**
  - An international organization for public-private cooperation.
  - Engages global leaders to shape agendas across industries, regions, and the world.
- **Foundation:**
  - Established in 1971 by Klaus Schwab as the European Management Forum.
  - Introduced the concept of **"stakeholder capitalism"**, focusing on long-term value for all stakeholders rather than short-term shareholder profits.
- **Evolution:**
  - Expanded focus to economic and social issues in 1973.
  - Introduced membership for the world's top 1,000 companies in 1975.
  - Rebranded as the **World Economic Forum (WEF)** in 1987, strengthening its role as a global dialogue platform.
  - Recognized as an international organization in 2015.
- **Headquarter:** Geneva, Switzerland.
- **Major Reports:**
  - Global Competitiveness Index
  - Global Gender Gap Index
  - Energy Transition Index
  - Global Risk Report
  - Global Travel and Tourism Competitiveness Index

- **Key technologies in demand:**
  - **Artificial Intelligence (AI) & information processing (86%)** – driving automation and data analytics.
  - **Robotics & automation (58%)** – enhancing efficiency in manufacturing, logistics, and healthcare.
  - **Energy technologies (41%)** – advancing sustainability and emissions reduction.
- **Green Transition:** Climate policies are increasing demand for:
  - **Renewable energy engineers** – developing clean energy solutions.
  - **Environmental engineers** – managing pollution control and sustainability projects.
  - **Electric & autonomous vehicle specialists** – driving transportation innovation.
- **Demographic Shifts**
  - **Aging populations in high-income economies** are increasing demand for **healthcare professionals**.
  - **Growing workforces in low-income economies** are creating demand for **educators and workforce managers**.
- **Geoeconomic Fragmentation**
  - **Trade restrictions and geopolitical tensions** are impacting business strategies.
  - **34% of organizations** are rethinking business models due to global uncertainties.
  - **Offshoring, reshoring, and cybersecurity roles** are gaining prominence.
- **India-Specific Insights**
  - **AI Skills Leadership:** India is a global leader in AI skill development, with corporate-backed GenAI training programs.
  - **Tech Adoption Acceleration**
    - **35% of Indian businesses** expect **semiconductors & computing technologies** to transform industries.
    - **21% anticipate quantum computing & encryption** to impact business security.
  - **Workforce Growth**
    - **India & Sub-Saharan Africa** will supply nearly **two-thirds of new workforce entrants** in the coming years.
    - Emphasis on **bridging skill gaps** and **creating sustainable employment** opportunities.

INDIAN CUSTOMS ELECTRONIC GATEWAY (ICEGATE)

Context

Recently, the Ministry of Commerce stated that the discrepancy in gold counting errors was mainly due to the transition of data transmission from SEZ to ICEGATE.

About

- **Establishment & Purpose:**
  - Established in **2007** as the **national portal of Indian Customs** under the **Central Board of Indirect Taxes and Customs (CBIC)**.
  - Provides **e-filing services** for **trade, cargo carriers, and trading partners**.
- **Functionality & Role:**
  - Acts as a **centralized hub** for all **electronic interactions** between Indian Customs and the trading community.
  - Serves as the **main infrastructure** connecting **trade users** with the Indian government's **customs department**.
  - Facilitates **information exchange** between external trading partners involved in **international trade**.
- **Integration with Partner Agencies:** Internally linked with multiple agencies, including:
  - **RBI, Banks, DGFT, DGCIS, Ministry of Steel, Directorate of Valuation**, and various **Partner Government Agencies (PGAs)** involved in **EXIM trade**.
- **Key Contributions:**
  - **Streamlines customs procedures**, reducing delays and inefficiencies.

- **Enhances trade facilitation** by offering digital services for smoother transactions.
- **Promotes transparency and efficiency** in **cross-border trade** through its multiple user-friendly features.

FAST TRACK IMMIGRATION – TRUSTED TRAVELLER PROGRAMME (FTI-TTP)

Context

The Union Home Minister will inaugurate the Fast Track Immigration – Trusted Traveller Programme (FTI-TTP).

About

- **Overview:**
  - FTI-TTP (Fast-Track Immigration – Trusted Traveller Programme) simplifies and secures **international travel** for **Indian nationals and OCI cardholders**.
  - It offers **expedited immigration clearance** via **automated e-gates**, ensuring a seamless and secure process.
  - Inspired by systems like **U.S. Global Entry** and the **UK's Registered Traveller Service**, it uses **biometric authentication** for faster clearance of pre-verified passengers.
- **Launch & Objectives:**
  - **Introduced in June 2024** at **IGI Airport, Terminal 3**.
  - Designed to **enhance international mobility** by making immigration **faster, smoother, and more secure**.
  - Initially available for **Indian nationals and OCI cardholders**, with plans to extend it to **foreign travellers**.
- **Key Features:**
  - **Gratis Basis**: Initially offered **free of cost** for Indian nationals and OCI cardholders.
  - **Automation & Security**: Uses advanced **biometric verification** to streamline the immigration process.
  - **Expedited Clearance**: Pre-verified passengers can complete **immigration checks automatically** at e-gates.
- **Implementation & Management:** The **Bureau of Immigration** under the **Ministry of Home Affairs** is the nodal agency responsible for execution.
- **Implementation Phases:**
  - **Phase 1:**
    - Covers **Indian citizens and OCI cardholders**.
    - Implemented at **7 major airports**: **Mumbai, Chennai, Kolkata, Bengaluru, Hyderabad, Cochin, and Ahmedabad**.
  - **Phase 2:**
    - Expands coverage to **foreign travellers**.
    - Full implementation at **21 major airports** across India.

INTEREST EQUALISATION SCHEME

Context

Recently, the Department of Commerce extended the Interest Equalisation Scheme for pre- and post-shipment rupee export credit to MSME exporters until August 31.

About

- **Introduction:**
  - **Launched on April 1, 2015**, to provide **pre- and post-shipment export credit** in rupees.
  - Initially valid for **five years** until **March 31, 2020** but later extended, including a **one-year extension during COVID-19** and further renewals with additional funding.
- **Implementing Agency & Oversight:**
  - Administered by the **Reserve Bank of India (RBI)** through **Public and Non-Public Sector banks**, which offer export credit.
  - Jointly monitored by the **Directorate General of Foreign Trade (DGFT)** and **RBI** under a **consultative mechanism**.
- **Objective:**
  - Enhances the **competitiveness** of identified export sectors.
  - Aims to **boost export performance** by reducing interest costs for exporters.
- **Key Features:**
  - **Eligibility & Certification:**
    - Exporters must submit a **certification from an external auditor** to their bank to claim benefits.
    - Banks verify eligibility and **reimburse interest equalisation benefits** from the RBI based on certification.
  - **Interest Equalisation Benefits:**
    - **2% interest subsidy** on **pre- and post-shipment export credit** for **merchant and manufacturer exporters** in **410 tariff lines** (at the 4-digit HS code level).
    - **3% interest subsidy** for **all MSME manufacturer exporters**.
  - **Fund Limit & Caps:** The scheme is now **fund-limited**, with a maximum benefit cap of **₹10 crore per year per Import Export Code (IEC)**.
  - **Banking Regulations:** Banks lending at an **average rate exceeding Repo + 4%** are **debarred** from participating in the scheme.

PROJECTS ISNR AND INR KONNECT

Context

Recently, the Rubber Board of India launched two key initiatives, iSNR (Indian Sustainable Natural Rubber) and INR Konnect, to strengthen the country's rubber industry globally and enhance domestic production.

About

- **iSNR: Indian Sustainable Natural Rubber**
  - **Objective:**
    - The initiative aims to **align Indian rubber production** with the **European Union Deforestation Regulation (EUDR) standards** by ensuring responsible and traceable rubber cultivation.
    - It introduces **traceability certification**, which helps verify that rubber is sourced sustainably, preventing deforestation and environmental harm.
  - **Benefit:**
    - By meeting EUDR standards, **Indian rubber producers gain easier access to European Union markets**, increasing export potential and market credibility.
- **INR Konnect:** Web-Based Productivity Platform
  - **Objective:** Designed to bridge the gap between **owners of untapped rubber plantations** and **adopters** willing to invest in improving productivity.
  - **Features:**
    - **Certified Network:** The **Rubber Board certifies growers, adopters, and tappers**, ensuring all participants meet quality and sustainability criteria.
    - **Training Programmes:** Offers **technical guidance** on **production management, tapping techniques, and sustainable practices**.
    - **Database of Certified Tappers:** Maintains a **comprehensive record of skilled tappers**, allowing plantation owners to access trained professionals easily.
- **Significance:**
  - Addresses the issue of **underutilized rubber plantations**, which make up **20-25% of India's rubber holdings**.
  - Many plantations remain untapped due to **low rubber prices, absentee ownership, and lack of skilled workforce**.

About Rubber Crop

- Commercial crops introduced by the British to India
- Requires a Warm and Humid Climate
- **Soil Requirement:** Well-drained, deep, and loamy soils with high organic content are ideal.
- **Climate Requirements:**
  - Requires **high humidity** and **plenty of rainfall** (200-300 cm annually).
  - **Optimum temperature range:** 25 to 35°C.
  - Grows best in **tropical regions** with no prolonged dry spells.

India's Rubber Industry

- **Global Position:** India ranks as the **3rd largest producer** of natural rubber globally, behind **Thailand and Indonesia**. It is also the **4th largest consumer** of natural rubber, with high domestic demand from the **automobile and manufacturing sectors**.
- **Major Producing States: Kerala** contributes over **90% of India's total rubber production**, making it the dominant hub for the industry.
  - Other rubber-producing states include **Tamil Nadu, Karnataka, Tripura, Assam, and Meghalaya**.
- **Key Challenges:**
  - **Climate Change:** Rising temperatures and unpredictable rainfall affect rubber yields and tapping cycles.
  - **Global Competition:** Countries like **Thailand, Indonesia, and Vietnam** offer **cheaper rubber**, making it difficult for Indian exporters to compete.
  - **Labor Shortages:** A shrinking workforce in rubber plantations has increased production costs and slowed down tapping activities.
- **Government Initiatives:**
  - **National Rubber Policy 2019:** Aims to boost rubber production, increase productivity per hectare, and strengthen domestic processing industries.
  - **Sustainable & Inclusive Development of Natural Rubber Sector Scheme:** Focuses on eco-friendly cultivation, improving farmer incomes, and enhancing sustainability in the rubber supply chain.
  - **INROAD Project:** Launched to utilize untapped plantations, increasing India's rubber production capacity and reducing dependence on imports.

Rubber Board of India

- **Nature:**
  - It is a **statutory body** functioning under the **Ministry of Commerce and Industry, Government of India**.
  - It was established under the **Rubber Act, 1947**, with the mandate to regulate, develop, and promote the **rubber industry** in India.
- **Objectives**
  - **Development of the Rubber Sector:** Implements research, training, and extension programs to enhance rubber cultivation, processing, and sustainability.
  - **Facilitate Price Stabilization & Market Access:** Works on price monitoring, policy interventions, and market intelligence to ensure stable income for rubber growers and prevent market fluctuations.
  - **Promote Domestic & Export Markets:** Supports value addition, branding, and international trade to expand the domestic rubber industry and improve export competitiveness.
- **Headquarters:** Located in **Kottayam, Kerala**

SECURITIES TRANSACTION TAX

Context

Recently, the Securities Transaction Tax (STT) collection recorded a surge of over 75%, reaching Rs. 44,538 crore by January 2025, compared to Rs. 25,415 crore during the same period in 2024.

About

- **Nature:** A **direct tax** imposed on the **purchase and sale of securities** listed on recognized stock exchanges in India.
- **Governing Authority:** Levied and collected by the **Central Government of India** under the **Securities Transaction Tax (STT) Act**.
- **Taxable Transactions:**
  - **Equity Instruments:** Shares, scrips, and stocks.
  - **Debt Instruments:** Bonds and debentures.
  - **Derivatives:** Futures and options traded on recognized stock exchanges.
  - **Mutual Funds:** Units of mutual funds and other collective investment schemes.
  - **Government Securities:** Only those with an equity nature.
  - **Equity-Oriented Units:** Units of mutual funds classified as **equity-oriented**.
  - **Rights & Interests in Securities:** Any tradable rights or interests associated with securities.
  - **Securitized Debt Instruments:** Financial instruments backed by a pool of underlying assets.
- **Tax Rates:** Vary based on the type of security and transaction.
- **Exemptions:** Not applicable to off-market transactions, commodity trading, or currency transactions.
- **Collection Mechanism:**
  - The **broker** is responsible for collecting STT when a client executes stock market transactions.
  - The collected tax is then remitted to the **government**.

DIAMOND IMPREST AUTHORIZATION (DIA) SCHEME

Context

Recently, the Department of Commerce launched the Diamond Imprest Authorization (DIA) Scheme to streamline and facilitate diamond trade operations.

About

- **Aim:** The scheme is introduced to enhance India's global competitiveness in the diamond sector, ensuring the country maintains its leadership position in the diamond processing and export industry.
- **Key Features**
  - **Duty-Free Imports**
    - The scheme allows **duty-free import** of **natural cut and polished diamonds** that are **less than ¼ carat (25 cents)**.
    - This facilitates **cost-effective procurement** of raw materials for Indian diamond exporters.
  - **Export Obligation**
    - Exporters availing of the scheme must fulfill a **mandatory export obligation**, with a **minimum value addition of 10%**.
    - This ensures that India continues to contribute to **global value addition** in the diamond trade.
  - **Eligibility**
    - Only **diamond exporters** that hold a **Two Star Export House status and above** are eligible.
    - Additionally, exporters must have **a minimum annual export turnover of USD 15 million** to qualify.
    - This ensures that the scheme benefits **established exporters** while promoting high-value trade.
- **Need for the Scheme**
  - **Global Best Practices**
    - The scheme is introduced in response to the **beneficiation policies** adopted by **diamond-mining countries** like **Botswana, Namibia, and Angola**.
    - These countries require diamond manufacturers to **process a certain percentage of diamonds locally** before exporting.
  - **Retaining India's Leadership**
    - India has been a **global leader in diamond cutting and polishing**, and this scheme helps in **retaining its competitive edge** in the industry.
    - Ensuring access to **duty-free raw materials** strengthens India's **diamond processing and export ecosystem**.
- **Significance**
  - **Empowering MSME Exporters:** The scheme is designed to **support MSME exporters** by creating a **level playing field**, allowing them to **compete with large-scale exporters**.
  - **Job Creation and Skill Development:** By boosting the **cutting and polishing industry**, the scheme is expected to **generate employment opportunities** for **skilled artisans and craftsmen**.
  - **Enhancing India's Diamond Exports:** The initiative will contribute to the **growth of India's diamond exports**, further strengthening the country's **position as a global hub** for **diamond processing**.

GLOBAL ECONOMIC PROSPECTS (GEP) REPORT, 2025

Context

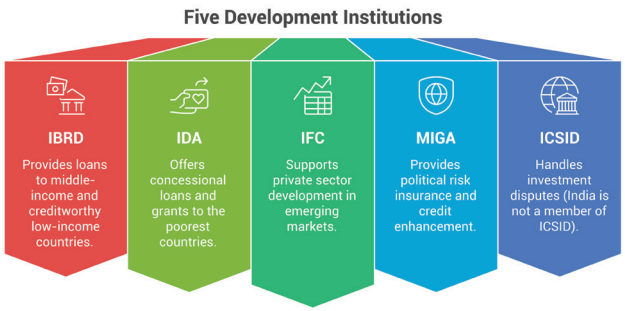
Recently, The World Bank has released the Global Economic Prospects (GEP) report, 2025.

Key Highlights

- **Global Growth Projections:** The global economy is expected to expand by **2.7% in both 2025 and 2026**, maintaining the same pace as 2024, indicating a stable yet slow recovery.
- **Emerging Market and Developing Economies (EMDEs):**
  - These economies have undergone **significant transformation** since 2000, increasing their contribution to **45% of global GDP** from **25% at the start of the century**.
  - **India, China, and Brazil**, the three largest EMDEs, have collectively driven **60% of annual global growth**, highlighting their critical role in the global economy.
- **Trade Restrictions:**
  - The number of **new global trade restrictions in 2024** was **five times higher** than the average between 2010-19, significantly impacting global trade.
  - These restrictions have contributed to a decline in economic growth rates, which dropped from **5.9% in the 2000s to 3.5% in the 2020s**.

World Bank

- **Establishment:** Founded in 1944 as the International Bank for Reconstruction and Development (IBRD) along with the IMF.
  - Over time, the IBRD evolved into the World Bank.
  - It is one of the **United Nations' specialized agencies**.
- **Purpose:** A **global partnership** of five institutions working to **reduce poverty** and promote **sustainable development** in developing countries.
- **Membership:** 189 countries, including India.
- **Major Reports**
  - Business Ready (B-READY) Report.
  - Human Capital Index.
  - World Development Report.



- **Challenges & Recommendations:**
  - **Rising trade tensions** between major economies could further slow global economic expansion.
  - **Persistent inflation** remains a concern, as it may **delay expected interest rate cuts** by central banks.
  - **Policy interventions** can help address these challenges, with EMDEs needing to **capitalize on opportunities** through economic reforms.
  - **Stronger global trade governance** is necessary to ensure sustainable growth, with multilateral institutions playing a key role in policy coordination.
- **India-Specific Highlights**
  - **Growth Outlook:**
    - India is projected to remain the **fastest-growing large economy** in **FY26 and FY27**, with an estimated **6.7% growth rate**.
    - **The services sector** is expected to sustain its momentum, while **manufacturing activity** will gain strength, further driving economic expansion.
  - **Investment Growth:**
    - **Private investments** are anticipated to increase, backed by **favorable financing conditions** and **improved corporate balance sheets**.
    - **Steady infrastructure spending** and **policy support** will contribute to long-term economic resilience and growth.

DIFFERENTIAL PRICING

Context

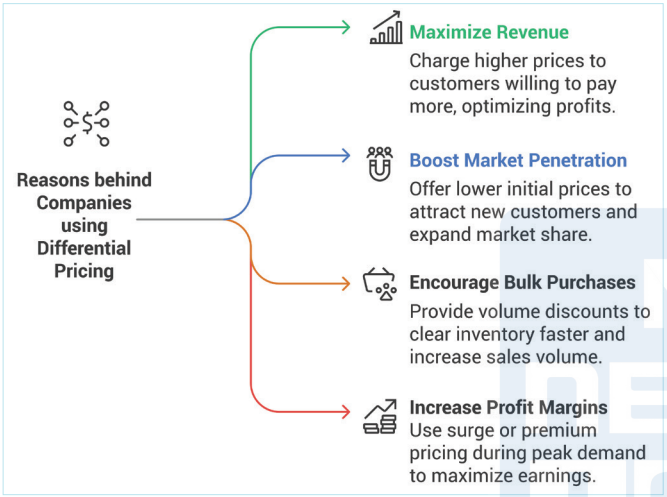
Recently, the Central Consumer Protection Authority (CCPA) raised concerns over ride-hailing companies allegedly using differential pricing based on consumers' smartphone types.

About

- Differential pricing is a **pricing strategy** where businesses charge **different prices for the same product or service** based on various factors.
- **The pricing variations are influenced by:**
  - **Location** – Adjusting prices based on regional economic conditions.
  - **Demand Fluctuations** – Prices may rise or fall based on market demand.
  - **Consumer Demographics** – Different pricing for different age groups, income levels, etc.
  - **Purchasing Behavior** – Discounts or higher prices based on customer loyalty and buying patterns.
- **Types of Differential Pricing**
  - **Price Localization:** Prices are adjusted based on **local purchasing power**, competition, and economic conditions.
  - **Real-Time Pricing**
    - Prices change **dynamically** based on **demand, competitor pricing, and product availability**.
    - Common in industries like **ride-hailing services (surge pricing)** and **airline tickets**.
  - **Subscription-Based Pricing**
    - Customers receive **discounts or benefits** for committing to **long-term usage** of a service.

- Examples include **streaming services, software licenses, and gym memberships**.

- **Seasonal Discounts**
  - Prices are reduced during **specific seasons or holidays** to attract more customers.
  - Common in **retail and travel industries** (e.g., **holiday sales, off-season travel discounts**).
- **Volume Discounts**
  - Encourages bulk purchases by offering a **lower per-unit price** for larger quantities.
  - Used in **wholesale, B2B sales, and membership-based retail stores**.



