NEXT IAS
THE CRUX

March Issue; 2025

© Copyright 2025

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

Contents

Cover Story

Feature Articles

Contents | In-Shorts

NEXT IAS
BIG LEARNINGS MADE EASY

GENERAL STUDIES : FIRST STEP

Step-up for CSE after Class XII

This course is especially designed for undergraduate college going UPSC aspirants.

Key Features

✔ **NCERT Based Curriculum:**
NCERT is a proven best resource to start building one's base in General Studies. It not only offers in-depth knowledge in easy language and helps in building fundamental concepts but is also closely aligned with syllabus of many competitive examinations.

✔ **LIVE ONLINE Mode:**
Classes will be conducted on weekends in Live-Online mode keeping in mind the requirements of college going students. Moreover, extra doubt clearing sessions and tests will be conducted at regular intervals during the course.

✔ **High Quality Teaching:**
Lectures will be delivered by experienced and knowledgeable faculties. Lecture plan is designed to cover the basics from scratch in order to cater the requirements of fresher students.

✔ **Focus on Concepts and Analytical Ability:**
Conceptual clarity and analytical ability is an essential condition for laying a strong foundation for success in Civil Services Examination. FIRST STEP course is designed to clear concepts and develop analytical ability of the students for the basic subjects which are part of Civil Services Exam.

✔ **Answer Writing & Strategy Sessions:**
Good answer writing skill is essential to clear Mains (Stage-II) of CSE. FIRST STEP course aims to improve answer writing skills through specially designed sessions by CSE qualified rank holders at periodic intervals.

✔ **Provision of Academic Coach:**
The course provides facility of interaction with highly qualified Academic Coaches for personalized and dedicated academic support, mentor-ship and guidance.

✔ **Performance Assessment:**
Students will be assessed regularly through objective and subjective questions based tests at regular intervals for performance evaluation and continuous improvement.

✔ **Exclusive Study Materials.**
High quality lectures will be supplemented with latest and updated study materials, made exclusively for FIRST STEP course students.

Subjects Covered: History, Geography, Economy, Polity, General Science & Technology, Environment & General Knowledge

Course Duration: 12 Months • Classes 4 days in a week (Tuesday, Wednesday, Saturday & Sunday)

Admission Open • For more details, visit : **www.nextias.com**

75 YEARS OF INDIA-CHINA DIPLOMATIC RELATIONS

Marking 75 years of diplomatic relations, the India–China partnership remains one of the world's most consequential and multifaceted bilateral engagements, characterized by strategic complexity and profound civilisational linkages.

Significance of India-China Relations

- **Historical Foundations and Diplomatic Initiatives:** India and China formally established diplomatic ties in 1950, setting the stage for bilateral engagement rooted in the Panchsheel Agreement (1954).
  - This foundational framework emphasized **mutual respect for sovereignty**, **non-aggression**, **non-interference**, and **peaceful coexistence**—principles that continue to shape interactions, despite recurrent tensions.
- **Multilateral Engagement:** India and China collaborate on global platforms such as **BRICS**, **SCO**, **G-20**, and **AIIB**, despite bilateral tensions. In **2024**, both nations emphasized **Global South solidarity** and **multipolarity** at SCO summits, highlighting shared interests in **global governance reform**.
  - Both also participate actively in **climate diplomacy**, **global health**, **disaster relief**, and **development financing**, including joint efforts in **UN peacekeeping** and **pandemic response mechanisms**.
- **Economic Interdependence:** China remains one of India's **largest trading partners**, with **bilateral trade reaching USD 118.4 billion in 2023–24**.
  - Despite a **significant trade imbalance**, India continues to import critical goods such as **telecom equipment**, **Active Pharmaceutical Ingredients (APIs)**, and **electronic components**, underscoring deep economic interdependence.
  - India's exports to China are primarily **resource-based**, including **iron ore**, **organic chemicals**, and **raw materials**, while Chinese exports dominate **high-value manufacturing**.
  - This asymmetry reflects India's dependency and underlines the need for **diversification and value-addition** in its export basket.
- **Investment and Technology Ecosystem:** Chinese investments have played a notable role in **India's startup and unicorn ecosystem**.
  - As of 2020, **18 Indian unicorns had received over USD 3.5 billion** in Chinese funding. Despite recent curbs, **supply chain linkages** in **electronics**, **EV batteries**, and **software services** remain significant.
- **Cultural and Civilizational Engagement:** Civilizational exchanges date back centuries, as seen through historic figures like **Xuanzang** and **Bodhidharma**. Modern-day cultural diplomacy includes **language exchanges**, **academic collaborations**, and growing Chinese interest in **Ayurveda**, **Yoga**, and **Indian classical arts**.
  - In April 2025, **Visva-Bharati University** hosted a landmark seminar commemorating **100 years since Rabindranath Tagore's visit to China**, further deepening cultural bonds.