Legal Provisions Governing Differential Pricing in India

- **Consumer Protection Act, 2019:** Differential pricing that discriminates between consumers or exploits them can be challenged under the Consumer Protection Act.
  - Section 2(47) prohibits practices that harm consumer interests.
- **Section 4 of Competition Act, 2002:** Prohibits dominant players from indulging in discriminatory pricing that exploits customers or restricts market access.
  - The **Competition Commission of India (CCI)** has scrutinized pricing practices in sectors like aviation and ride-hailing.
- **Essential Commodities Act, 1955:** Differential pricing for essential goods like food, fuel, or medicine is restricted to prevent exploitation during shortages or emergencies.
- **Pallavi Refractories v. Singareni Collieries Co. Ltd. (2005):** The Supreme Court upheld differential pricing when it is rational and based on clear criteria, such as market segmentation or cost differences.
- **Bottled Water Pricing**: In 2017, the government clarified that identical bottled water sold in multiplexes, airports, and retail stores must have the same MRP under the Legal Metrology Rules.

10,000 GEOGRAPHICAL INDICATION (GI) TAGS BY 2030

Context

Recently, the Union Minister of Commerce & Industry set a target to achieve 10,000 Geographical Indication (GI) tags by 2030.

About

- **Definition**
  - A **Geographical Indication (GI)** is a label identifying products originating from a specific **geographical region**, possessing **unique qualities, reputation, or characteristics** linked to that location.
  - It applies to **agricultural, natural, and manufactured goods**, including handicrafts, textiles, and food products.
- **Duration:** GI registration is valid for **10 years** since the date of registration.
- **Significance:**
  - **Legal Protection:** Prevents unauthorized use of the product name.
  - **Economic Boost:** Enhances marketability and **promotes exports** by distinguishing local products globally.
  - **Consumer Trust:** Assures **quality, authenticity, and distinctiveness**, benefiting both producers and buyers.
  - **Cultural & Traditional Value:** Helps preserve traditional **skills, practices, and heritage** linked to the product.
- **Global Recognition**
  - Recognized under the **Paris Convention for the Protection of Industrial Property** as an **Intellectual Property Right (IPR)**.
  - Covered under the **TRIPS Agreement (Trade-Related Aspects of Intellectual Property Rights)** of the WTO.
- **Indian Regulation**
  - Governed by the **Geographical Indications of Goods (Registration & Protection) Act, 1999**.
  - **Registrar of Geographical Indications (RGI)** grants GI status.
  - Nodal Authority: Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.
- **GI Tags in India**
  - **First GI product: Darjeeling Tea** (West Bengal), known for its unique flavor and aroma.
  - **State with Most GI Tags: Uttar Pradesh**, followed by **Tamil Nadu**, covering a range of textiles, handicrafts, and food products.
- **Recent Significant GI Tags:**
  - **Bodo Narzi** (Assam) – A traditional **semi-fermented dish** made from jute leaves.
  - **Tirangi Barfi** (Uttar Pradesh) – A famous tri-colored sweet.
- **Total GI Tags Issued: 605 (as of now)**, covering diverse product categories across states.

NATIONAL TURMERIC BOARD

Context

Recently, The Union Minister of Commerce & Industry inaugurated the National Turmeric Board in New Delhi.

About

- **Composition of the Board:**
  - **Chairperson:** Appointed by the **Central Government** to oversee and guide the board's functions.
  - **Secretary:** Appointed by the **Department of Commerce** to facilitate operations and policy implementation.
  - **Government Representatives:**
    - Members from the **Ministry of AYUSH** to support turmeric's medicinal applications.
    - Representatives from **Departments of Pharmaceuticals, Agriculture & Farmers Welfare, and Commerce & Industry** to integrate turmeric-related policies across sectors.
  - **State Representation:**
    - **Maharashtra & Telangana**, the two **largest turmeric-growing states**, will have representatives.
    - **Meghalaya** will also have representation.
    - Other states will be **included on a rotational basis** to ensure broader participation.
- **Mandate & Key Focus Areas:**
  - **Research & Development:**
    - Promote **scientific research** for better **turmeric varieties, yield improvement, and disease resistance**.
    - Encourage **innovation in turmeric-based products**, including pharmaceuticals and nutraceuticals.
  - **Market Expansion & Trade Promotion:**
    - Develop **new international markets** to increase India's turmeric exports.
    - Support branding, marketing, and positioning turmeric as a **high-value agricultural product**.
  - **Logistics & Supply Chain Enhancement:**
    - Strengthen **transportation, storage, and processing infrastructure** to reduce post-harvest losses.
    - Improve connectivity between farmers, processors, and exporters for a **smoother supply chain**.
  - **Quality & Safety Standards:**
    - Implement **global standards** for turmeric production, processing, and export.
    - Ensure compliance with **food safety norms** to boost consumer confidence and trade prospects.
  - **Awareness & Promotion:**
    - Educate farmers and stakeholders about **best agricultural practices** for turmeric cultivation.
    - Highlight the **medicinal, nutritional, and therapeutic properties** of turmeric to increase domestic and global demand.
- **Headquarters:** Nizamabad, Telangana

Turmeric

- **Botanical & Chemical Properties:**
  - Turmeric is the **underground stem** (rhizome) of the *Curcuma longa* plant, belonging to the **ginger family (Zingiberaceae)**.
  - Its active compound, **curcumin**, gives turmeric its **yellow color** and is known for its **anti-inflammatory, antioxidant, and antimicrobial** properties.
- **Cultivation in India:**
  - India cultivates **over 30 varieties** of turmeric across **20+ states**.
  - Major producing states include **Maharashtra, Telangana, Karnataka, and Tamil Nadu**.
- **Global Standing:**
  - India is the **largest producer, consumer, and exporter** of turmeric worldwide.
  - In **2022-23**, India accounted for **over 75% of global turmeric production** and held **62% of the global export market**.
- **Export Performance:**
  - In **2022-23**, India exported **1,53,400 tonnes** of turmeric and turmeric-based products.
  - The total export value stood at **USD 207.45 million**.
  - Key export destinations include **Bangladesh, UAE, the US, and Malaysia**.
- **Geographical Indication (GI) Tags:** Several **turmeric varieties** from India have received **GI tag recognition**, including:
  - **Lakadong Turmeric** (*Meghalaya*) – known for its **high curcumin content**.
  - **Kandhamal Turmeric** (*Odisha*) – valued for its **organic cultivation**.
  - **Erode Turmeric** (*Tamil Nadu*) – famous for its **bright color and aroma**.
  - **Armoor Turmeric** (*Nizamabad, Telangana*) – recognized for its **unique medicinal properties**.
- **Climatic Conditions for Turmeric Cultivation:**
  - **Altitude:** Can be grown from **sea level up to 1500 m** above sea level.
  - **Temperature:** Thrives in a **20-30°C** temperature range.
  - **Rainfall:** Requires **1500 mm or more** of annual rainfall and can be grown under **rainfed or irrigated** conditions.
  - **Shade Tolerance:** Grows well in **partial shade**, but larger and better **rhizomes develop in open sunlight**.
  - **Soil Type:** Best suited for well-drained sandy or clay loam soils.

4 ENVIRONMENT

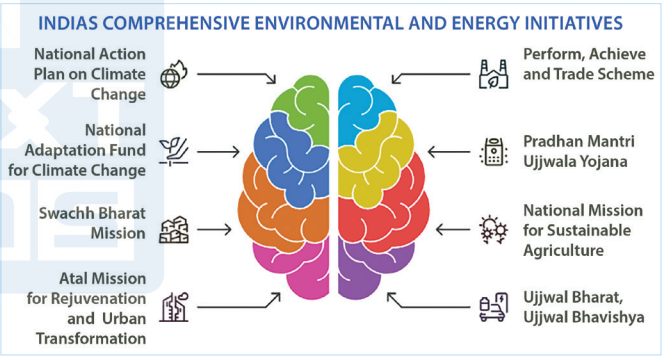
INDIA SUBMITS 4TH BIENNIAL UPDATE REPORT TO UNFCCC

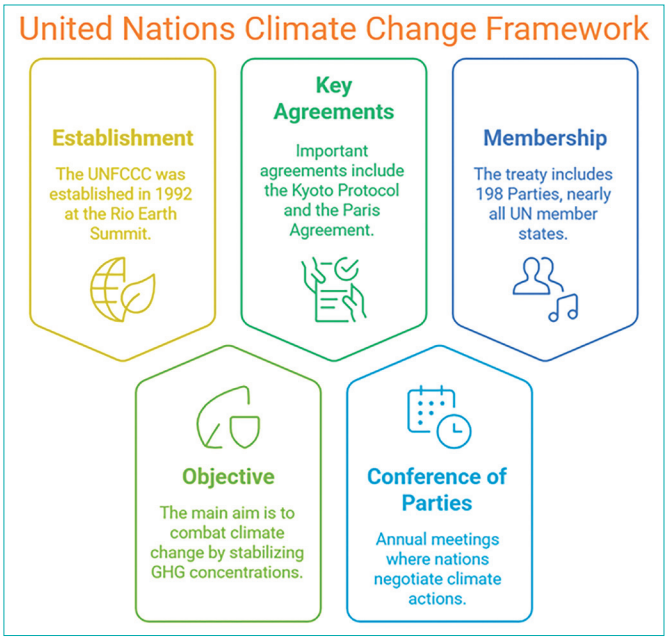
Context

Recently, India submitted its Fourth Biennial Update Report to the UNFCCC, outlining its Greenhouse Gas (GHG) inventory and emission reduction efforts.

Key Highlights of the Report

- **Greenhouse Gas Emissions in 2020**
  - **Overall Reduction:** In 2020, India's total GHG emissions decreased by 7.93% compared to 2019.
  - **Total Emissions (Excluding Land Use, Land-Use Change, and Forestry - LULUCF):** The emissions stood at 2,959 million tonnes of CO_2 equivalent (CO_2e).
  - **Net Emissions (Including LULUCF):** After accounting for land use and forestry, net emissions were 2,437 million tonnes of CO_2e.
- **Sectoral Contribution to GHG Emissions**
  - **Energy Sector:** Contributed the most to total emissions, accounting for 75.66%.
  - **Agriculture:** Responsible for 13.72% of emissions, primarily due to enteric fermentation, rice cultivation, and fertilizer use.
  - **Industrial Processes and Product Use (IPPU):** Made up 8.06% of emissions, including those from cement, steel, and chemical industries.
  - **Waste Sector:** Contributed 2.56% of emissions, mainly from solid waste disposal and wastewater treatment.
- **Role of Forests in Carbon Sequestration**
  - India's forest and tree cover, along with other land use, sequestered approximately 522 million tonnes of CO_2 in 2020.
  - This offset 22% of the country's total carbon dioxide emissions, playing a crucial role in reducing net emissions.
- **Progress towards Nationally Determined Contributions (NDC) Targets**
  - **Emission Intensity Reduction**
    - India has been successfully reducing its emission intensity while maintaining economic growth.
    - Between 2005 and 2020, the emission intensity of GDP reduced by 36%.
  - **Renewable Energy Expansion**
    - As of October 2024, the share of non-fossil fuel sources in installed electricity capacity has reached 46.52%.
    - Total installed renewable energy capacity, including large hydropower, stands at 203.22 GW.
    - Excluding large hydro projects, renewable energy capacity has increased 4.5 times—from 35 GW in March 2014 to 156.25 GW in 2024.
  - **Forest and Tree Cover Growth**
    - India's forest and tree cover has steadily expanded and now covers 25.17% of the country's total geographical area.
    - Between 2005 and 2021, an additional carbon sink of 2.29 billion tonnes of CO_2 equivalent has been created.





INDIA'S 1ST 'COASTLINE-WADERS BIRD CENSUS'

Context

Gujarat is set to conduct the country's first-ever census of coastal and wader birds at the Marine National Park and Sanctuary in Jamnagar.

About

- The census will be jointly organised by the **state forest department and the Bird Conservation Society of Gujarat.**
- **Waders Bird:**
  - They are also known as **shorebirds or sandpipers,** are a group of birds typically found in coastal habitats or wetlands.
  - They are characterized by **long legs, slender bodies, and often long bills,** which they use to forage for food like insects and worms.
- **Marine National Park:**
  - The Marine National Park and Marine Sanctuary in Gujarat is **India's first designated marine national park.**
  - Spanning the districts of Devbhoomi Dwarka, Jamnagar, and Morbi, it covers approximately 170 km of coastline and 42 islands.
  - This protected area in the **Gulf of Kutch** was established to conserve marine biodiversity and mangrove ecosystems.
  - The park is positioned along the **Central Asian Flyway (CAF).**
    - It is a key migratory route for birds traveling, covering a large continental area of Eurasia between the Arctic and Indian Oceans and the associated island chains.
- **Bird Species:**
  - Jamnagar district hosts over **300 species of local and migratory birds,** including more than 50 species of wader birds.
  - Among these are rare species like the **'Shankhlo' (Crab Plover)** and **'Moto Kichadiyo' (Great Knot),** which are seldom found elsewhere in the country.

ANIMAL WELFARE BOARD OF INDIA (AWBI)

Context

Recently, the AWBI and NALSAR University of Law, Hyderabad, signed an MoU to train animal welfare volunteers in animal care laws and procedures.

About

- **Establishment**
  - Founded in 1962 under the Prevention of Cruelty to Animals Act, 1960.
  - Established under the leadership of **Rukmini Devi Arundale**, a renowned humanitarian and animal rights advocate.
- **Composition:** The board consists of 28 members, including:
  - **6 Members of Parliament** (2 from **Rajya Sabha** and 4 from **Lok Sabha**).
- **Term of Office:** The tenure of board members is 3 years.
- **Key Functions:**
  - Enforces animal welfare laws across India.
  - Provides financial grants to Animal Welfare Organizations (AWOs).
  - Advises the Government of India on policies related to animal welfare and protection.

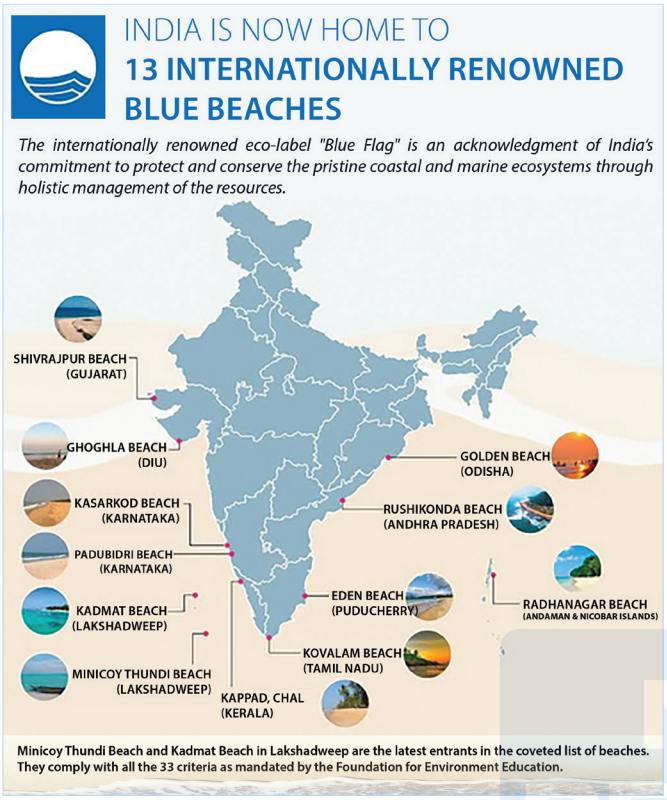
BLUE FLAG CERTIFICATION

Context

Recently, Kerala's Kappad and Chal beaches, located in Kozhikode and Kannur districts, have been awarded the prestigious Blue Flag certification.

About

- **Given By:** Foundation for Environment Education in Denmark (FEE) accords the globally recognized eco-label - Blue Flag certification.
- **Stringent Criteria:** FEE gives the award to beaches, marinas, and boating operators that meet **33 criteria**.
  - Broadly, they are divided into **four categories,** covering **water quality, environmental management, safety, and environmental information and education.**
  - The standards were established by the **Copenhagen-based Foundation for Environmental Education (FEE) in 1985.**
- The certification is **updated annually,** and locations must continue to meet the criteria to retain their Blue Flag status.
- **Blue Flag Beaches:**
  - There are over 4000 Blue Flag certified beaches across the world, with Spain leading with a total of 729 blue flag sites, followed by Greece.
  - **India** has 13 such beaches, the **Chandrabhaga beach on the Konark coast of Odisha** is the **first in Asia to get the Blue Flag certification.**
- **Significance:**
  - promote sustainable tourism,
  - protect ecosystems,
  - and encourage environmental stewardship at recreational sites.
  - It helps tourists identify destinations that prioritize environmental and safety standards.



WETLAND ACCREDITED CITIES IN WORLD

Context

Recently, Indore and Udaipur have become the first two Indian cities to join the global list of accredited wetland cities.

About

- **Sirpur Lake:**
  - **Location:** Indore, recognized as a Ramsar Site.
  - **Significance:** Known for water bird congregation and is being developed as a bird sanctuary.
- **Udaipur Wetlands:**
  - **Location:** Rajasthan, surrounded by five major wetlands: Pichola, Fateh Sagar, Rang Sagar, Swaroop Sagar, and Doodh Talai.

Wetland City Accreditation Program

- **Part of Ramsar Convention:** Approved during COP12 in 2015.
- **Criteria for Accreditation:** Cities must meet all six international criteria, including the adoption of measures for conservation of wetlands and ecosystem services.
- **Aim:** To promote the conservation and wise use of urban and peri-urban wetlands.
- **Validity:** Accreditation is valid for six years, after which it must be renewed based on the city's continued compliance with the six criteria.
- **Global Recognition:** Currently, 74 cities have received accreditation, with the highest number from China (22) and France (9).

AMUR FALCON

Context

Recently, Manipur's Tamenglong district imposed an immediate ban on the hunting, capture, killing, and sale of the Amur falcon.

About

- **Migration:**
  - The world's longest-distance migrating raptor.
  - Named after the Amur River, which flows through its breeding grounds.
- **Breeding Grounds:**
  - Found in Siberia, Mongolia, and Northern China.
  - Migrates to Southern and East Africa during winter.
- **Physical Appearance:**
  - Small falcons with females being larger.
  - Characterized by distinct eye masks and yellow ceres.
- **Diet:** Primarily feeds on insects, particularly locusts and termites, providing natural pest control.
- **Habitat:** Prefers open woods and marshes.
- **Threats:** Faces threats from illegal trapping and killing during migration, as well as habitat loss.
- **Conservation Status:**
  - **IUCN Status:** Least Concern
  - **CMS:** Appendix II
  - **WPA, 1972:** Schedule I Part B

HIMALAYAN iBex

Context

Recently, wildlife authorities in Himachal Pradesh began conducting surveys to assess the population of the Himalayan iBex.

About

- **Overview:**
  - A wild goat and subspecies of the Siberian ibex native to the Himalayan region of India, Pakistan, Tibet, and Nepal.
  - Found in India in Jammu and Kashmir, Himachal Pradesh, and Uttarakhand.

- **Habitat:**
  - Inhabits high-altitude regions of the Himalayas, including the Trans-Himalayan region, at elevations ranging from 3,000 to 5,800 meters.
  - Prefers steep, rocky terrain with ample vegetation and water access.
  - Migrates to lower elevations during winter to avoid deep snow and harsh weather conditions.
- **Physical Description:**
  - Thick, shaggy coat adapted to survive the harsh mountain environment.
  - Long, curved horns that can grow up to a meter in length.
  - Males have longer, more heavily ridged, and larger horns than females.
  - Males tend to be larger and more muscular compared to females.
- **Diet:** Herbivores that primarily feed on grasses, leaves, and shrubs.
- **Conservation Status:**
  - **IUCN Status:** Least Concern
  - **WPA, 1972:** Schedule I

KASHMIR CHINARS

Context

Recently, the Jammu and Kashmir government launched the "Digital Tree Aadhaar" program to help conserve the iconic Chinar trees.

About Kashmir Chinars (Platanus orientalis)

- **Scientific Name:** *Platanus orientalis*
- **Other Names:** Oriental plane tree, maple tree, locally called Boueen.
- **Features:**
  - **Size:** Large deciduous tree, growing up to 30 meters tall with a girth of 10 to 15 meters at ground level.
  - **Age:** The oldest Chinar tree in Kashmir, around 700 years old, was planted by Sufi Saint Syed Qasim Shah in Chattergam, Budgam district.
  - **Growth Rate:** Takes 30 to 50 years to reach mature height and around 150 years to reach full size.
- **Habitat:** Native to the Eastern Himalayas, thriving in cool climates with sufficient water.
- **Uses:**
  - **Medicinal:** Leaves and bark are used for medicinal purposes.
  - **Wood:** Lacewood is used for delicate interior furniture.
  - **Other Uses:** Twigs and roots are used to make dyes.
- **Geo-tagging Initiative:**
  - **Purpose:** QR codes are attached to surveyed trees, recording details like geographical location, health, age, and growth patterns.
  - **Management:** The project, led by J&K Forest Research Institute, enables the monitoring and management of Chinar trees.

UTRICULARIA

Context

Recently, a rare carnivorous plant, Utricularia, has been discovered in abundance this season at Rajasthan's Keoladeo National Park.

About Utricularia (Bladderworts)

- **Genus & Family:** Utricularia, commonly known as bladderwort, belongs to the Lentibulariaceae family and is the most diverse carnivorous plant genus.
- **Species & Distribution:** It includes 220 species found in temperate and tropical regions worldwide.
- **Rootless Structure:** Lacks roots and typically has a floating horizontal stem with simple or divided leaves.
- **Carnivorous Adaptation:** Features small bladder-like traps along the stem, which use a rapid suction mechanism to capture insect larvae, aquatic worms, and water fleas.
- **Trap Mechanism:** Sensitive trigger hairs on the trap door detect prey, causing it to open in less than a millisecond and close within 2.5 milliseconds.
- **Habitat & Spread:** Found in lakes, streams, and waterlogged soils, with some species becoming invasive in new environments.
- **Flowers:** Produces bisexual, bilaterally symmetrical flowers, aiding in reproduction.
- **Ecological Role:** Plays a crucial role in aquatic ecosystems by controlling microorganism populations and contributing to nutrient cycling.

Keoladeo National Park

- **Location:** Situated in eastern Rajasthan, it was formerly known as Bharatpur Bird Sanctuary and was renamed in 1981 to honor the ancient Shiva temple within the park.
- **Strategic Importance:** Located along the Central Asian migratory flyway, the park serves as a crucial stopover for migratory birds.
- **Vegetation:** The vegetation is primarily dry deciduous, with medium-sized trees and shrubs, providing diverse habitats for wildlife.
- **Flora:** Common trees include kadam, jamun, babul, kandi, ber, kair, and piloo.
- **Fauna:** Home to over 360 species of permanent and migratory birds, including species such as gadwalls, shovellers, tufted ducks, and the Siberian crane (which may be extinct).
- **Conservation Status:** It is both a Ramsar site (wetland of international importance) and a UNESCO World Heritage Site.

5 GEOGRAPHY

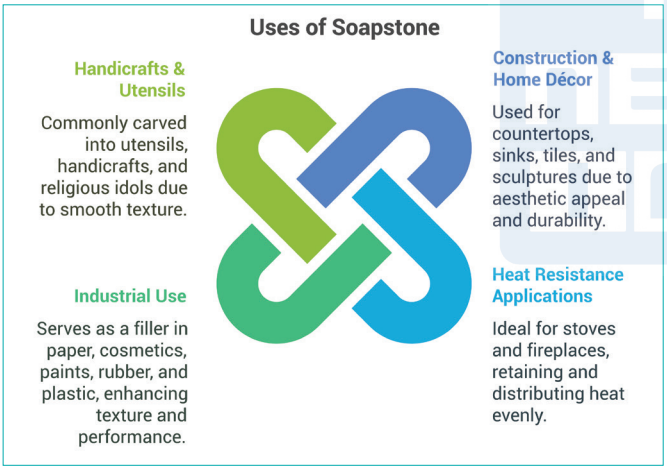
SOAPSTONE MINING

Context

Recently, the Uttarakhand High Court directed an immediate halt to mining operations in Bageshwar district following reports of illegal activities causing cracks in houses and hills.

About

- Soapstone is a soft metamorphic rock composed primarily of talc, with varying amounts of chlorite, dolomite, and magnesite.
- It is known for its smooth texture, durability, and heat resistance, making it a valuable material across various industries.



Availability of Soapstone in India

- According to the **Indian Bureau of Mines**, India has substantial reserves of soapstone, with the majority concentrated in the following states:
- **Rajasthan (57%) – Largest Producer**
  - Rajasthan accounts for the highest soapstone production in India.
  - Major deposits are found in **Udaipur, Dungarpur, and Bhilwara** districts.
- **Uttarakhand (25%) –** Uttarakhand has notable soapstone reserves, particularly in Bageshwar, Pithoragarh, and Almora districts.
- **Tamil Nadu and Karnataka – Smaller Reserves**
  - These states have minor soapstone deposits, primarily extracted for local industrial and handicraft purposes.

Environmental Concerns Associated with Soapstone Mining.

- **Land Subsidence**
  - Mining activities disturb the natural stability of land, leading to subsidence (gradual sinking of the ground).
  - This issue is critical in Uttarakhand, especially in **Kanda-Kanyal (Bageshwar)**, where mining has made the land vulnerable.
  - The removal of minerals weakens the ground, making it prone to collapse, especially in earthquake-prone zones.
- **Slope Instability**
  - Mining operations on lower slopes weaken the structural integrity of higher elevations, endangering villages situated above.
  - The region's **loamy and loose soil composition** makes it highly prone to erosion, particularly during heavy monsoons.
  - Frequent landslides and rockfalls pose a threat to both human settlements and local ecosystems.
- **Deficient Safety Measures**
  - Soapstone mining in many regions lacks proper safety infrastructure, leading to increased environmental degradation.
  - The absence of **green belts, retaining walls, buffer zones, and slope monitoring systems** accelerates soil erosion.
  - Without protective structures, excessive excavation makes the land vulnerable to collapse.
- **Water and Air Pollution**
  - **Water Scarcity**: Mining disrupts underground water channels, depleting natural water sources.
  - **Water Contamination**: Mining residues seep into local rivers and groundwater, affecting drinking water quality.
  - **Air Pollution**: Dust from mining operations leads to respiratory issues among local communities.

SADA ON KONKAN REGION

Context

The Konkan region, nestled between the Arabian Sea and the Western Ghats, is renowned for its unique geographical features Sada.

About

- A **sada** is a **flat-topped landscape** formed through centuries of erosion, often referred to locally as a **"large flat area."**

- Located in the **Konkan region** of **Maharashtra**, the **sada** landscapes share similarities with **plateaux**, known locally as **pathar** in the **Satara district**, with the **Kaas Plateau** being a notable example.
- **Characteristics of Sada**
  - **Barren Landscape**: The **sada** remains largely barren throughout the year but transforms dramatically during the **monsoon season**.
  - **Rocky Terrain**: The terrain is rocky and features **endemic flora** that thrives during the monsoons.
  - **Soil Composition**: The region has a highly weathered **lateritic soil** layer on top, which acts as a **catchment for rainwater**, contributing to **groundwater recharge**.
- **Biodiversity of Sada**
  - **Flora**: The landscape is home to **459 plant species**, with **105 species endemic** to the Konkan region, adding to its ecological importance.
  - **Fauna**:
    - 31 species of reptiles.
    - 13 species of amphibians.
    - 169 species of birds.
    - 41 species of mammals.
- **Cultural Significance:** The region also houses ancient **geoglyphs**, believed to be **10,000 years old**, showcasing the cultural and historical importance of the area.
- **Threats:** Development projects, laterite mining, and land-use changes for orchards and residential areas threaten the Sada. Its classification as **'wasteland'** in the Wasteland Atlas further endangers this fragile ecosystem.

VEMBANAD LAKE

Context

Recently, the Alappuzha district administration in Kerala launched a large-scale plastic cleanup drive under the Vembanad Lake Rejuvenation Project.

About

- **Location & Size:** India's longest lake and Kerala's largest, covering **2,033 sq. km** across Alappuzha, Kottayam, and Ernakulam districts.
- **Alternate Names:** Also known as *Vembanad Kayal, Vembanad Kol, Punnamada Lake* (in Kuttanad), and *Kochi Lake* (in Kochi).
- **Formation & Connection to the Sea:** Fed by four rivers—Meenachil, Achankovil, Pampa, and Manimala—the lake has an outlet to the **Arabian Sea** in the west.
- **Ecological & Geographical Importance:**
  - Surrounds the islands of **Pathiramanal, Perumbalam,** and **Pallippuram**.
  - Houses the **Kumarakom Bird Sanctuary** on its eastern coast.
  - Recognized as a **Ramsar site** of international significance in 2002.
- **Tourism & Events:**
  - A major backwater tourism destination in Kerala.
  - Hosts the famous **Vallam Kali (Nehru Trophy Boat Race)**, a Snake Boat Race held every August.

TRINIDAD AND TOBAGO

Context

Recently, Trinidad and Tobago has imposed a state of emergency in response to escalating violence, including a surge in gang-related shootings.

About

- **Capital** – Port of Spain.
- **Location** – Southernmost Caribbean nation, situated northeast of Venezuela, south of Grenada, in the Atlantic Ocean.
- **Geographic Features –**
  - **Rivers**: Ortoire River, Caroni River, Nariva River.
  - **Mountains**: Northern Range (Trinidad).

- **Highest Peak**: El Cerro del Aripo (940 meters).

- **History** – Colonized by Spain, France, and Britain; gained independence in 1962 and became a republic in 1976.
- **Government** – Parliamentary democracy with a Prime Minister (executive head) and a President (ceremonial role).
- **Economy** – Driven by oil, natural gas, petrochemicals, manufacturing, and tourism. A leading energy producer in the Caribbean.
- **Population & Culture** – 1.5 million people, ethnically diverse (Indo-Trinidadians, Afro-Trinidadians, mixed-race); English is the official language.

ECUADOR

Context

Recently, Ecuadorian President Daniel Noboa declared a 60-day state of emergency in seven provinces and three municipalities in response to growing internal unrest and armed conflict.

About

- **Location:** Situated in western South America, bordering the Pacific Ocean at the Equator, between Colombia and Peru.
- **Capital:** Quito
- **Highest Point:** Mount Chimborazo
- **Major Rivers:** The Babahoyo, Chira, Coca, Curaray, Daule, Esmeraldas, Guayas, Napo, Paztaza, and Putumayo.
- **Landscapes:** Known for its diverse and stunning landscapes, including the vast **Amazon jungle**, the towering **Andean highlands**, and the **Galápagos Islands**, a UNESCO World Heritage site famous for its unique wildlife.
- **Illegal Drug Trade:** Ecuador has also been associated with illegal drug trade activities.

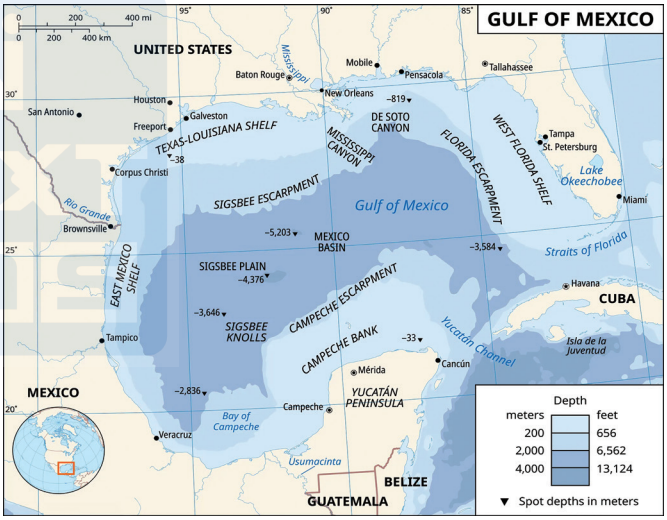
GULF OF MEXICO

Context

Recently, a proposal to rename the Gulf of Mexico as the "Gulf of America" has ignited debate over its historical, political, and cultural significance.

About

- **Introduction**
  - The **Gulf of Mexico** is the **largest gulf in the world** and a marginal sea of the Atlantic Ocean.
  - It is often called the **"Mediterranean of the Americas"** due to its enclosed nature and climatic influence.
  - The Gulf was formed due to **seafloor subsidence** caused by the movement of tectonic plates.



- **Location and Connectivity**
  - **Borders** the **southeastern coast of North America**.
  - **Connected to the Atlantic Ocean** via the **Straits of Florida**, which separates **Florida (U.S.)** and **Cuba**.
  - **Linked to the Caribbean Sea** through the **Yucatán Channel**, lying between **Cuba** and the **Yucatán Peninsula (Mexico)**.
  - The Gulf is relatively **shallow along the continental shelf areas**, but its **average depth is 1,615 meters**.
- **Climate and Weather Patterns**
  - The Gulf has a **tropical to subtropical climate**.
  - It is prone to **severe weather conditions**, including:
  - **Major hurricanes**, primarily between June and November.
  - **Tornadoes and thunderstorms**, especially in coastal areas.
- **River Systems:**
  - **Mississippi River** (United States) – The largest river draining into the Gulf, carrying massive sediment loads.

- **Rio Grande** (United States-Mexico) – Another major river contributing to the Gulf's water system.

➲ **Economic Significance:** The shallow continental shelf regions of the Gulf contain vast petroleum and natural gas reserves, making it a critical region for offshore drilling.

DIEGO GARCIA

Context

Recently, fishermen were arrested near Diego Garcia island for violating the maritime boundary and engaging in poaching.

About

➲ **Geographic Overview**

- **Diego Garcia** is a **coral atoll**, the largest and southernmost member of the **Chagos Archipelago**, located in the **central Indian Ocean**.
- It is part of the **British Indian Ocean Territory (BIOT)** and makes up more than half of the territory's total land area.
- The atoll spans an area of **44 sq.km** and consists of a **V-shaped, sand-fringed cay**, about **24 km long** with a maximum width of **11 km**. The **lagoon** is open at its northern end.

➲ **Historical Background**

- **Early Discovery**: Diego Garcia was first discovered by the **Portuguese** in the early **16th century**.
- **Dependency of Mauritius**: For most of its history, the island was a dependency of **Mauritius**.
- **Separation from Mauritius**: In **1965**, Diego Garcia was separated from **Mauritius** as part of the newly formed **British Indian Ocean Territory (BIOT)**.

➲ **U.S. Military Base and Strategic Importance**

- In **1966**, the **United Kingdom** leased Diego Garcia to the **United States** to establish a major **air and naval base**.
- The base is critical as the **United States' primary geostrategic and logistical support base** in the **Indian Ocean**.
- **Forced Removal of Inhabitants**: To construct the defense installations, the native inhabitants were **forcibly removed** from the island.

➲ **Legal and Political Issues**

- **International Court of Justice (2019)**: The ICJ issued an **advisory opinion** ruling that the **decolonization of Mauritius** was unlawful, citing the **continued claims of the Chagossian people**.
- **UN General Assembly Vote (2019)**: A **non-binding** resolution passed in the UN General Assembly called on the UK to end its **"colonial administration"** of the **Chagos Archipelago** and return it to **Mauritius**.

LAKE NAIVASHA

Context

Recently, Kenya's renowned Lake Naivasha has been increasingly affected as water hyacinth spreads across vast areas, disrupting its ecosystem.

About

➲ **Location & Geography:**

- A shallow freshwater lake situated in the southern Rift Valley, Kenya.
- Formed in recent geological times, surrounded by extinct or dormant volcanoes, indicating past volcanic activity.

➲ **Hydrology:**

- **Fed by perennial rivers**, primarily the **Malewa and Gilgil Rivers**, which originate from the **Aberdare Mountains** in central Kenya.
- The lake lacks a visible outlet, making it **ecologically sensitive to fluctuations in water levels**.

➲ **Flora (Plant Life):**

- Dominated by **papyrus reeds** (**Cyperus papyrus**) along much of its shoreline, playing a vital role in maintaining the lake's ecological balance.

- Contains **submerged aquatic plants**, including **Potamogeton species**, which provide habitat for fish and invertebrates.
- Floating vegetation includes **water hyacinth (Eichhornia crassipes)**, an **invasive species** that can impact water quality and aquatic life.

➲ **Fauna (Animal Life):**
- Supports a rich biodiversity, particularly waterbirds, fish, and large mammals.
- Home to hippos, various species of tilapia fish, and a diverse community of resident and migratory birds, making it an important site for birdwatching and conservation.

➲ **Conservation Status**: Recognized as a **Ramsar site**, signifying its **global ecological importance as a wetland habitat**.

Water Hyacinth

➲ **Origin**: Native to South America but was introduced to Kenya in the 1980s, possibly through human activities such as trade and ornamental plant use.

➲ **Growth & Invasiveness**:
- Considered the most invasive aquatic plant species in the world due to its rapid growth and ability to spread uncontrollably.
- Thrives in nutrient-rich waters, particularly in areas with high levels of pollution and contaminants such as agricultural runoff, sewage, and industrial waste.

➲ **Ecological Impact**:
- Blocks sunlight penetration, disrupting photosynthesis for submerged aquatic plants, leading to a decline in oxygen levels.
- Reduces water circulation and airflow, impacting water quality and affecting aquatic life such as fish and invertebrates.
- Can create dense floating mats, which clog waterways, hinder boat navigation, and increase the risk of mosquito-borne diseases.

➲ **Economic & Environmental Concerns**:
- Negatively impacts fisheries, as the plant depletes oxygen, leading to fish kills and disrupting local livelihoods.
- Hampers hydroelectric power generation, as dense growth clogs turbines and water intake systems.

➲ **Control Measures**:
- **Manual removal and mechanical harvesting**, though labor-intensive and costly.
- **Biological control using natural predators** like the **weevil (Neochetina spp.)**, which feeds on water hyacinth and slows its spread.

KURDISTAN REGION

Context

Recently, India dispatched a shipment of medical supplies, including bronchodilators, inhalers, and ventilators, to aid the residents of Iraq's Kurdistan region.

About

➲ **Country:** Iraq (semi-autonomous region).

➲ **Capital**: Erbil.

➲ **Governorates:** Erbil, Sulaymaniyah, Dohuk, Halabja.

➲ **Neighbouring Nations:**
- Shares borders with Turkey, Iran, Syria, and Iraq-controlled territories.

➲ **Political Structure:**
- The Kurdistan Regional Government (KRG) operates autonomously.
- Tensions exist with Iraq's central government over resource control and autonomy.

➲ **Mountains:**
- Zagros Mountains dominate the landscape, forming natural borders with Iran and Turkey.

➲ **Rivers:**
- The Tigris and Greater Zab Rivers support agriculture and settlements.

6 INTERNAL SECURITY

NAVY TO COMMISSION 2 FRONTLINE WARSHIPS AND 1 SUBMARINE

Context

The Indian Navy commissioned Vagsheer (The sixth and final Scorpene-class submarine), Surat (The fourth and last stealth destroyer under Project-15B), and Nilgiri (The lead ship of the Project-17A stealth frigates) on January 15 at the Naval Dockyard in Mumbai.

Project-75 (I): Kalvari-Class Submarines

- It involves the indigenous construction of **six Kalvari-class diesel-electric attack** submarines.
- These submarines will feature modern equipment, weapons, sensors, missiles, and advanced countermeasure systems.
- A key upgrade from Project-75 is the inclusion of a fuel-cell-based **Air Independent Propulsion (AIP)** system, enhancing stealth and operational capabilities.
- The number "75" in Project-75 refers to the unique identifier for the Scorpene-class submarines.
- **Built by: Mazagon Dock Shipbuilders Limited (MDL)** under licence from Naval Group of France.
- **6 Submarines** under this Project**:** INS Kalvari, INS Khanderi, INS Karanj, INS VelaINS Vagir, and INS Vagsheer.

Visakhapatnam-Class Destroyers (P-15B)

- Also known as the P-15 Bravo class, these guided-missile destroyers.
- They are second only to aircraft carriers (like INS Vikramaditya) in terms of reach and endurance.
- An upgraded version of the Kolkata-class destroyers, they feature improved stealth, automation, and advanced ordnance.
- **Built By:** Mazagon Dock Shipbuilders Limited (MDL)
- **Four ships under this project:** INS Visakhapatnam, INS Mormugao, INS Imphal, and INS Surat.

Project-17A Frigates:

- Project-17A is the successor to the Project-17 (Shivalik-class) frigates, incorporating enhanced stealth, advanced weapons, sensors, and platform management systems.
- It aims to build a series of stealth-guided missile frigates for the Indian Navy.
- **Ships are being built by:** Mazagon Dock Shipbuilders (MDL) and Garden Reach Shipbuilders & Engineers (GRSE)
- **Designed in-house by:** the Indian Navy's Warship Design Bureau (WDB).
- A total of seven ships are under construction: four by MDL and three by GRSE.
- **7 Ships under this project:** INS Nilgiri, INS Udaygiri,INS Taragiri,INS Himgiri,INS Dunagiri,INS Vindhyagiri,and INS Mahendragiri.