- The **resumption of direct flights** and **visa facilitation** has enhanced **people-to-people ties**, promoting tourism and educational exchanges.
- **Defence Dialogue and Border Management:** Despite a volatile border situation, both countries continue communication through mechanisms like **Corps Commander-level meetings and Working Mechanism for Consultation and Coordination (WMCC).**
  - The **33rd WMCC meeting in March 2025** led to consensus on preparations for the next **Special Representatives' dialogue** and the enhancement of **border management protocols**.
  - Breakthroughs in **Galwan, Gogra, and Pangong Tso** through **no-patrol zones** and **troop disengagement** mark tentative progress, though friction remains in
- **Connectivity and Strategic Initiative:** India has consistently declined to join China's **Belt and Road Initiative (BRI)**, opposing the **China-Pakistan Economic Corridor (CPEC)** through **Pakistan-occupied Kashmir (PoK)** on grounds of sovereignty.
- **Hydro Diplomacy:** China resumed the sharing of **hydrological data** on the **Brahmaputra** and **Sutlej** post-2024 negotiations. While no formal **water-sharing treaty** exists, current arrangements ensure **early warning systems** and seasonal flood forecasting.

Major Challenges in India-China Relations

- **Persistent Border Disputes:** The **3,488-km-long Line of Actual Control (LAC)** remains **undefined and contested**, leading to frequent stand-offs.
  - Key challenges includes **China's occupation of 38,000 sq km in Aksai Chin, Claims over 90,000 sq km in Arunachal Pradesh (termed South Tibet), Construction of dual-use "border villages"**, seen as a **salami-slicing tactic and absence of mutually agreed maps**, complicating patrolling and verification.
  - China aims to realise the goal of the **Five-Finger Policy of China**, (attributed to Mao Zedong) which envisions **Tibet as the palm** and **Ladakh, Nepal, Sikkim, Bhutan, and Arunachal Pradesh as its five fingers**. It reflects China's strategic intent to extend influence or control over these Himalayan regions by claiming them as naturally linked to Tibet.
  - **Trust Deficit Post-Galwan:** The **2020 Galwan Valley clash**, which led to the death of **20 Indian soldiers**, marked a turning point, triggering deep **strategic mistrust**. While some **disengagements** have occurred, **normalization of relations remains elusive** due to unresolved grievances.
- **Trade Imbalances and Economic Vulnerabilities:** India's trade deficit with China reached **USD 85 billion in 2023–24**, indicating continued dependence on **high-value imports** like **Semiconductors, Solar panels and Consumer electronics.**

- India's **anti-dumping measures** are often undermined by **Chinese rerouting via ASEAN nations**, exploiting existing FTAs.

➲ **China-Pakistan Strategic Nexus:** China's **CPEC project** through PoK and its **military-technological collaboration** with Pakistan challenge India's sovereignty and regional posture. This trilateral axis complicates India's efforts in regional security and diplomatic balancing.

➲ **Technological and Digital Dependence:** Despite efforts at **technological decoupling**, India's **smartphone market** remains **75% dominated by Chinese brands**. Critical sectors like **EVs**, **telecom**, and **battery storage** are heavily reliant on **Chinese imports**.

- India's **semiconductor mission** faces roadblocks due to limited domestic capabilities and overreliance on Chinese equipment.

➲ **Cybersecurity and Digital Sovereignty:** China-linked groups such as **ChamelGang** have allegedly targeted **Indian healthcare**, **power grids**, and **government infrastructure**.

➲ **Hydro Hegemony of China:** China's **upstream control** of rivers like the **Brahmaputra** without consultation threatens **India's water security**.

- Construction of **large-scale mega-dam projects** like **Medog** and **Zangmu** raise strategic concerns for downstream India and without transboundary dialogue, it violates principles of **equitable and reasonable use**.

- China many times showed reluctance to share the data related to cross border rivers.

➲ **Maritime Influence and Strategic Competition:** China's growing footprint in **South Asia** through the **String of Pearls** and **Maritime Silk Road**—especially in **Sri Lanka**, **Maldives**, and **Myanmar**—has triggered **maritime rivalry** in the Indian Ocean Region.

➲ **Diplomatic Roadblocks at Global Forums:** China has repeatedly **blocked India's entry into the Nuclear Suppliers Group (NSG)**, **Opposed India's bid for a permanent UNSC seat and Shielded Pakistan-based terrorists in UNSC sanctions committees.**

- These actions reflect Beijing's efforts to **curtail India's rise on the global stage**.