INSV TARINI'S PASSAGE THROUGH POINT NEMO

Context

INSV Tarini successfully sailed past Point Nemo entirely under sail, marking a major milestone in the Navika Sagar Parikrama II mission.

Point Nemo

- Located in the South Pacific Ocean, it is the most remote location on Earth, 2,688 km from the nearest landmass.
- The closest point to the International Space Station and a decommissioning site for spacecraft.

About INSV Tarini

- Commissioned into the Indian Navy in February 2017.
- Features advanced satellite communication, navigation systems, and emergency steering, ensuring capability in harsh maritime conditions.

Navika Sagar Parikrama II

- A global circumnavigation mission by two Indian Navy officers under India's naval exploration initiative.
- **Started on October 2, 2024, from Goa**, set to last **8 months**, concluding in **May 2025**.
- Route: Goa → Lyttelton Port (New Zealand) → Point Nemo (South Pacific Ocean).

BHARAT RANBHOOMI DARSHAN INITIATIVE

Context

On the 77th Army Day (15th January 2025), the Defence Minister launched the "Bharat Ranbhoomi Darshan" Initiative.

About

- It is a joint initiative by the Ministries of Defence & Tourism and the Indian Army. It aims to promote battlefield tourism in India.

Key Features:

- Civilians can visit key battlefield locations along India's borders.
- Covers historic battle sites from the 1962, 1971, and 1999 (Kargil) wars, including:
  - **Ladakh**: Rezang-La, Pangong Tso, Galwan clash site.
  - **Arunachal Pradesh**: Kibithoo, Bum-La.
  - **Doklam** (2017 standoff site).
  - **Kargil conflict sites**: Kargil, Batalik, Drass (trekking access available).
  - **Siachen Base Camp** (highest battlefield; limited access due to acclimatization needs).
- A **dedicated website** serves as a **one-stop portal** for battlefield tourism information.
- **Operational military areas remain restricted**, but forward locations are now **open for public visits**.

Objectives:

- **Transform border areas and battlefields** into **tourist destinations**.
- Allow civilians to **experience India's military history and valour firsthand**.
- Promote **holistic development** in border areas by improving: Infrastructure, Communication, Tourism and Education.

NAG MK 2 ANTI-TANK MISSILE

Context

India has successfully carried out field evaluation trials of indigenously-developed third-generation Anti-Tank Guided Missile Nag Mk-2, at Pokhran Field Range.

About

- **Third-Generation Fire-and-Forget Technology:** Enables precision targeting with minimal operator intervention post-launch.
- **Versatile Performance:** Capable of neutralising modern armoured vehicles equipped with explosive reactive armour (ERA).
- **Platform Compatibility:** Successfully integrated with Nag Missile Carrier (NAMICA), enhancing battlefield mobility and deployment flexibility.
- **Range 7 to 10 kilometres,** an improvement over Nag Mark 1, which had a 4-kilometre range.

BHARGAVASTRA MICRO MISSILES

Context

India has successfully tested the Bhargavastra, its first micro-missile system designed to counter swarm drones.

About

- **Advanced Targeting:** The Bhargavastra system successfully hit designated virtual targets over **2.5 kilometres away,** demonstrating high precision and effectiveness.
- **Enhanced Radar Capabilities:** It can detect medium to large UAVs up to **10 kilometres** and small drones up to **6 kilometres away**, making it effective against a wide range of aerial threats.
- **Versatile Deployment:** Bhargavastra can be mounted on **mobile platforms,** enabling rapid deployment and adaptability to diverse operational terrains, including high-altitude regions.

PRALAY" MISSILE SHOWCASED AT REPUBLIC DAY PARADE 2025

Context

The Defence Research and Development Organisation (DRDO) showcased "Pralay," an indigenous short-range quasi-ballistic missile, during the Republic Day parade in New Delhi.

KEY FEATURES OF PRALAY MISSILE

Type	Short-range, quasi-ballistic surface-to-surface missile
Developer	DRDO
Purpose	Deployment along LAC and LoC
Range	150-500 km
Propulsion	Solid-propellant rocket motor
Payload	500-1,000 kg, can carry conventional warheads
Launch Platform	Mobile launcher
Speed	Reaches terminal speed of Mach 6.1
Special Feature	It can change its path midair after covering a certain distance

EXERCISE LA PEROUSE

Context

The indigenously designed guided missile destroyer INS Mumbai is participating in the fourth edition of the Multinational Exercise LA PEROUSE.

About

- The exercise is scheduled from January 16 to 24,2025 taking place in the strategic **straits of Malacca, Sunda, and Lombok,** which connect the Indian Ocean and the Pacific Ocean.
- **Participating Countries:** Australia, Canada, France, India, Indonesia, Malaysia, Singapore, the U.K., and the U.S. are involved in the exercise.

7 SCIENCE & TECHNOLOGY

GOOGLE'S QUANTUM PROCESSOR 'WILLOW'

Context

Google introduced "Willow," its latest quantum processor, marking significant progress in solving practical problems with quantum computing.

Key Features:

- Contains **105 physical qubits** for computation.
- Operates at **near absolute zero temperatures** (-273.15°C) to maintain stability.
- Improved **error correction protocols** result in enhanced reliability.
- Data qubits have a **coherence time** of about **100 microseconds**.
- Supports **lower error rates** even with a higher number of qubits.
- **Significance**: Offers faster and more reliable quantum performance, paving the way for practical applications in quantum computing.

Additional Information

- **Classical computers** process information using bits, either 0 or 1.
- **Quantum computers** use qubits, which leverage quantum superposition to represent both 0 and 1 simultaneously, making them significantly more powerful.

METHYLCOBALAMIN

Context

The Food Safety and Standards Authority of India (FSSAI) has provided guidelines for the use of methylcobalamin in food supplements and other products.

About

- **About:** A naturally occurring form of Vitamin B12 found in foods like fish, meat, eggs, and milk.
  - Essential for DNA synthesis, red blood cell production, and nerve function.
- **Functions:** Helps in cell multiplication, blood formation, and protein synthesis.
  - Supports the nervous system and neurological health.
- **Uses:** Treats diabetic neuropathy (nerve pain).
  - Manages anemia caused by Vitamin B12 deficiency.
  - Helps in neurological conditions like Alzheimer's disease.
- **Its Importance:**
  - Many Indians are deficient in B12 due to vegetarian diets.
  - Methylcobalamin is more bioavailable and effective than other forms of B12.

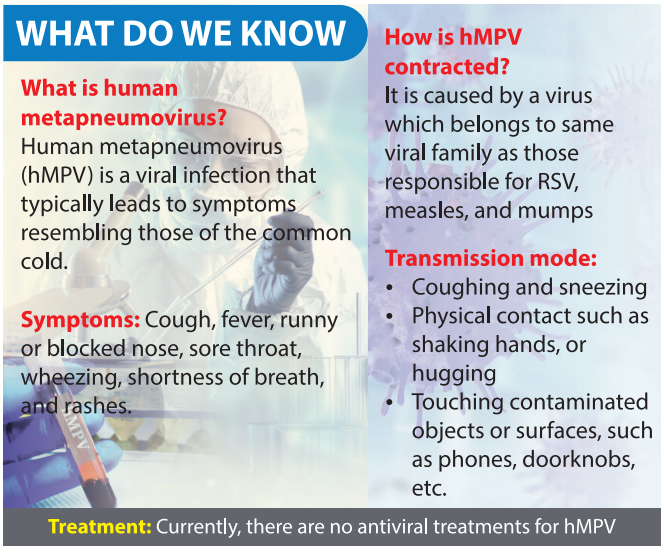
HUMAN METAPNEUMOVIRUS (HMPV)

Context

China is witnessing a sharp increase in cases of Human Metapneumovirus (HMPV), particularly affecting children under 14 years of age.

About

- **Discovery:** First discovered in **2001**, the HMPV belongs to the **Pneumoviridae family** along with respiratory syncytial virus (RSV).
- **Transmission:** Like Covid-19, HMPV is spread through **respiratory droplets** when an infected person coughs or sneezes.
- **Symptoms:** Cough, fever, and shortness of breath, with potential complications like bronchitis and pneumonia.
- **Treatment:** Currently, there is **no vaccine or specific antiviral** to treat HMPV and most people rely on over-the-counter medications to relieve fever and pain.



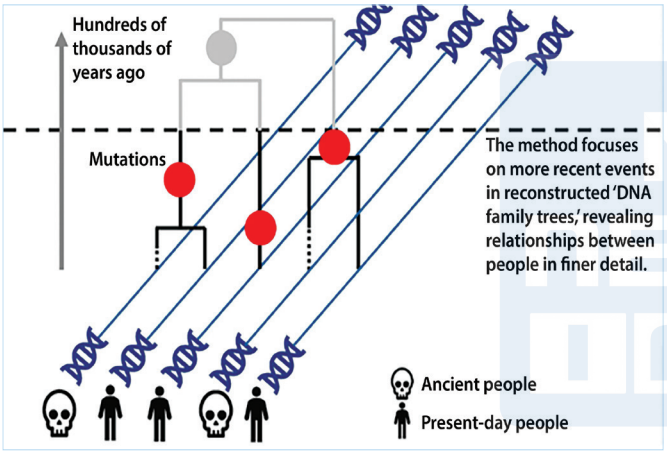
TWIGSTATS

Context

In a recent study published in Nature, researchers used Twigstats to analyze ancient genomes from Europe and reconstruct the region's high-resolution genomic history.

About

- Prehistoric human ceremonial burials, mass grave mounds, and war graves contain **ancient genetic material (aDNA)** that is crucial for understanding population dynamics and ancestry.
- aDNA analysis reveals insights into population expansion, replacement, admixture events, cultural transitions, and migrations.
- Twigstats is a **time-stratified ancestry analysis tool** designed to enhance the understanding of genetic history.



- It **utilizes statistical languages R and C++** to assist researchers in analyzing genetic data with greater precision.
- By focusing on recent mutations, Twigstats enables researchers to target specific historical periods, as these mutations offer clearer insights into events from those times.

Traditional Techniques for Genetic Analysis

- **Single Nucleotide Polymorphisms (SNPs)**
  - SNPs are **naturally occurring genetic variations** widely used for **tracing genetic histories**.
  - They require **high-quality DNA samples** and may have **limited accuracy** in distinguishing closely related populations.
- **Haplotype and Rare Variant Analysis**
  - This method examines **shared DNA segments (haplotypes) and rare genetic variants**, offering **higher resolution** than SNPs alone.
  - It provides **greater precision** in identifying genetic relationships and population structures.
- **Genealogical Tree Inference Methods**
  - These techniques are applicable to **both modern and ancient genomes**, effectively capturing **historical genetic changes**.
  - They help reconstruct **population structures and evolutionary patterns** over time.

ISRO'S CROPS EXPERIMENT

Context

A batch of cowpea seeds which were taken into orbit by an Indian Space Research Organisation (ISRO) mission has unveiled their first leaves.

About

- **CROPS payload:** The space agency sent eight cowpea seeds as part of the Compact Research Module for Orbital Plant Studies (CROPS) experiment.
- **Aim:** It is conducted by the **Vikram Sarabhai Space Centre (VSSC)** to study **plant growth in microgravity conditions.**
  - **CROPS** is part of a larger initiative to evolve ISRO's capabilities in sustaining flora in extraterrestrial environments, with future phases expected to focus on **longer-term plant growth in space.**
  - The current experiment is designed to **last between five and seven days**, demonstrating seed germination and plant development up to the **two-leaf stage.**
- **Significance:** The results could play a pivotal role in ensuring food security for astronauts on extended missions.

INDIA AI MISSION

Context

India has announced plans to develop its own Large Language Model (LLM) as part of the IndiaAI Mission.

About:

- **Implemented by:** 'IndiaAI' Independent Business Division (IBD) under **Digital India Corporation (DIC), Ministry of Electronics and Information Technology (MeitY).**
- **Public-Private Partnership (PPP) Model:** The mission will be executed through collaboration between government and private entities.

Core Components:

- **IndiaAI Compute Capacity:** Establishing a high-performance AI computing infrastructure with **10,000+ GPUs** through public-private partnerships.

- **IndiaAI Innovation Centre (IAIC):** A dedicated research institute focusing on **indigenous Large Multimodal Models (LMMs)** and domain-specific AI models.
- **IndiaAI Datasets Platform:** Strengthening public sector datasets to enhance **data-driven governance** and promote AI innovation.
- **IndiaAI Application Development Initiative:** Encouraging AI-driven solutions across sectors.
- **IndiaAI FutureSkills Program:** Expanding AI education through **graduate/postgraduate courses** and establishing **Data & AI Labs** across major and smaller cities.
- **IndiaAI Startup Financing:** Facilitating access to funding for AI startups.
- **Safe & Trusted AI:** Ensuring AI development aligns with **ethical, responsible, and secure** standards.

SMALL LANGUAGE MODELS

Context

Experts suggest that AI progress is slowing due to limited data availability. As scaling LLMs brings diminishing returns, the focus is shifting towards smaller, more specialized models for improved efficiency.

About SLMs:

- Small Language Models have **fewer parameters** compared to Large Language Models (LLMs) like **GPT-4 or Gemini Advanced**.
- They are **simpler, cost-effective, and require less computational power**, making them ideal for **specialized tasks** and **custom applications**.

COMPARISON: LLMS VS. SLMS

Feature	LLMs (Large Models)	SLMs (Small Models)
Specialization	Trained on general data	Fine-tuned for specific tasks
Computational Power	Requires high power & energy	Needs less power & energy
Speed & Latency	Slower processing	Faster & better for real-time use
Cost	Expensive to develop & deploy	More affordable for smaller budgets
Examples	GPT-4, Llama 3, Gemini Ultra, Claude 3, Phi-3	GPT-4o Mini, Llama 8B, Gemini Nano, Haiku, Phi-3 Mini

TIDAL TAIL

Context

A new ultra-diffuse galaxy has been discovered at the end of the tidal tail of galaxy NGC 3785, located 430 million light years from Earth in the Leo constellation.

About

- The tidal tail contains star-forming clumps along its length, providing valuable information about galaxy evolution and the creation of low surface brightness structures.
- **NGC 3785** is known to have the longest tidal tail discovered so far, extending for 1.27 million light years.
  - The tail is formed due to gravitational forces when two galaxies interact closely.

ATOMIC ENERGY COMMISSION

Context

Union Govt Reconstitutes Atomic Energy Commission (AEC).

About

- **Genesis:** Established in 1948 under the leadership of Dr. Homi J. Bhabha.
- **Governing Body:** The AEC is the governing body of the Department of Atomic Energy (DAE). The DAE was created in 1954 to implement the AEC's policies.
- **Key Functions:** Formulate policies for nuclear energy development.
  - Promote research and development in nuclear science.
  - Regulate nuclear activities.
  - Ensure safety and security of nuclear installations.
  - Collaborate internationally on nuclear energy.
- **Leadership:** The Prime Minister of India is the ex-officio Chairman of the AEC.

GLOBAL CYBERSECURITY OUTLOOK 2025: WORLD ECONOMIC FORUM

Context

The World Economic Forum (WEF) recently released Global Cybersecurity Outlook 2025.

About

- It is produced in collaboration with Accenture and it examines the cybersecurity trends that will affect economies and societies in the year to come.
- It explores major findings and puts a spotlight on the complexity of the cybersecurity landscape, which is intensified by geopolitical tensions, emerging technologies, supply chain interdependencies and cybercrime sophistication.

Key Issues Highlighted

- **Geopolitical Conflicts**: Wars like the Ukraine conflict have heightened cyber risks in energy, telecom, and nuclear sectors.
- **Cybersecurity Readiness**: While 66% of organizations expect AI to impact cybersecurity, only 33% have tools to manage AI-related risks, with smaller firms struggling the most.
- **Cyber Skills Gap**: There is a global shortage of 4.8 million cybersecurity professionals, and only 14% of organizations have a skilled workforce, with public-sector entities facing the biggest challenges.
- **Supply Chain Risks**: Over 50% of large firms struggle with cybersecurity due to complex supply chains, third-party software vulnerabilities, and enforcement challenges.
- **Advanced Cybercrime**: Cybercriminals are using AI for sophisticated attacks like phishing and deepfakes, affecting 42% of organizations in 2024.
- **Regulatory Hurdles**: 70% of organizations find cybersecurity regulations too complex, leading to compliance difficulties.

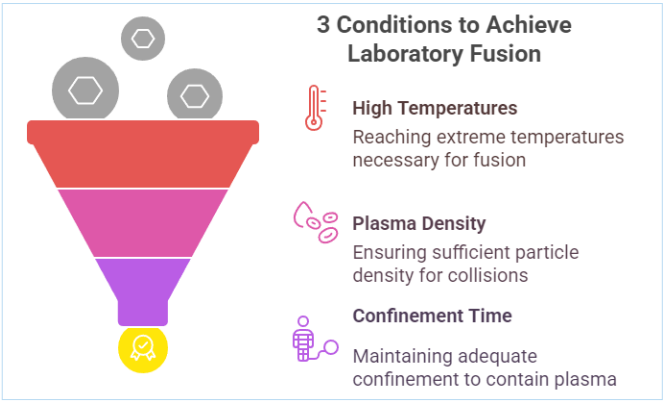
NUCLEAR FUSION: ITER (INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR)

Context

A Chinese experimental nuclear fusion reactor set a new record by maintaining its operational state for over 1,000 seconds, sparking global excitement.

Meaning of Nuclear Fusion:

- It is the process where two light atomic nuclei combine to form a heavier nucleus, releasing a massive amount of energy.
- It powers the sun and stars by fusing hydrogen into helium under extreme pressure and temperature.
- Fusion has the potential for clean and nearly limitless energy on Earth if harnessed effectively.



About Tokamak:

- A tokamak is an experimental device designed to harness fusion energy. Inside, fusion-generated energy is absorbed as heat by the vessel walls.
- Like conventional power plants, a future fusion power plant will convert this heat into steam to generate electricity using turbines and generators.

ITER

- The world's largest tokamak, built to demonstrate the feasibility of large-scale fusion energy.
- **Member Countries:** China, European Union (Euratom), India, Japan, South Korea, Russia, and the United States.
- **Collaborative Research:** Members share experimental results and intellectual property from fabrication, construction, and operations.
- **Location:** France.

GUILLAIN-BARRÉ SYNDROME (GBS)

Context

A multi-disciplinary team is assisting Maharashtra health authorities after 101 suspected GBS cases were reported.

About

- It is a **rare autoimmune disorder** where the immune system mistakenly attacks nerves outside the brain and spinal cord.
- **Affected Areas:**Impairs **muscle movement, reflexes, and sensations** like pain, touch, and temperature. **It** can occur at **any age**, but most common in **30–50-year-olds**.
- **Causes:** Often triggered by **prior infections (respiratory or stomach infections), certain vaccines, or surgeries**, leading to an immune response against healthy nerves.
- **Symptoms:** Starts with **fever and weakness**, followed by **numbness, tingling, and muscle paralysis in severe cases**.

- **Progression:** Symptoms can worsen over **hours, days, or weeks**, sometimes causing **breathing difficulties or complete paralysis**.
- **Treatment:** No cure, but **intravenous immunoglobulin (IVIG) and plasma exchange** can help reduce nerve damage.

INDIA'S FIRST INDIGENOUS SURGICAL TELE-ROBOTIC SYSTEM

Context

India's first indigenous surgical tele-robotic system, SSI Mantra, was used to perform two complex heart surgeries remotely, with the surgeon in Gurugram and the patient in Jaipur.

About

- SSI Mantra is a robotic system that performs **complex surgical procedures in Genito-Uro-Oncology cases.**
- It is developed by **SSI Ltd** and it is the only robotic system worldwide to receive **regulatory approval for telesurgery and tele-proctoring.**
- Its recent approval by the **Central Drugs Standard Control Organization (CDSCO)** paves the way for remote surgeries and medical education, allowing healthcare professionals to collaborate across distances.
- **Benefits:**
  - Reduced operation time, better precision, minimal trauma, lower blood loss, faster recovery, and reduced infection risk.
  - The technology aims to bridge geographical gaps in surgical care, making tele-surgery accessible globally.

THIRD LAUNCHPAD AT SATISH DHAWAN SPACE CENTER

Context

The Union Cabinet, chaired by Prime Minister Narendra Modi, approved the establishment of the Third Launch Pad (TLP) at the Satish Dhawan Space Centre.

About

- It refers to a platform or area used to launch rockets or other vehicles into space.
- India primarily uses **two launch pads** for space operations: the **First Launch Pad (FLP) and the Second Launch Pad (SLP)**, both located at the Satish Dhawan Space Centre in Sriharikota.

Third Launch Pad (TLP):

- TLP will be designed to support **Next Generation Launch Vehicles (NGLV)**, **Launch Vehicle Mark-3 (LVM3)** vehicles with Semi-cryogenic stages, and scaled-up NGLV configurations.
- It will involve significant industry participation and utilize ISRO's experience from earlier launch pad establishments. The facilities at the existing launch complex will be shared to maximize efficiency.

Benefits

- The project will benefit the Indian Space ecosystem by enabling higher launch frequencies and supporting human spaceflight and space exploration missions.
- It will act as a standby launch pad for the Second Launch Pad (SLP) at Sriharikota. It will enhance launch capacity for future human spaceflight missions.

Satish Dhawan Space Center

- It is located in Sriharikota, Andhra Pradesh, on a spindle-shaped island between the **Pulicat Lake and the Bay of Bengal.**
- It is the Spaceport of India, a leading centre of ISRO, and provides world-class launch infrastructure for satellite and launch vehicle missions for national and international customers.
  - **Renaming:** The centre, originally known as SHAR (Sriharikota Range), was renamed in 2002 to honor Prof. Satish Dhawan, former ISRO Chairman.
- **Operational Launch:** SDSC SHAR became operational on October 9, 1971, with the launch of 'Rohini-125', a small sounding rocket.
- **Selection of Sriharikota as the Launch Site:** The search for a launch site began in the 1960s under Vikram Sarabhai, the founder of India's space program.
- **Reasons for Choosing Sriharikota: East Coast Location** facilitates rocket launches eastward, taking advantage of Earth's rotation to increase payload capacity.
  - **Proximity to the Equator** enhances launch efficiency for satellites, especially geostationary ones.
  - **Safety:** Largely uninhabited, the area is close to the sea, allowing rockets to be launched over the ocean, minimizing risk from rocket debris.

DARK OXYGEN

Context

The recent discovery of "dark oxygen" production in the Clarion-Clipperton Zone challenges conventional understanding of oxygen generation.

About

- **Definition**: Oxygen produced deep in the ocean, thousands of feet below the surface, without sunlight or photosynthesis.
- Previously, oxygen was believed to be produced only through **photosynthesis**, requiring sunlight.
- **Oceanic plankton, algae, and bacteria** contribute to oxygen production via photosynthesis.
- Oxygen generation at such depths was considered impossible due to the absence of sunlight.
- In this case, **oxygen is not produced by plants** but through an alternative process.
- **Polymetallic nodules**, resembling lumps of coal, release oxygen through electrochemical activity.
- These nodules, composed of **manganese, iron, cobalt, nickel, copper, and lithium**, split **H_2O molecules into hydrogen and oxygen**, generating oxygen even in complete darkness.

Potential Applications

- This phenomenon could provide insights into life in extreme environments on Earth and other planets.
- Understanding "dark oxygen" production could assist in the search for extraterrestrial life by expanding the criteria for habitability.

Clarion-Clipperton Zone (CCZ)

- CCZ is a vast, mineral-rich area in the Pacific Ocean, spanning approximately 6 million square kilometers between Hawaii and Mexico.
- It contains abundant polymetallic nodules rich in manganese, nickel, copper, and cobalt, making it a key target for deep-sea mining.

INDUSTRIAL DYE RHODAMINE-B

Context

Experts highlight Rhodamine B as a hidden danger in everyday products, urging governments, industries, and individuals to prioritize health over aesthetics.

About

- The **U.S. FDA** has banned **Rhodamine B** in food due to its carcinogenic effects.
- Concerns rose over children's exposure through candies, baked goods, and processed foods.
- **Tamil Nadu** banned cotton candy in February 2024 after detecting **Rhodamine B** in it.
- The ban aims to increase awareness and ensure safer, dye-free cotton candy.

Rhodamine-B

- **Type:** Water-soluble industrial dye.
- **Appearance:** Green powder that turns fluorescent pink in water.
- **Uses:** Common in **textile, paper, leather, and paint** industries for red/pink shades.
- **Legal Status:** Globally banned in food; illegal in India under the **Food Safety Standards Act, 2006**.

Health Hazards

- **Toxic Effects:** Can cause **brain tissue damage** (cerebellum, brainstem).
- **DNA Damage:** May lead to **mutations and cancerous growths**.
- **Impact:** Can affect **motor functions** and cause other functional abnormalities.

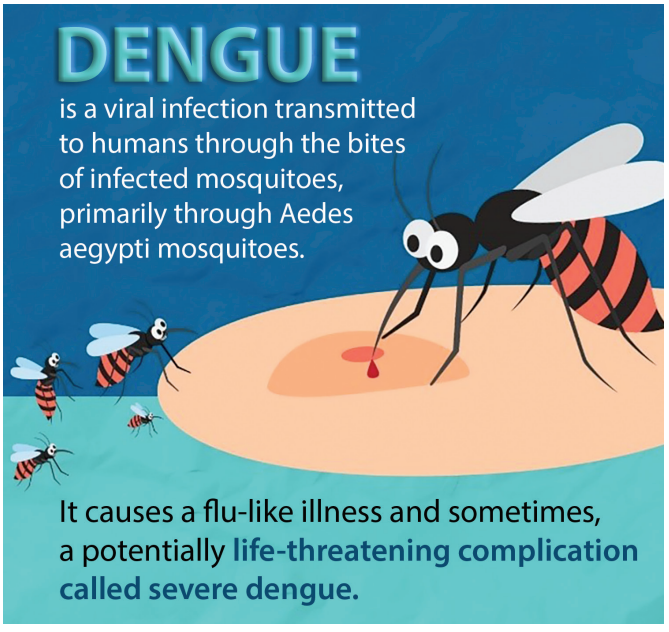
T CELL-BASED DENGUE VACCINE 'PRAHR'

Context

A research team from Gujarat Biotechnology University (GBU), Gandhinagar, has developed an innovative T cell-based vaccine for dengue 'PRAHR', which has won the 'Best Societal Impact 'Award' at the first Biothon 2025.

About:

- **PRAHR' ('Pathogen ReActive Cells Harnessing') Dengue** vaccine won the 'Best Societal Impact 'Award' at the **first Biothon 2025**.
  - The **first Biothon 2025** took place on **January 20, 2025**, at **Gujarat Biotechnology University (GBU)**.
  - It was a competition where participants worked on **new ideas to solve important social problems**.



T- Cells (Thymus-Derived Cells or T lymphocytes):

- T cells are a type of white blood cell that helps the body fight infections.
- They find and destroy infected or harmful cells, like virus-infected cells or cancer cells.
- T cells can also remember past infections, helping the body fight them faster in the future.

T-cell-based Vaccine:

- A **T cell-based vaccine** is designed to stimulate T cells to fight infections more effectively.
- Unlike traditional vaccines that mainly activate **antibodies**, T cell-based vaccines focus on training **T cells** to recognize and attack infected cells

CHINESE AI ASSISTANT DEEPSEEK

Context

The Indian establishments are assessing the implications of the AI race between US and China, shaken up by the recent release of Chinese AI assistant DeepSeek R1.

About:

- **Genesis**: DeepSeek R1 is developed by **DeepSeek**, a Chinese AI company.
- **Founder**: The company was founded by **Dr. Yu Hong**.
- **Features**:
  - Uses AI to analyze data, generate content, and answer queries.
  - Can summarize large amounts of information quickly.
  - Capable of creating reports and assisting with research tasks.
  - Offers real-time problem-solving and support for various domains.
- **Technology:**
  - DeepSeek R1 utilizes **machine learning** and **natural language processing (NLP)** technologies, allowing it to understand and generate human-like responses.
  - It also relies on large-scale data processing and neural networks to improve its accuracy and efficiency in tasks.

STARGATE PROJECT

Context

A $500 billion venture announced by Donald Trump to position the U.S. as a global leader in artificial intelligence (AI) through the development of extensive data centers and AI campuses.

Key Players Involved

- **SoftBank:** Manages the financial aspects of the project.
- **OpenAI:** Oversees operations and development.
- **Oracle:** Collaborates on computing systems.
- **Technology Partners:** Includes NVIDIA, Microsoft, and Arm.
- **Masayoshi Son:** CEO of SoftBank, serving as the project chairman.

Objectives of Stargate

- **Secure U.S. Leadership in AI Technology:** Establish the United States as a dominant force in AI development.
- **Boost National Security and Industrial Growth:** Enhance national security measures and stimulate industrial advancement through AI integration.
- **Drive Advancements in Artificial General Intelligence (AGI):** Promote the development of AGI to achieve more generalized and human-like AI capabilities.
- **Promote Innovation in Healthcare:** Facilitate faster disease diagnosis and treatment through AI-driven solutions.

ROLE OF PIEZOELECTRICITY IN STOVE LIGHTERS

Context

Recently, the author at IIT Kanpur, explained the role of piezoelectric materials in the functioning of stove lighters and their ability to create sparks.

About:

- The stove-lighter creates a small spark when clicked. This spark, though seemingly harmless, is a result of electrical charges.
  - An electric spark occurs when there is a difference in electron quantity between two points.
  - One point has a surplus of electrons (negative), and the other a deficiency (positive), causing electrons to move and create a spark.
- Lightning is essentially a large-scale electric spark caused by extreme electron imbalances between charged clouds in the sky, creating a spark through the air after breaking molecules.

TYPES OF STOVE LIGHTERS

Type	How It Works
Manual Lighters	➲ Uses a piezoelectric mechanism where pressure creates a spark. ➲ In this , Pressure causes ions to move, creating a spark that ignites the gas.

Electronic Lighters	➲ Powered by batteries to create sparks through an electric circuit. ➲ In this, a battery powers a circuit that creates high-voltage sparks to ignite the gas.
Flame-Based Lighters	➲ Releases gas from a fuel reservoir, which is ignited by a spark to create a flame.

Piezoelectricity:

- Piezoelectricity is the generation of electrical charge in a solid material by an applied mechanical stress and vice versa.
- The piezoelectric effect is exhibited in materials that develop a net electric dipole moment.
  - In such materials, the dipole density or polarization changes in response to mechanical strain resulting in a net accumulation of charge.
- **How Piezoelectric Materials Work**: In their natural state, piezoelectric materials have alternating positive and negative ions. When pressure is applied, the ions shift, creating a charge imbalance and generating a high voltage, which causes a spark.
- **Applications**: Piezoelectronics are crucial for energy conversion, sensing, and applications in energy harvesting, health monitoring, and more.
  - Lighters use piezoelectric materials that generate a surplus and deficiency of electrons when pressure is applied. These materials have a specific atomic structure that allows them to generate electric charge under pressure.

ISRO'S 100TH LAUNCH FROM SRIHARIKOTA

Context

The Indian Space Research Organisation (ISRO) launched its historic 100th launch from the Satish Dhawan Space Centre in Sriharikota.

About

- **GSLV F15 carried the NVS-02 navigation satellite** placing it into a Geosynchronous Transfer Orbit.
  - The NVS-02 is the **second satellite in the NVS series,** and **part of India's Navigation with Indian Constellation (NavIC).**
  - It is designed to **provide accurate positioning services across India.**
- **GSLV-F15** is the 17th flight of India's Geosynchronous Satellite Launch Vehicle (GSLV) and 11th flight with Indigenous Cryo stage.
- Over these **100 launches ISRO has lifted 548 satellites to orbit**.

Geosynchronous Transfer Orbit

- The GTO allows satellites to be positioned into **geostationary orbits**, where they can maintain a **fixed position relative to the Earth's surface.**
- This is crucial for **communication and weather satellites** that need to monitor specific areas continuously.

NVS Series

- These are **five second-generation NavIC satellites — NVS-01 to NVS-05** and are **planned to enhance the existing constellation.**
  - These satellites incorporate **L1 band communication**, which **broadens NavIC's compatibility and usability for diverse applications.**
- **NVS-01,** the first of the second-generation satellites, was launched in **2023.**
  - For the first time, an indigenous **atomic clock was flown in NVS-01.**
- **NVS-02** will help improve NavIC's services, which are used for navigation, precision agriculture, emergency services, fleet management, and even mobile device location services.
  - It also has a precise atomic clock called the **Rubidium Atomic Frequency Standard (RAFS)** for accurate timekeeping.

NavIC

- It is a **regional navigation satellite system** established by **Indian Space Research Organisation (ISRO).**
- NavIC was erstwhile known as **Indian Regional Navigation Satellite System (IRNSS).**
- NavIC is designed with a constellation of **7 satellites** and a network of ground stations operating 24x7.
  - **Three satellites** of the constellation are placed in **geostationary orbit** and **four satellites** are placed in **inclined geosynchronous orbit.**
- The **ground network** consists of a control centre, precise timing facility, range and integrity monitoring stations, two-way ranging stations, etc.
- **NavIC offers two services:** Standard Position Service (SPS) for **civilian users** and Restricted Service (RS) for **strategic users.**
  - It provides location accuracy better than 20 meters and timing accuracy better than 40 nanoseconds across the core service area.
- The NavIC coverage area includes **India and a region up to 1,500 km beyond the Indian boundary.**
  - NavIC SPS signals are **interoperable with the other global navigation satellite system (GNSS)** signals namely GPS, Glonass, Galileo and BeiDou.

8 SOCIETY

SEX RATIO AT BIRTH DROPPED IN HARYANA

Context

Recently, data from the Civil Registration System (CRS) revealed Haryana's sex ratio at birth fell to 910 in 2024, the lowest since 2016.

About

- **Declining Sex Ratio at Birth (SRB)**
  - The **sex ratio at birth (SRB)** in Haryana has declined to **910 females per 1,000 males in 2024**, marking an **eight-year low**.
  - This is a significant drop from the **2019 peak of 923 females per 1,000 males**, reversing previous gains.
  - In **2024**, a total of **516,402 children were born**, of which **52.35% were boys** and **47.64% were girls**, indicating a **gender imbalance** at birth.
- **Understanding the Sex Ratio and Its Importance**
  - **Sex Ratio at Birth (SRB):** The number of **female births per 1,000 male births**, a key indicator of **gender equity at birth**.
  - **Overall Sex Ratio:** The number of **females per 1,000 males** in the **entire population**, reflecting long-term **demographic trends**.
  - A declining SRB suggests **gender discrimination** at the prenatal stage, often caused by **sex-selective abortions**, which can have severe social consequences, such as:
    - **Increase in bride shortages**, leading to **trafficking and forced marriages**.
    - **Distorted demographic balance**, affecting **marriage patterns and social stability**.
- **Reasons for Past Improvement (2014-2019)**
  - **Strict Implementation of the PNDT Act (1994):**
    - The **Pre-Natal Diagnostic Techniques (PNDT) Act, 1994** was **strictly enforced**, preventing the **misuse of ultrasound technology** for **sex determination**.
    - Stringent **monitoring of clinics** and **legal action against offenders** helped reduce the practice of **female foeticide**.
  - **Government Awareness Programs:**
    - Campaigns like **'Beti Bachao, Beti Padhao'** were launched to **change societal attitudes** toward the girl child.
    - Efforts were made to **promote gender equality** through **education, financial incentives, and community engagement**.
  - **Financial and Social Support for Girls:**
    - State initiatives such as **Ladli Scheme** and **Sukanya Samriddhi Yojana** provided financial benefits to families for **educating and empowering girl children**.
    - These schemes **encouraged families** to **reconsider traditional gender preferences** and invest in the **future of their daughters**.
- **Reasons for Recent Decline (2020-2024)**
  - **Weakened Enforcement of Laws:**
    - The **monitoring of illegal sex determination tests** has **loosened**, leading to a rise in **female foeticide**.
    - Many ultrasound clinics **continue to perform illegal sex-selective abortions**, often in **rural and semi-urban areas** where enforcement is weaker.
  - **Persistent Gender Bias and Son Preference:**
    - Many families still **prefer sons over daughters** due to **cultural and economic reasons**.
    - Sons are often seen as **breadwinners** and **caretakers of aging parents**, while daughters are perceived as **financial burdens** due to **dowry traditions**.
  - **Economic and Social Factors:**
    - **Declining landholdings** have influenced family preferences. With **land inheritance shrinking**, families are opting for an **'only boy'** approach to **retain property within the family**.
    - This mindset is particularly visible among **agricultural and rural communities**, where land remains a primary asset.
  - **Limited Awareness and Social Resistance:**
    - Despite **awareness campaigns**, **deep-rooted patriarchal norms** continue to influence gender preferences.
    - The **rural population** in particular remains **resistant to change**, requiring **stronger grassroots interventions**.

Reasons behind Imbalance in the Sex Ratio in India

- **Son Meta Preference:** Sons were preferred for carrying on the family name, performing religious rites, and providing financial support in old age.
  - This led to a neglect of daughters, who were seen as a financial burden due to dowry practices.
- **Gender Discrimination:** Girls have historically faced neglect in terms of nutrition, education, and healthcare, which contributed to higher mortality rates among females.
- **Female Infanticide:** In some regions, female infants were either abandoned or killed due to their perceived lower value.
- **Sex-Selective Abortion:** Advances in medical technology, such as ultrasound, enabled the practice of sex-selective abortion, leading to a disproportionate number of male births.
- **Economic Factors:** In agrarian societies, the labor of sons was seen as more valuable for agricultural work, further reinforcing the preference for male children.

Government Initiatives to Improve Sex Ratio

- **Beti Bachao Beti Padhao (BBBP):** Launched in 2015, this campaign aims to address gender-based discrimination, promote the value of the girl child, and improve access to education for girls.
  - It also focuses on raising awareness about the importance of girls' welfare and preventing female foeticide.
- **Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act, 1994:** This law prohibits sex determination and sex-selective abortion.
  - It aims to curb the misuse of prenatal diagnostic technologies for gender-based sex selection.
- **Sukanya Samriddhi Yojana:** This is a savings scheme for the girl child, which encourages families to save for the future education and marriage of their daughters. It promotes a positive perception of girls.
- **Maternity Benefits:** The government has introduced maternity benefits through schemes like the Pradhan Mantri Matru Vandana Yojana (PMMVY), which provides financial assistance to pregnant women and lactating mothers, aiming to reduce the economic burden on families and support maternal and child health.
- **The National Health Mission (NHM):** This program focuses on improving healthcare services for women, including maternal health, to reduce the mortality rate among women and girls.
- **Awareness Campaigns and Legal Reforms:** The government conducts awareness campaigns to sensitize people about the importance of gender equality.

NATIONAL TRIBAL HEALTH CONCLAVE

Context

Recently, the National Tribal Health Conclave 2025 was held at Bharat Mandapam, New Delhi, focusing on healthcare challenges in tribal communities.

About

- **Overview of the Conclave**
  - The conclave was organized under the Dharti Aaba Janjati Gram Utkarsh Abhiyan, an initiative aimed at improving tribal welfare and development.
  - It was jointly conducted by the Ministry of Tribal Affairs (MoTA) and the Ministry of Health and Family Welfare (MoH&FW) to address healthcare challenges faced by tribal communities.
- **Key Healthcare Challenges for Tribal Communities**
  - **Geographical Remoteness**
    - Tribes often reside in **mountainous terrains, dense forests, and remote rural areas**, making it difficult to establish and maintain **healthcare facilities**.
    - The **lack of road connectivity** and **transport infrastructure** results in **delayed medical interventions** and **limited access to essential healthcare services**.
  - **Inadequate Healthcare Infrastructure:** Limited availability of hospitals, doctors, and paramedics in tribal areas leads to:
    - **Delayed diagnosis of diseases** such as tuberculosis and malnutrition.
    - **Inappropriate treatment or self-medication**, increasing health risks.
    - **Higher maternal and infant mortality rates** due to lack of prenatal and postnatal care.
  - **Language Barriers**
    - Many tribal populations speak regional dialects or indigenous languages, making it difficult for them to understand health-related information.
    - The absence of medical guidance in native languages results in poor health awareness and miscommunication with healthcare providers.
  - **Cultural Sensitivity and Traditional Practices**
    - Tribals have deep-rooted indigenous healing systems based on herbal medicine, spiritual beliefs, and traditional healers.
    - The failure of mainstream healthcare services to recognize and integrate these practices often leads to distrust and reluctance among tribal populations to seek modern medical treatments.
    - This gap results in low immunization rates, dependence on traditional medicine, and reluctance to access government health schemes.

Status of Tribes in India

- **Historical Recognition**
  - Tribes in India are among the **oldest ethnological groups**, often referred to as **"Adivasis" (original inhabitants)**.
  - The term **"Adivasi" is internationally recognized**, and the **ILO** classifies them as **"indigenous people"**.
- **India's Tribal Population**
  - India has the **second-largest tribal population in the world**, with nearly **100 million tribal people (Adivasis)**.
  - As per **Census 2011**, the tribal population constitutes **8.9% of India's total population**.
  - Tribes in India belong to various ethnic, linguistic, and cultural backgrounds, making them **one of the most diverse communities** in the country.
- **Geographical Distribution of Tribes**
  - **Northeastern States** (e.g., Nagaland, Mizoram, Arunachal Pradesh, and Meghalaya) have tribes with **distinct ethnic identities** and are **more isolated from mainstream society.**
  - More than 80% of India's tribes live in the Central and Southern Regions (e.g., Madhya Pradesh, Chhattisgarh, Jharkhand, Odisha, Maharashtra).

9 CULTURE & HISTORY

SAVITRIBAI PHULE 194TH BIRTH ANNIVERSARY

Context

Recently, Prime Minister Narendra Modi commemorated the birth anniversary of Savitribai Phule, a champion of education and social reform.

About

- **Early Life**
  - **Birth**: **Savitribai Phule** was born on **January 3, 1831**, in **Naigaon village**, Maharashtra, to a Dalit family from the Mali community.
  - **Marriage**: At the age of **10**, Savitribai was married to **Jyotirao Phule**, a prominent social reformer.
  - Jyotirao is credited with playing a significant role in her education, and he taught her at home, enabling her to overcome societal barriers against women's education.
  - **Empowerment through Education**: After her marriage, Jyotirao admitted her to a **teachers' training institution in Pune**, marking the beginning of her journey as an educator.
- **Educational Reforms**
  - **First Girls' School:**
    - In **1848**, Savitribai, alongside her husband Jyotirao, opened the first-ever **school for girls** in **Bhidewada**, Pune.
    - This was a pioneering move at a time when **education for girls** was considered a taboo, and women were not allowed to receive formal schooling.
  - **Educational Institutions for Marginalized Communities**: The couple went on to open more schools for **Dalit** (Ati-Shudras) and **Shudra** (lower castes) children, in a bid to provide access to education for all, irrespective of caste or gender.
- **Opposition and Struggles**
  - **Social Backlash**: Their efforts were met with fierce resistance from the **upper-caste** and **nationalist leaders** such as **Bal Gangadhar Tilak**, who opposed the opening of schools for girls and non-Brahmins.
    - They argued that such reforms would lead to a **loss of nationality**.
  - Savitribai was subject to extreme hostility from the **upper castes**, including **physical violence**.
  - As the headmistress of the first school, **stones, mud, and cow dung** were often thrown at her by upper-caste men.
- **Contributions to Social Reforms**
  - **Infanticide Prevention:**
    - Savitribai and Jyotirao set up the **'Balhatya Pratibandhak Griha'**, a shelter for pregnant widows who were facing discrimination and the issue of **infanticide**.
    - This initiative was prompted by a case where a Brahmin widow killed her newborn child due to societal pressures and neglect.
  - **Advocacy for Widow Remarriage**: Savitribai and Jyotirao strongly advocated for the remarriage of widows and supported inter-caste marriages.
  - **Opposition to Child Marriage, Sati, and Dowry**: They worked relentlessly to eradicate child marriage, the dowry system, and sati, which were rampant practices at the time.
  - **Child Protection**: In addition to the **Balhatya Pratibandhak Griha**, they also opened the **'Balyata Pratibandak Gruha'**, a childcare center to protect pregnant widows and rape victims.
- **Satyashodhak Samaj**
  - In **1873**, the couple established the **'Satyashodhak Samaj' (Truth-Seeker Society)**, which aimed to bring **social equity**, **equality**, and **education** to all sections of society, irrespective of caste, religion, or class.
  - **Satyashodhak Marriages**: As part of their efforts, they also started **'Satyashodhak Marriage'**, where couples pledged to promote **education and social equality** rather than following Brahmanical marriage rituals.
- **Savitribai's Defiance of Tradition**
  - **Rituals and Cultural Norms**: In **1890**, during her husband Jyotirao's funeral procession, Savitribai **defied cultural norms** by carrying the **titve (earthen pot)** and walking ahead of the procession.
  - She performed the funeral rites, a role traditionally carried out by men.
  - **Relief Work**: During the **1896 famine** and the **1897 Bubonic plague** in Maharashtra, Savitribai became actively involved in **relief efforts**, often risking her life to help the victims.
    - Unfortunately, she contracted the plague while taking a sick child to the hospital, and she died on **March 10, 1897**.
- **Literary Contributions**
  - Savitribai was not just an educator and reformer but also an accomplished **poet and writer**.
  - Her **first collection of poems**, titled **'Kavya Phule' (Poetry's Blossoms)**, was published in **1854** when she was just 23 years old.

- She also published **'Bavan Kashi Subodh Ratnakar'** in **1892**, a work that is still regarded as an important piece of literature in the context of **social reform**.
- Other writings include **'Matushri Savitribai Phlenchi Bhashane va Gaani'**, which includes her **speeches and songs**, and **letters to her husband**.

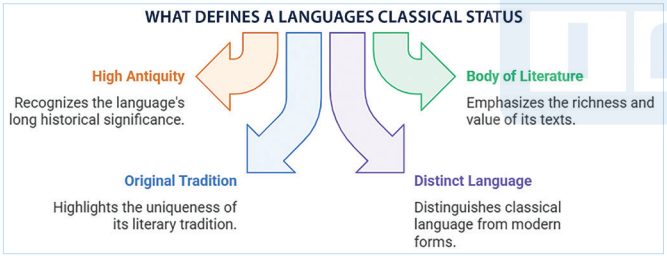
CLASSICAL STATUS TO MARATHI LANGUAGE

Context

Recently, the Union government issued an official notification confirming the grant of classical language status to Marathi, months after the announcement.

About

- **India had six classical languages** — Tamil, Sanskrit, Telugu, Kannada, Malayalam, and Odia.
  - Tamil was declared a classical language in **2004**, Sanskrit in **2005**, Kannada in **2008**, Telugu in **2008**, Malayalam in **2013**, and Odia in **2014**.
  - All the Classical Languages are listed in the **Eighth Schedule of the Constitution.**
  - Recently, the Union Cabinet has granted classical language status to **Marathi, Pali, Prakrit, Assamese, and Bengali,** increasing the classical languages to **eleven.**



- **Benefits:** The Education Ministry provides certain benefits to promote it such as:
  - two major annual international awards for scholars of eminence in the said languages,
  - a Centre of Excellence for Studies in the classical language is set up,
  - and the University Grants Commission is requested to start with a certain number of Chairs for the classical language at least in the Central Universities.

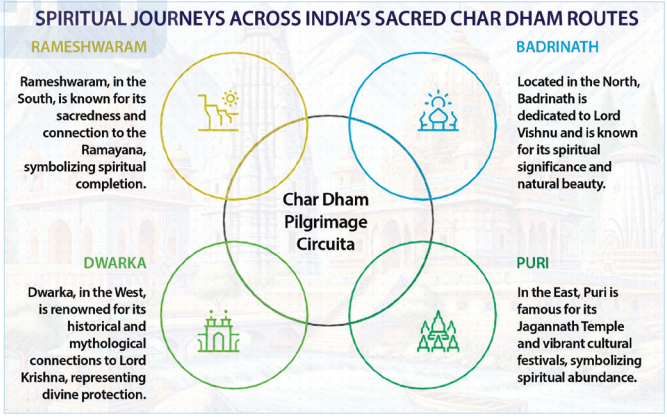
WINTER CHAR DHAM

Context

Recently, the Uttarakhand government launched the winter Char Dham circuit to promote pilgrimage tourism during the winter season.

About

- **Background:** The **Char Dham** refers to **four revered shrines** located in the **Garhwal Himalayas** in **Uttarakhand**, India.
  - **These are:**
    - Yamunotri
    - Gangotri
    - Kedarnath
    - Badrinath
  - These shrines are considered highly sacred in **Hinduism** and form an essential pilgrimage circuit.
  - Traditionally, they are visited between **May and November** when the weather conditions are suitable for travel.
- **Winter Relocation of Deities:** To ensure that devotees can continue worshiping the deities during the harsh winter months, the idols are moved to alternate locations at lower altitudes:
  - **Kedarnath**: The idol is moved to the **Omkareshwar Temple** in **Ukhimath** (Rudraprayag).
  - **Badrinath**: The idol is moved to **Pandukeshwar** in **Chamoli**.
  - **Gangotri**: The idol is moved to **Mukhba** in **Uttarkashi**.
  - **Yamunotri**: The idol is moved to **Kharsali** in **Uttarkashi**.
- **Char Dham Project:** The Char Dham Project aims to improve accessibility and the overall pilgrimage experience by enhancing the road infrastructure leading to the four holy shrines. This includes:
  - Upgrading highways
  - Expanding and maintaining roads
  - **Building additional infrastructure** to facilitate smooth travel for devotees and tourists.



- **Advaita Vedanta and its Philosophical Influence**
  - **Advaita Vedanta**, a non-dualistic school of philosophy, was popularized by **Adi Shankaracharya**. The central tenet of Advaita Vedanta is the **oneness** of the **individual soul (Atman)** and the **ultimate reality (Brahman)**.
  - According to this philosophy:
    - **Brahman** is singular, formless, and eternal.
    - **Atman**, the individual soul, is identical to Brahman, and any perceived difference between them is illusory (Maya).
    - **Moksha**, the ultimate liberation, is attained by realizing this oneness between **Atman** and **Brahman**.

- Advaita Vedanta emphasizes self-realization and the dissolution of ignorance, leading to the realization of the self as the **supreme consciousness**.

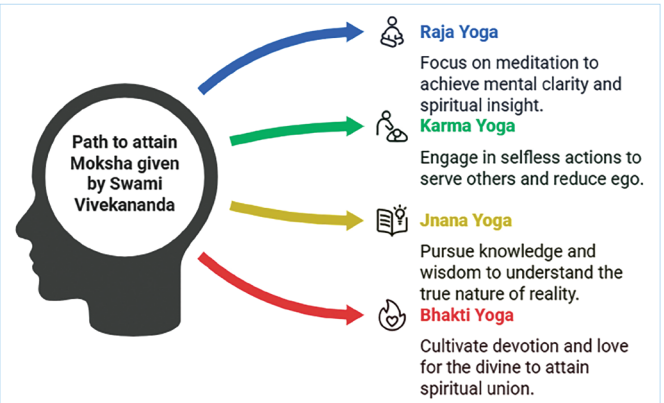
SWAMI VIVEKANANDA'S BIRTH ANNIVERSARY

Context

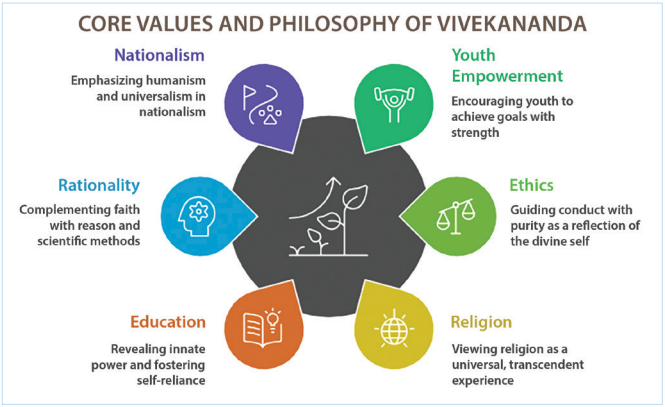
Recently, on National Youth Day (the 162nd birth anniversary of Swami Vivekananda), Prime Minister took part in the Viksit Bharat Young Leaders Dialogue 2025.

About

- **Early Life**
  - **Born as Narendra Nath Datta** on **12th January 1863** in Kolkata, Swami Vivekananda was a **monk** and the chief disciple of **Ramakrishna Paramhansa**.
  - In **1893**, at the request of Maharaja Ajit Singh of the Khetri State, he changed his name to **Vivekananda** from his earlier name, **Sachidananda**.
- **Enlightenment and Spiritual Journey**
  - In **1892**, Vivekananda swam to a rock in the **Indian Ocean** near **Kanyakumari**, which later came to be known as **Vivekananda Rock Memorial**.
  - He spent **three days and nights meditating**, which led to his **enlightenment** and deep spiritual realization.
- **Contributions**
  - **Philosophical Contributions**
    - Vivekananda introduced the world to **Indian philosophies** like **Vedanta** and **Yoga**.
    - He developed **neo-Vedanta**, a modern interpretation of Hinduism that emphasized spiritual growth and material progress.
  - **Spiritual Contributions**
    - His teachings emphasized the importance of **self-realization**, **compassion**, and **selfless service**.
    - He advocated that serving humanity (jiva) was equivalent to worshipping **Shiva**.



- **Revivalism:** Vivekananda focused on **education** as a means of **regenerating the nation**, advocating for **character-building education** aimed at creating **self-reliant** individuals.



- **Associated Organizations**
  - **Ramakrishna Mission (1897)**: Swami Vivekananda founded this organization to promote **spiritual upliftment**, **education**, and **service** to humanity.
  - **Belur Math (1899)**: He established Belur Math as his permanent abode, which became the **headquarters** of the Ramakrishna Mission.
- **International Influence**
  - In **1893**, Swami Vivekananda delivered his famous speech at the **Parliament of Religions** in **Chicago**, representing Hinduism on a global stage.
  - He also addressed the **London Hindu Association** in **1896**, further spreading his message internationally.

HARVEST FESTIVALS ACROSS INDIA

Context

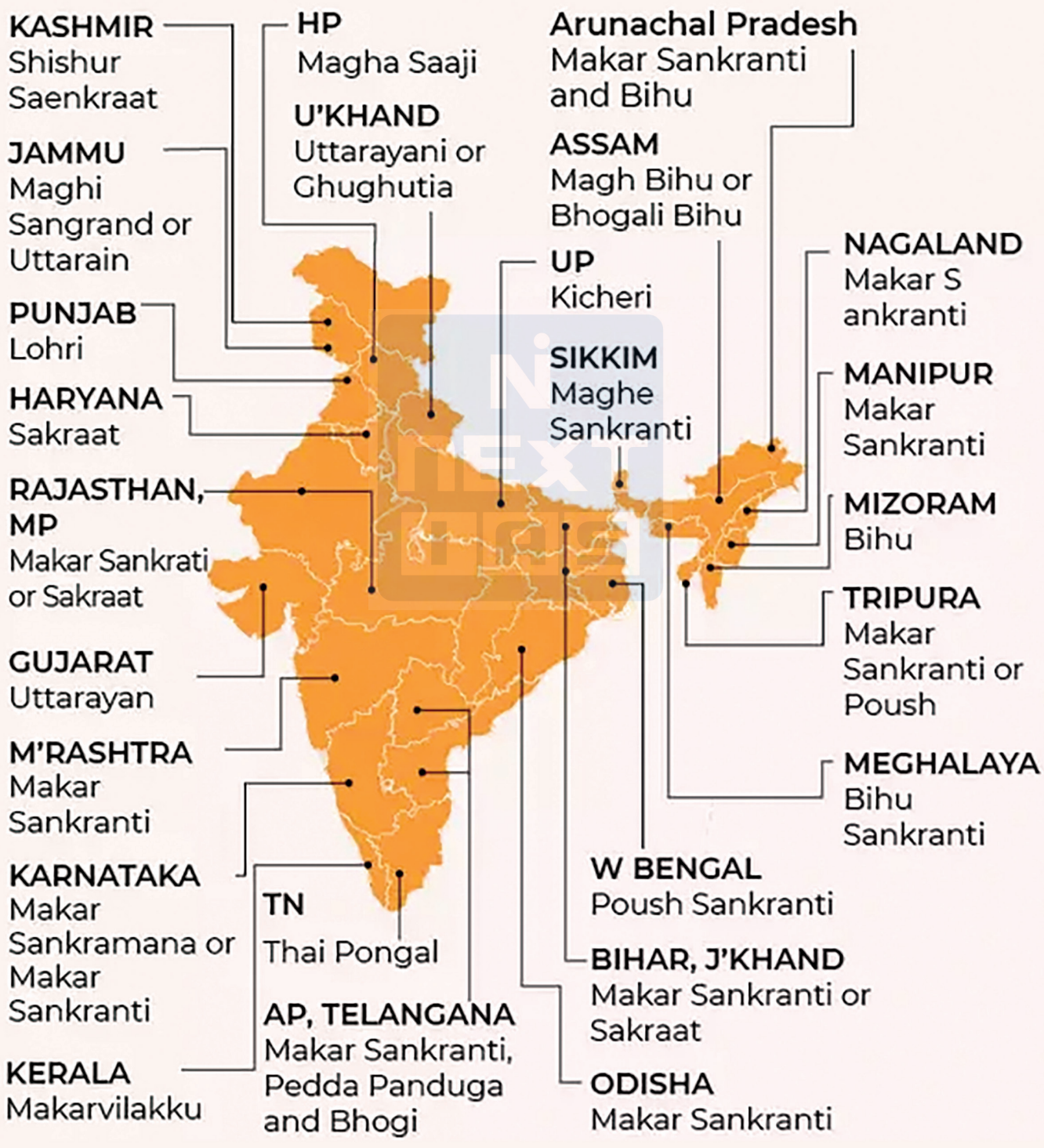
Recently, various regions of India have witnessed harvest festivals which reflect the deep and harmonious relationship between humans and nature.

About

- **Overview**
  - Across India, the end of the **harvesting season** is celebrated through various festivals, marking the transition of seasons and the harvest.
  - These festivals are known by different names in different regions, such as **Makar Sankranti**, **Pongal**, **Magh Bihu**, **Lohri**, and more.
- **Astronomical Significance**
  - **Makar Sankranti** marks the transition of the **Sun into the Capricorn (Makara)** zodiac sign, which signals the beginning of the Sun's northward journey, also called **Uttarayan**.

MAKAR SANKRANTI: MANY NAMES

Different names of winter harvest festival across India



- This shift symbolizes the **end of winter** and the **beginning of warmer months**, representing a time for **renewal** and **activity**, signaling the end of inactivity.
- Unlike festivals based on the lunar cycle, Makar Sankranti follows the **solar cycle**, meaning it is celebrated on a **fixed date, January 14th** each year, unlike other festivals that vary according to the moon's phases.

➲ **Cultural Significance:** The rituals and traditions followed during these festivals vary regionally but commonly include:
- **Bathing** in sacred rivers like the Ganga, Yamuna, Godavari, Krishna, and Cauvery, believed to purify the body and soul.
- Offering **Naivedhya** (food offerings) to **Lord Surya**, the Sun God, as an act of gratitude.
- **Charitable acts**, **Shraddha rituals** (ancestral rites), and breaking of fasts are performed.

Regional Celebrations

➲ **Assam (Magh Bihu)**
- In Assam, **Magh Bihu** marks the **harvest festival** and is also the start of the Assamese New Year.
- The festival involves traditional feasts, bonfires, and community gatherings to celebrate prosperity and the harvest.

➲ **Tamil Nadu (Pongal)**
- The four-day festival marks the **rice harvest** and is celebrated with great fervor.
- People decorate their homes with traditional **kolams** (rangoli made of rice powder) and prepare **Pongal**, a dish made from newly harvested rice, as a symbol of abundance.

➲ **Karnataka**
- Known for sharing a **sesame and jaggery mixture** (til and gur), symbolizing **harmony** and **goodwill**.
- Farmers also participate in traditional rituals like decorating cattle and making them jump over a fire pit in a ceremony called **Kicchu Haisodu**.

➲ **Punjab (Lohri):** Lohri is celebrated with **bonfires**, folk songs, and offerings such as **groundnuts** and **popcorn** to the fire, signifying the burning away of the old and the welcoming of the new harvest.

➲ **Bihar (Khichdi)**
- Known as the **Khichdi festival**, it is marked by the preparation of **khichdi** (a dish of rice and lentils) and the distribution of **sesame and jaggery ladoos** or **chikkis**.
- It celebrates the winter harvest and the start of a new season.

➲ **Rajasthan and Gujarat**
- Celebrated with **kite-flying competitions** and vibrant festivals. The **International Kite Festival** in Ahmedabad is especially renowned, where the skies are filled with colorful kites.
- In the evening, **sky lanterns** light up the night sky, adding a festive glow.

MAKARAVILAKKU FESTIVAL

Context

Recently, the Travancore Devaswom Board anticipated around 1.5 lakh pilgrims at Sannidhanam for the Makaravilakku festival.

About

➲ **Overview:**
- **Makaravilakku** is a significant **annual festival** celebrated at the **Sabarimala Temple** in **Kerala**. It takes place on the auspicious day of **Makara Sankranti**.
- The festival marks the **culmination of the annual pilgrimage season** to the temple.

➲ **Key Rituals and Traditions**
- **Thiruvabharanam Procession:** On Makaravilakku day, the sacred Thiruvabharanam (royal ornaments of Lord Ayyappa) is brought to the temple from the Pandalam Palace.
- **The Divine Light – Makarajyothi**
  - The highlight of the festival is the sighting of a **celestial light** called **"Makarajyothi"** or **"Makaravilakku"**.
  - This light is believed to be a **divine manifestation** of **Lord Ayyappa**. It is said to **appear on the horizon** of **Ponnambalamedu Hill**, near Sabarimala Temple.
- **The Ritualistic Origin of Makaravilakku**
  - The **Makaravilakku light** is not supernatural; it was historically a ritual performed by the **Malayaraya tribe** at **Ponnambalamedu Temple**.
  - Today, the **Travancore Devaswom Board** oversees the festival, ensuring the **continuation of age-old religious rituals**.
  - At the **Ponnambalamedu Temple**, a **ritualistic Aarti** is performed, where **camphor** is lit.
  - The **Makara Vilakku light**, seen **thrice** from **Sabarimala**, is the result of this **Aarti**.

➲ **Duration and Conclusion**
- The **Makaravilakku festival** extends **beyond Makara Sankranti**, lasting for **seven days**.
- It concludes with the **'Guruthi' ritual**, an **offering to the deities of the wilderness**.
- **After Guruthi**, no one remains in the **temple premises**, marking the end of the **festival period**.

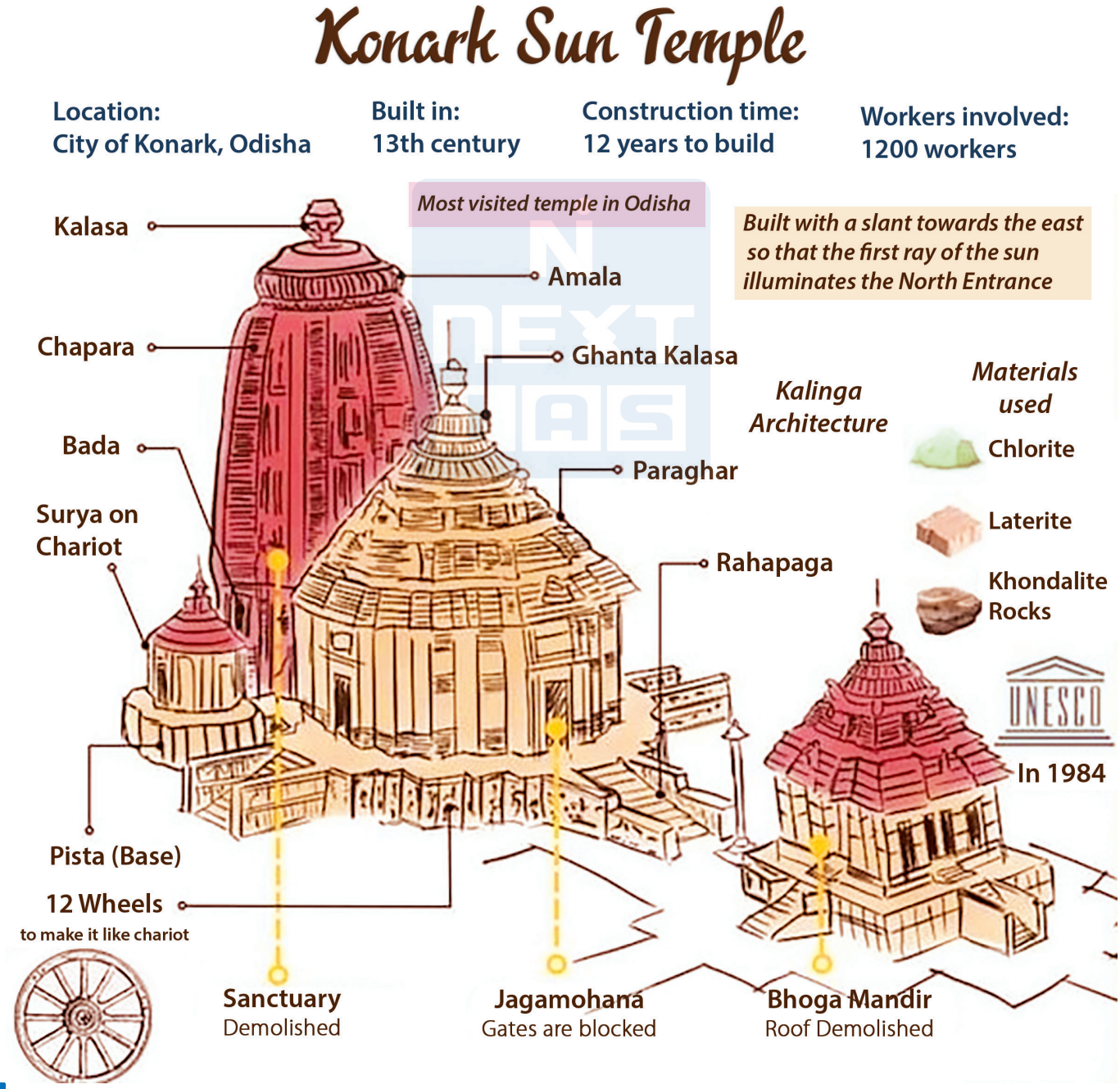
KONARK SUN TEMPLE

Context

Recently, Singapore President Tharman Shanmugaratnam visited the Sun Temple in Konark, located in Odisha's Puri district.

About

- **Location**
  - The **Konark Sun Temple** is located on the **eastern coastline of Odisha** in the **Puri district**, near the Bay of Bengal.
  - Also referred to as **Surya Devalaya**, the temple is dedicated to **Surya, the Hindu Sun God**, and is an exceptional representation of sun worship in Hindu traditions.
  - Built in **1250 CE** by **King Narasimha Deva I** of the **Eastern Ganga Dynasty** (reigned **1238–1264 CE**), it is believed to symbolize the **Sun God's chariot, showcasing celestial grandeur**.
  - The temple was declared a **UNESCO World Heritage Site in 1984**, recognizing its **architectural brilliance and historical importance**.
  - It was also known as the **Black Pagoda** by European sailors due to its **dark-colored Khondalite stone construction**, which made it a prominent landmark for navigation.
- **Architectural Features**
  - **Temple Structure and Design**
    - Designed as a **giant stone chariot** dedicated to the Sun God, the temple complex follows the **Odisha (Kalinga) school of architecture**.



- The temple **originally stood over 200 feet (61 meters) high**, but the main sanctum (deul) collapsed over time due to natural and human factors.
- The **existing temple complex**, including the **Jagamohana (audience hall) and Natya Mandapa (dance hall)**, still showcases exquisite craftsmanship.

- **Celestial Chariot Representation**
  - **24 massive stone wheels**, each **12 feet in diameter**, intricately carved with symbolic motifs representing **time and cycles of life**.
  - **Each wheel functions as a sundial**, enabling time calculations with remarkable accuracy.
  - **Six pairs of intricately sculpted stone horses** pull the chariot, symbolizing **Surya's divine journey across the heavens**.
- **Astronomical Alignment:** The temple's entrance faces east, ensuring that the first rays of the rising sun strike the temple's sanctum, signifying the divine power of the Sun God.

Themes depicted in the sculptures:

- **Gods and Goddesses**: Carvings of Surya, Vishnu, Shiva, and various celestial deities.
- **Erotic sculptures**: Similar to those at Khajuraho, they symbolize the Tantric tradition, fertility, and spiritual enlightenment.
- **Animals and mythical creatures**: Depictions of lions, elephants, and mythical figures like Makara (crocodile-elephant hybrid).
- **Dancers and musicians**: The Natya Mandapa features beautiful sculptures of apsaras (celestial dancers), portraying the importance of dance and music in religious rituals.

RATNAGIRI BUDDHIST EXCAVATION

Context

Recently, the Archaeological Survey of India (ASI) restarted excavations at the 5th–13th century Buddhist complex in Ratnagiri, Odisha, after six decades.

About

Location and Geographical Significance

- Ratnagiri is located 100 km northeast of Bhubaneswar in the Jajpur district of Odisha.
- The site is situated on a hill between the Birupa and Brahmani rivers, offering a serene and strategic location for ancient monastic settlements.
- It is one of Odisha's most famous and extensively excavated Buddhist sites, drawing researchers, historians, and tourists alike.
- Ratnagiri is part of Odisha's Diamond Triangle, along with Udaygiri and Lalitgiri, forming a trio of significant Buddhist monastic complexes.
  - The name Ratnagiri, meaning 'Hill of Jewels', signifies its past as a flourishing Buddhist center of learning and spirituality.

Buddhist Influence

- **Time Period**: Experts date Ratnagiri's origin between the **5th and 13th centuries CE**, with its peak development occurring between the **7th and 10th centuries CE**.
- The site was a major **center of Mahayana and Tantrayana (Vajrayana) Buddhism**, contributing to the **evolution of Buddhist philosophy and practices**.
- It is believed that the renowned **Chinese Buddhist traveler, Hiuen Tsang**, who visited Odisha between **638–639 CE**, may have referenced Ratnagiri in his accounts.
- The site was first **documented as a historical location in 1905**, bringing it into the spotlight for archaeological and historical research.

Archaeological Discoveries

- The Archaeological Survey of India (ASI) has conducted extensive excavations at Ratnagiri, unveiling:
  - A colossal Buddha head, believed to represent an ancient Mahayana Buddhist deity.
  - A massive palm sculpture, likely a remnant of a large Buddha statue.
  - Ancient monastic walls and intricately inscribed Buddhist relics dating back to the 8th and 9th centuries CE.
- **Monasteries and Stupas**
  - The site features **two large monasteries (Mahaviharas)** with **open courtyards, prayer halls, and living quarters** for monks.
  - A massive **stupa (relic dome)**, adorned with **intricate carvings of Bodhisattvas and Buddhist deities**, is a major highlight.
  - Numerous **small stupas and votive stupas**, built with **beautiful terracotta and stone carvings**, are scattered across the site.
- **Art and Iconography**
  - The sculptures and artwork at Ratnagiri depict **Buddhist themes, tantric deities, and celestial beings**, reflecting the site's importance in **Tantrayana Buddhism**.
  - Elaborate carvings of **Avalokiteshvara, Tara, and Manjushri**, prominent deities in Mahayana Buddhism, have been discovered.

Buddhism in Odisha and Its Maritime Links

- Buddhism flourished in Odisha during the rule of the Bhaumakara dynasty (8th–10th century CE), which patronized Buddhist institutions.
- Emperor Ashoka's invasion of Kalinga in 261 BCE and his subsequent conversion to Buddhism played a crucial role in spreading Buddhist teachings in the region.

- Odisha's strong maritime connections with Southeast Asia facilitated the spread of Buddhism to countries like Bali, Java, Sumatra, Myanmar, and Sri Lanka.
- Historians suggest that Odisha (ancient Kalinga) was a major trade hub, exporting spices (pepper, cinnamon, cardamom), silk, camphor, gold, and jewelry to Southeast Asia.
- To honor this ancient maritime history, Odisha celebrates Baliyatra, a seven-day festival commemorating Kalinga's 2,000-year-old trade and cultural ties with Southeast Asian regions.

LEZIM DANCE

Context

Recently, a Lezim dance sequence in a film has sparked controversy in Maharashtra.

About

- **Introduction**
  - **Lezim** is a **folk dance** originating from the state of **Maharashtra**, India.
  - The dance gets its name from the **Lezim**, a **unique musical instrument** featuring a **wooden stick** with **jingling cymbals** attached to it.
    - Dancers carry this instrument while performing the dance, and its rhythmic jingling adds a distinctive sound to the performance.
- **Dance Form and Structure**
  - The **Lezim dance** is both a **physical exercise** and a **folk dance**, combining **rigorous drills** with dance steps.
  - The dancers typically form **groups of twos and fours**, and sometimes they create **circular formations** while performing the steps.
  - The dance involves a lot of **energetic movement**, with dancers maintaining synchronization to the rhythmic beats of the accompanying music.
- **Accompaniment and Music**
  - Traditionally, **Lezim dance** is performed with **minimal musical accompaniment**, focusing mainly on **percussion instruments**.
  - The **dhol** or **dhalgi**, a small drum, is the primary **percussive instrument**, creating the rhythm for the dancers to follow.
  - While earlier performances often lacked any vocal songs, in modern renditions, there may be occasional **song accompaniment**, though it is not a constant feature.
  - Unlike some folk dances, there are no **wind or string instruments** involved in the performance, making it unique in its sound.
- **Role of Dholki**
  - The **dholki**, a small drum, serves as the main percussion instrument during the performance.
  - The beat of the **dholki** aligns with the rhythm of the dancers, guiding their movements and providing an energetic tempo that enhances the dance's dynamic.
- **Cultural Significance**
  - Lezim dance is often performed during festive occasions and celebrations in Maharashtra, particularly during **Ganesha festivals** and other cultural events.
  - The dance has roots in rural Maharashtra and was traditionally used to **celebrate victories, mark festive occasions, and offer reverence to deities**.

Chhatrapati Sambhaji Maharaj

- **Early Life and Education**
  - Born on **14 May 1657** at Purandar Fort, Maharashtra.
  - Son of **Shivaji Maharaj** and **Saibai**.
  - Master in multiple languages, including **Sanskrit, Persian, and Portuguese**.
  - Was trained in **warfare, administration, and diplomacy** from a young age.
- **Ascension to the Throne:** After **Shivaji's death in 1680**, a struggle for succession arose between **Sambhaji and his stepmother, Soyrabai**. In 1681, he overthrew the faction opposing him and formally became the **Chhatrapati of the Maratha Empire**.
- **Conflict with the Portuguese and Siddis:** Opposed the **Portuguese rule in Goa** and their forceful religious conversions. Fought against the **Siddis of Janjira**, who were loyal to the Mughals.
- **Capture and Execution:** Betrayed by his own **commander-in-chief, Ganoji Shirke**, and captured by Aurangzeb in **1689**. Publicly executed on **11 March 1689**, becoming a **symbol of unwavering resistance** against tyranny.
- **Recognition:** Remembered as "Dharmaveer" (Protector of Dharma) for resisting religious oppression.

LALA LAJPAT RAI

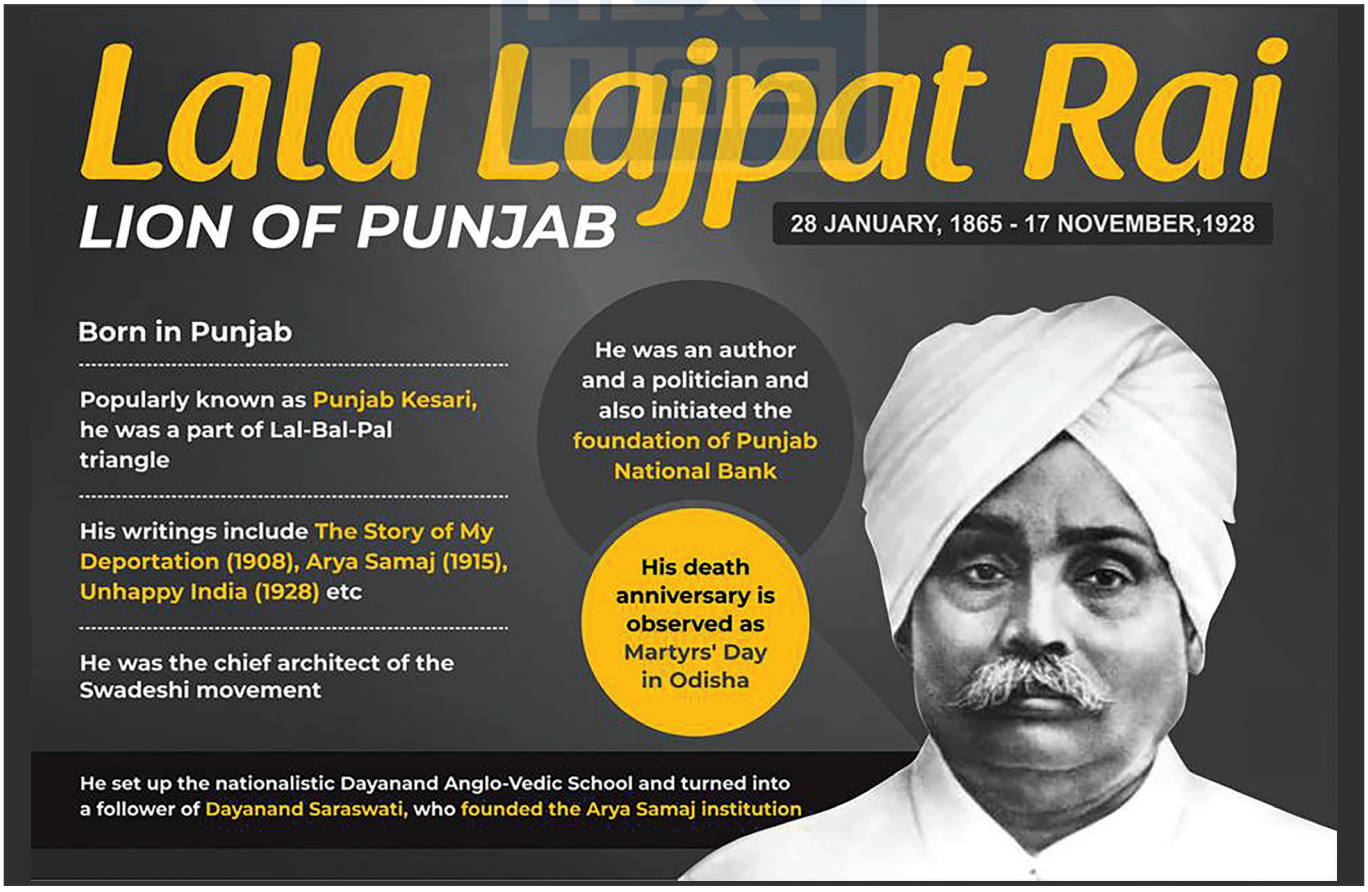
Context

India commemorates the 160th birth anniversary of Lala Lajpat Rai.

About

- **Early Life:**
  - Lala Lajpat Rai (28th January 1865 – 17th November 1928) was an Indian revolutionary politician and author, widely recognized as Punjab Kesari.

- **Contribution to the Freedom Movement**
  - He was a prominent leader of the **Indian National Congress (INC)** and a key member of the famous **Lal-Bal-Pal** trio, which included **Bal Gangadhar Tilak** and **Bipin Chandra Pal**.
  - He strongly **opposed the Partition of Bengal (1905)**, viewing it as a British strategy to divide India on religious lines.
  - In 1920, he actively **supported the Non-Cooperation Movement** led by Mahatma Gandhi, encouraging Indians to boycott British institutions and goods.
- **Role in the Home Rule Movement**
  - He founded the **Home Rule League of America in 1917**, promoting India's demand for self-governance on an international stage.
  - This movement was an extension of the **Home Rule Movement in India (1916)**, initiated by **Bal Gangadhar Tilak** and **Annie Besant**.
- **Protest Against British Repression**
  - He strongly **opposed the Rowlatt Act (1919)**, which allowed the British to arrest Indians without trial, considering it a gross violation of civil liberties.
  - He **protested against the Jallianwala Bagh massacre (1919)**, condemning the brutal killing of hundreds of unarmed civilians by General Dyer.
- **Opposition to the Simon Commission and Martyrdom:**
  - In 1928, he **led protests against the Simon Commission**, which was set up by the British to recommend constitutional reforms but had **no Indian members**.
  - During a protest in **Lahore**, he was **brutally lathi-charged by British police**, suffering severe injuries.
  - **Shortly after the incident, he famously declared:** "Every blow on my body will prove to be a nail in the coffin of British rule."
  - He succumbed to his injuries on **17th November 1928**, and his death became a rallying cry for revolutionaries like **Bhagat Singh, Chandrashekhar Azad, and Rajguru**, who later avenged his death by assassinating **British police officer J.P. Saunders**.
- **Legacy and Contributions**
  - **Educational Reforms:** He was a key figure in promoting **education for Indians**, founding institutions like:
    - **Dayanand Anglo-Vedic (DAV) College in Lahore** (1886).
    - **National College in Lahore**, where Bhagat Singh studied.
  - **Social Reforms:** He worked to uplift **women, lower castes, and the economically weaker sections**, advocating for **equal rights** and **social justice**.
  - **Journalism and Writing:**
    - He wrote extensively to **awaken nationalist consciousness** among Indians. Some of his notable works include *Young India*, *The Story of My Deportation*, and *Unhappy India*.



10 MISCELLANEOUS

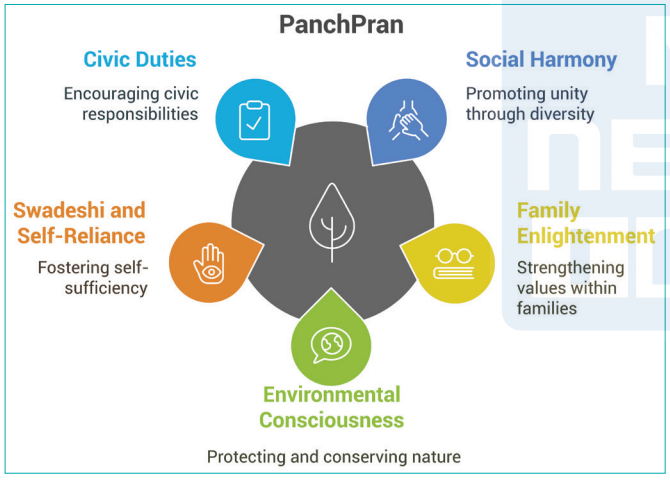
PanchPran

Context

Vice-President Jagdeep Dhankhar, at the NCC Republic Day Camp - 2025 inauguration in Delhi, outlined India's national transformation plan through the PanchPran (Five Resolutions).

PanchPran (Five Pillars of National Transformation)

- PanchPran refers to the five pledges announced by Prime Minister Narendra Modi during his Independence Day speech in 2022. These pledges aim to guide India towards a developed nation by 2047.



DR RAJAGOPALA CHIDAMBARAM

Context

Dr. Rajagopala Chidambaram, a prominent figure in India's nuclear program, passed away recently.

His Key Contributions

- He was the former Chairman of the **Atomic Energy Commission.**
- He also served as chairman of the Board of Governors of the International Atomic Energy Agency (IAEA) (1994–1995).
- **Operation Smiling Buddha:** In 1974, he was part of an operation, codenamed 'Smiling Buddha', which carried out amidst great secrecy a "peaceful nuclear test" at Pokhran, Rajasthan.
  - This made India the sixth country to test a nuclear device.
- **Operation Shakti:** In 1998, as the Chairman of the Atomic Energy Commission, he led operation shakti, which solidified India's status as a nuclear power on the global stage.
- He backed several mega science projects, including the National Supercomputing Mission, or the mission on quantum technologies.
- He was also the **longest serving Principal Scientific Advisor (PSA)** to the Indian government from 2002-2018.
- **Awards:** He was a recipient of the **Padma Shri (1975) and Padma Vibushan (1999).**

NATIONAL SPORTS AWARDS 2024

Context

The President of India recently presented the National Sports Awards 2024, honoring exceptional contributions to sports and adventure in India.

About Award Categories

- **Major Dhyan Chand Khel Ratna Award:**
  - **India's highest sporting honor**, established in **1991-92**.
  - Recognizes outstanding performance over a period of **four years**.
  - **Named After**: Major Dhyan Chand (1905–79), an iconic hockey legend who led India to **three consecutive Olympic gold medals** (1928, 1932, and 1936).
  - **2024 Awardees**:
    - **Gukesh D** (Chess)
    - **Harmanpreet Singh** (Hockey)
    - **Praveen Kumar** (Para-Athletics)
    - **Manu Bhaker** (Shooting)
- **Arjuna Award:**
  - Established in **1961** for **consistent performance** over the past **four years**.
  - **Named After**: Arjuna, the legendary warrior from the Indian epic *Mahabharata*.
  - **First Recipient**: **P.K. Banerjee** (Football).
- **Dronacharya Award:**
  - Instituted in **1985**, this is **India's highest honor for coaches**.
  - Awarded for **producing medal winners** at prestigious international events.
  - **Named After**: Dronacharya, the guru of Arjuna in *Mahabharata*.
  - **First Female Recipient**: **Renu Kohli** (Athletics).

- **Major Dhyan Chand Award for Lifetime Achievement**:
  - Instituted in **2002** for **lifetime contributions to sports**.
  - **First Recipients**:
    - **Shahuraj Birajdar** (Boxing)
    - **Ashok Diwan** (Hockey).
- **Maulana Abul Kalam Azad (MAKA) Trophy:**
  - The **oldest National Sports Award**, instituted in **1956–57**.
  - Named in honor of **Shri Abul Kalam Azad**, India's first Education Minister and a freedom fighter.
  - **First Recipient**: **Bombay University**.
- **Rashtriya Khel Protsahan Puraskar:** Instituted in **2009**, awarded to **organizations**, **corporates**, and **individuals** for significant contributions to **sports promotion and development** over the past **three years**.
- **Tenzing Norgay National Adventure Award:**
  - Introduced in **2004** to honor achievements in **adventure sports**.
  - Recognizes contributions across **land, water, air, and lifetime adventure categories**.

UNIFIED DISTRICT INFORMATION SYSTEM FOR EDUCATION PLUS (UDISE+) REPORT

Context

As per the Ministry of Education (MoE) Unified District Information System for Education Plus (UDISE+) report, the total enrolment of students has dropped by over a crore in 2023-24 as compared to the previous years.

About

- The Department of School Education & Literacy (DOSEL) has developed the "Unified District Information System for Education Plus (UDISE+)" from the reference year 2018-19.

Major Highlights

- **Decrease in No. in Enrolment:** A total of 24.8 crore students enrolled in the academic year 2023-24.In 2022-23, there was a drop of 6% as compared to 2018-19.

TOTAL SCHOOL ENROLMENT

Academic Year	Enrolment (in crore)
2023-24	24.80
2022-23	25.18
2021-22	26.52
2020-21	26.44
2019-20	26.45
2018-19	26.03
Average total enrolment for 2018-19 to 2021-22: 26.36 crore	

- The drop in 2023-24 has been seen in the primary (Classes 1 to 5), upper primary (Classes 6 to 8), and secondary (Classes 9 and 10) levels. *In contrast*, the pre-primary and higher secondary (Classes 11 and 12) levels have seen an increase in enrolment in 2023-24.
- **Gender Wise Drop in Enrolment:** In 2023-24, there was a decrease of 4.87% in enrolment of boys as compared to 2018-19. There was a decrease of 4.48% for the enrolment of girls in the same period.
- **Statewise Drop:** States like Bihar, Uttar Pradesh and Maharashtra saw among the highest drop in enrolments.
- **Infrastructure Gaps:** Only 57.2% of schools have functional computers, 53.9% have internet, and 52.3% are equipped with ramps, underscoring significant gaps in accessibility and tech readiness.

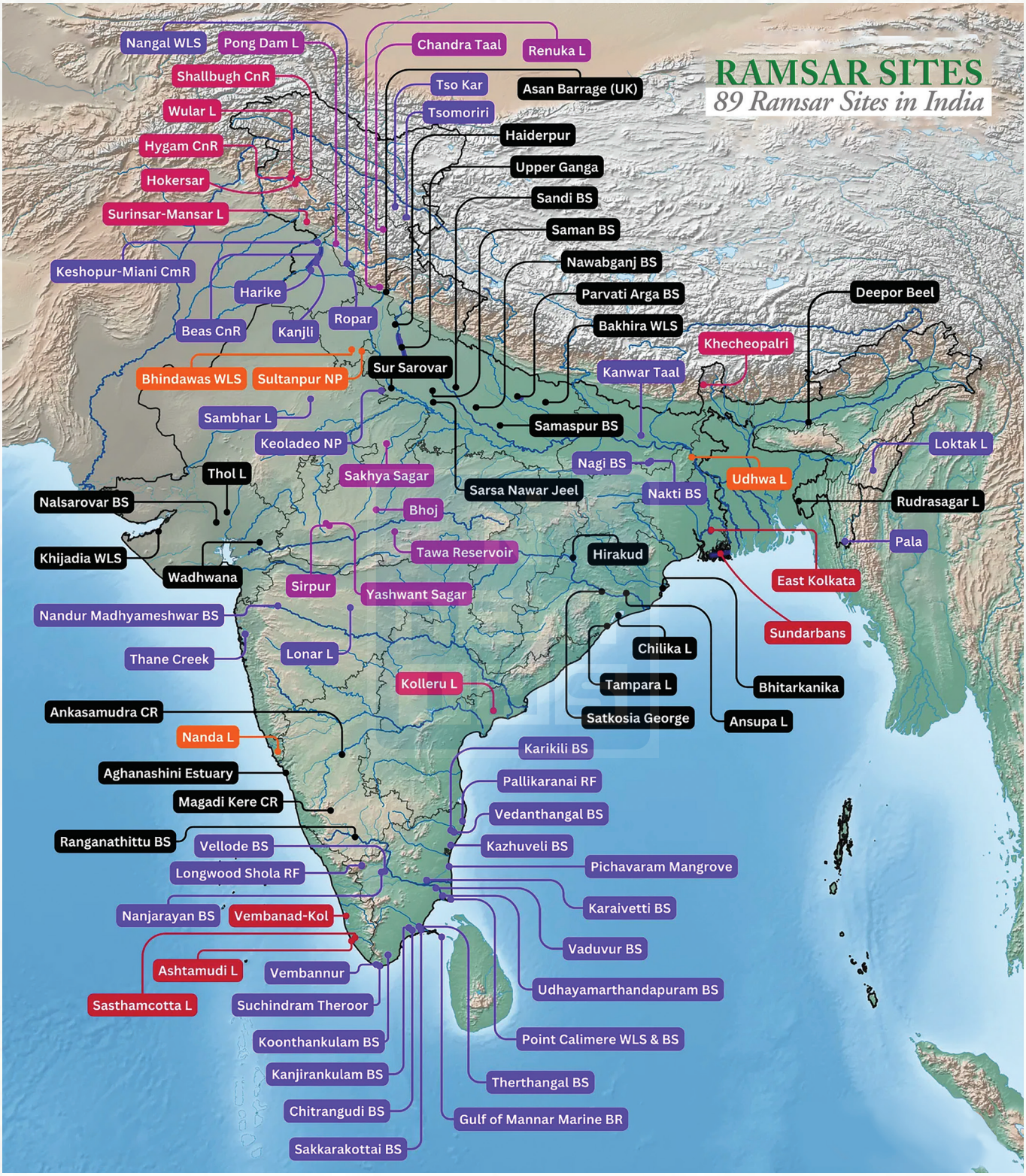
JASPRIT BUMRAH NAMED AS THE ICC MEN'S PLAYER OF THE YEAR, 2024

Context

Jasprit Bumrah and Amelia Kerr were recognized as the 2024 International Cricket Council (ICC) Players of the Year in the men's and women's categories, respectively.

LIST OF OTHER ICC AWARDS WON BY PLAYERS

Category	Winner	Country
Men's ICC Test Cricketer of the Year	Jasprit Bumrah	India
Men's ICC ODI Cricketer of the Year	Azmatullah Omarzai	Afghanistan
Men's ICC T20I Cricketer of the Year	Arshdeep Singh	India
Men's ICC Emerging Cricketer of the Year	Kamindu Mendis	Sri Lanka
Men's ICC Associate Cricketer of the Year	Gerhard Erasmus	Namibia
Women's ICC ODI Cricketer of the Year	Smriti Mandhana	India
Women's ICC T20I Cricketer of the Year	Amelia Kerr	New Zealand
Women's ICC Emerging Cricketer of the Year	Annerie Dercksen	Netherlands
Women's ICC Associate Player of the Year	Esha Oza	United Arab Emirates
ICC Umpire of the Year	Richard Illingworth	England


RAMSAR SITES
89 Ramsar Sites in India
Nangal WLS
Pong Dam L
Shallbugh CnR
Wular L
Hygam CnR
Hokersar
Surinsar-Mansar L
Keshopur-Miani CmR
Harike
Beas CnR
Kanjli
Ropar
Bhindawas WLS
Sultanpur NP
Sambhar L
Keoladeo NP
Thol L
Nalsarovar BS
Khijadia WLS
Wadhwana
Nandur Madhyameshwar BS
Thane Creek
Ankasamudra CR
Nanda L
Aghanashini Estuary
Magadi Kere CR
Ranganathittu BS
Vellode BS
Longwood Shola RF
Nanjarayan BS
Vembanad-Kol
Ashtamudi L
Sasthamcotta L
Vembannur
Suchindram Theroor
Koonthankulam BS
Kanjirankulam BS
Chitrangudi BS
Sakkarakottai BS
Chandra Taal
Renuka L
Tso Kar
Asan Barrage (UK)
Tsomoriri
Haiderpur
Upper Ganga
Sandi BS
Saman BS
Nawabganj BS
Parvati Arga BS
Bakhira WLS
Sur Sarovar
Kanwar Taal
Samaspur BS
Sakhya Sagar
Bhoj
Tawa Reservoir
Sirpur
Yashwant Sagar
Lonar L
Kolleru L
Sarsa Nawar Jeel
Nagi BS
Nakti BS
Hirakud
Chilika L
Tampara L
Satkosia George
Karikili BS
Pallikaranai RF
Vedanthangal BS
Kazhuveli BS
Pichavaram Mangrove
Karaivetti BS
Vaduvur BS
Udhayamarthandapuram BS
Point Calimere WLS & BS
Therthangal BS
Gulf of Mannar Marine BR
Deepor Beel
Khecheopalri
Udhwa L
Loktak L
Rudrasagar L
Pala
East Kolkata
Sundarbans
Bhitarkanika
Ansupa L

11 DATA RECAP

Lokpal:

- Lokpal is a **statutory body** established under the **Lokpal and Lokayuktas Act, 2013.**
- **Composition:**
  - **Chairperson:** A former Chief Justice of India, Supreme Court Judge, or a person with integrity and expertise.
  - **Members:** Up to 8 members, with:
  - At least 50% judicial members.
    - **50% from underrepresented groups** (SC/ST/OBC, minorities, and women).
- **Appointment & Tenure:**
  - **Appointing Authority:** President of India, based on recommendations from a **Selection Committee** consisting of: the Prime Minister (Chairman), Speaker of Lok Sabha, Leader of Opposition in Lok Sabha and Chief Justice of India or an eminent jurist
  - **Tenure:** 5 years or until the age of **70 years**, whichever is earlier.

Indian Diaspora:

- As of May 2024, there were around 35.42 million people of Indian origin living outside of India, making it the world's largest diaspora.
- This includes around 15.85 million non-resident Indians (NRIs) and 19.57 million people of Indian origin (PIOs).

Global Estimates on International Migrant Workers (ILO Report)

- **Global Labor Force Contribution (2022):** International migrants made up **4.7% (167.7 million)** of the global labor force. The migrant workforce increased by **30 million since 2013,** indicating rising labor mobility.
- **Employment Sectors:**
  - **Services Sector: 68.4%** of international migrants work in services, higher than non-migrants.
    - **Women: 80.7%** engaged in domestic work and caregiving.
    - **Men: 60.8%** in transportation, hospitality, and IT services.
  - **Gender Representation in Employment:**
    - **Men: 4.7%** of total global male employment, mainly in construction, transport, and finance.
    - **Women: 4.4%** of total global female employment, mainly in healthcare, education, and domestic work.

Annual Groundwater Quality Report, 2024

- **Essential Resource:** Groundwater Supplies **85%** of rural drinking water needs. Meets **62%** of irrigation requirements.
- **Contamination & Regional Variations:**
  - **Nitrate (20%):** From fertilizer runoff; high in Rajasthan, Tamil Nadu, Maharashtra.
  - **Fluoride (9.04%):** Found in Rajasthan, Haryana, Karnataka, Andhra Pradesh, Telangana; causes health issues.
  - **Arsenic (3.55%):** Severe in Ganga-Brahmaputra floodplains (West Bengal, Bihar, Assam, Uttar Pradesh, etc.).
  - **Uranium:** High in Rajasthan (42%) and Punjab (30%) of unsafe samples.

State Public Service Commission:

- PSCs are governed by **Articles 315-323 under Part XIV** of the Indian Constitution. These articles define the structure, powers, and functions of Public Service Commissions at both the Union and State levels.
- **Appointing Authority:** Governor of the State (Article 316).
- **Tenure:** 6 years or until the age of 62 years, whichever is earlier.

ASER Report:

- **Improvement in Learning Outcomes:**
  - **Class 3 students** in government schools reading Class 2-level texts increased to 23.4% (from 16.3% in 2022).
  - **Challenges remain:**
    - ***Class 3:*** Two-thirds cannot solve subtraction problems.
    - ***Class 5:*** Only 30.7% can solve division problems.
    - ***Class 8:*** 45.8% can perform basic arithmetic.
- **Enrolment Trends:**
  - **Overall school enrolment (ages 6-14): 98.1%,** nearly back to pre-pandemic levels.
  - **Government school enrolment:** Declined from 72.9% (2022) to 66.8% (2024) after a pandemic-driven rise.
  - **Underage children in Class 1:** Dropped to 16.7%, the lowest ever recorded.
- **Digital Literacy:**
  - **Smartphone ownership** in rural households increased to 84% in 2024.
  - **Among teenagers:** 57% use smartphones for education, but 76% use them for social media.

Decline in India's Poverty Rate (2011-12 to 2023-24): SBI Report

- **Significant Poverty Reduction:** Overall poverty dropped from 22% (2011-12) to below 5% (2023-24).
- **Urban vs Rural Poverty Decline:**
  - **Rural poverty:** 25.7% (2011-12) ₹ 4.86% (2023-24).
  - **Urban poverty:** 4.6% (2022-23) ₹ 4.09% (2023-24).

Test Yourself

Objective Questions

Visit: www.nextias.com for monthly compilation of Current based MCQs

Mains Questions

GS PAPER-I

1. Analyze the architectural innovations of the Konark Sun Temple, focusing on its structural design and artistic intricacies. ***(10 Marks, 150 Words)***
2. Analyze Swami Vivekananda's philosophical contributions, his role in cultural resurgence, and their impact on modern Indian nationalism. ***(15 Marks, 250 Words)***
3. Discuss the contributions of Rani Velu Nachiyar to India's resistance against colonial rule and her legacy in the freedom struggle. ***(10 Marks, 150 Words)***
4. Analyze the impact of Deccan Volcanism on India's geological evolution, mass extinctions, and its role in past climate changes. ***(15 Marks, 250 Words)***
5. Critically analyze the persistence of manual scavenging in India despite legal prohibitions and evaluate the effectiveness of rehabilitation measures. ***(10 Marks, 150 Words)***
6. Critically examine the economic, social, and political implications of rising international migration trends on both origin and destination countries. ***(15 Marks, 250 Words)***

GS PAPER-II

7. Critically discuss the role of NITI Aayog in fostering cooperative federalism and driving policy innovation in India. ***(15 Marks, 250 Words)***
8. Analyze the effectiveness of the Lokpal in tackling corruption and ensuring accountability in India's governance framework. ***(10 Marks, 150 Words)***
9. Examine the key disputes under the Indus Water Treaty and their implications for India-Pakistan relations. ***(15 Marks, 250 Words)***
10. Critically analyze the evolving role of the Indian diaspora in influencing India's strategic interests amid shifting global geopolitical dynamics. ***(10 Marks, 150 Words)***
11. Assess the strategic significance of India-Indonesia relations in the Indo-Pacific region amid emerging geopolitical and economic challenges. ***(15 Marks, 250 Words)***

GS PAPER-III

12. Analyze the key causes and economic implications of the depreciation of the Indian Rupee in the global financial landscape. ***(15 Marks, 250 Words)***
13. Analyze the differences between the Wholesale Price Index (WPI) and Producer Price Index (PPI) and their implications for inflation measurement in India. ***(10 Marks, 150 Words)***
14. Critically examine the structural challenges in India's rubber industry, assessing its sustainability, global competitiveness, and policy interventions for self-reliance. ***(10 Marks, 150 Words)***
15. Critically evaluate the concept of Green GDP and its relevance in measuring sustainable economic growth in India. ***(15 Marks, 250 Words)***
16. Assess the factors affecting groundwater quality in India and its implications for public health, agriculture, and environmental sustainability. ***(10 Marks, 150 Words)***
17. Critically analyze the issue of pesticide poisoning in India and evaluate the effectiveness of existing regulations in ensuring public safety. ***(15 Marks, 250 Words)***
18. Evaluate the role of the India Meteorological Department (IMD) in disaster preparedness, climate forecasting, and its impact on various sectors. ***(15 Marks, 250 Words)***
19. Critically examine the objectives, potential benefits, and ethical concerns associated with the Genome India Project. ***(10 Marks, 150 Words)***
20. Critically examine the global AI race, its implications for technological sovereignty and ethical challenges in governance. ***(10 Marks, 150 Words)***