Steps Taken By India To Counter China

Strategic and Maritime Countermeasures:

- **SAGAR Doctrine (Security and Growth for All in the Region):** India's outreach to Indian Ocean nations to counter China's **String of Pearls**.
- **Indo-Pacific Partnerships:** Strengthened ties with **ASEAN**, **France**, and **Africa** under the **Indo-Pacific Oceans Initiative (IPOI)**.
- **India-Middle East-Europe Economic Corridor (IMEC):** Projected as a **counter to China's BRI**, promoting secure, rule-based connectivity from India to Europe.
- **Heart of Diamond Strategy:** India's positioning in the **"Heart of the Diamond"** between **Straits of Hormuz, Malacca, Sunda, and Lombok** enhances maritime leverage. This strategy aims to secure critical sea lanes and counter China's **String of Pearls** and **Maritime Silk Road**.
- **QUAD (Quadrilateral Security Dialogue):** Strategic partnership with the **US, Japan, and Australia** to promote a **free, open, and rules-based Indo-Pacific**.
  - Cooperation in **maritime security**, **cybersecurity**, **emerging technologies**, and **critical infrastructure resilience**. Participation in **Malabar Naval Exercise** and **joint humanitarian assistance and disaster relief drills**.

Military Measures:

- **Border Infrastructure Modernization:** Accelerated construction of **strategic roads**, **bridges**, and **tunnels** (e.g., **Atal Tunnel, Darbuk-Shyok-DBO road**) along the **LAC**. Development of **forward airbases** in Ladakh, Arunachal Pradesh, and Sikkim.
- **Enhanced Troop Readiness:** Formation of **Integrated Battle Groups (IBGs)** for faster mobilization. Upgradation of mountain corps and deployment of **Rafale jets** and **Apache helicopters** near the eastern theatre.

- **Intelligence, Surveillance, and Reconnaissance (ISR) Capabilities:** Use of **drones**, **satellites**, and **real-time intelligence** to monitor border activity.

Economic and Trade Measures:

- **FDI Restrictions:** In 2020, India made **government approval mandatory** for FDI from land-border-sharing countries, mainly targeting Chinese investments.
- **App and Technology Bans:** Banned over **300 Chinese apps** (e.g., TikTok, ShareIt) citing national security concerns.
- **Scrutiny of Chinese Imports:** Imposed **anti-dumping duties** and tightened **quality standards** for toys, electronics, telecom, and solar equipment.
- **Promotion of Aatmanirbhar Bharat:** Incentives under **PLI schemes** to boost domestic production of **semiconductors**, **pharma** and **electronics** to reduce reliance on Chinese supply chains.

Diplomatic and Multilateral Engagements:

- **Assertive Diplomacy at Global Forums:** Actively opposes **China's BRI**, especially **CPEC** in **Pakistan-occupied Kashmir**. Highlights violations of **sovereignty** and **international norms** in global forums like **UN**, **G-20**, and **SCO**.
- **Global South Solidarity:** Leading voice for the **Global South**, often countering China's influence in Africa and Asia.
- **UN and Security Council:** Actively counters China's attempts to block India's entry into **NSG** and permanent **UNSC membership**.

Technological Measures:

- **5G and Telecom Regulation:** Exclusion of **Huawei** and **ZTE** from India's 5G rollout on security grounds.
- **Semiconductor and Electronics Ecosystem:** Launch of **India Semiconductor Mission** to develop indigenous chip manufacturing.

WAY FORWARD

- **Strategic Realism (Maintain Robust Deterrence Posture):** Realist theory in international relations emphasizes the role of **power and national interest** in an anarchic global order. India must continue to build **credible deterrence** through **modernizing armed forces**, especially in the Eastern and Northern Commands.
  - Expanding **space-based ISR**, cyber capabilities, and **defensive infrastructure** along the LAC.
  - Strengthening the **tri-service theater commands** for integrated warfighting.
- **Multi-Alignment over Non-Alignment:** Move from **non-alignment to multi-alignment**, deepening **strategic partnerships with the US, France, Japan, Australia**, while retaining autonomy. Use platforms like **QUAD**, **Indo Pacific Economic Framework**, and **ASEAN+1** to shape regional norms and contain unilateral Chinese assertions.
- **Smart Power Diplomacy and Narrative Building:** Leverage **India's civilisational soft power**—Yoga, Ayurveda, Buddhism, democratic values—to shape global perceptions.
  - Use **digital diplomacy** and **public diplomacy** to counter China's narrative in the Global South.
- **Economic Rebalancing and Supply Chain Resilience:** Reduce critical dependencies on China by **boosting domestic manufacturing** under **PLI schemes**, diversifying trade through **FTA negotiations with EU, UK, ASEAN, and Australia** and establishing resilient value chains with **Quad Supply Chain Resilience Initiative**.

INDIA-NEW ZEALAND RELATIONS

The Prime Minister of New Zealand undertook an official visit to India, engaged in bilateral discussions with the Indian Prime Minister, and jointly issued the India–New Zealand Joint Statement.

Key Highlights of the Joint Statement

➲ **Economic Cooperation:** India and New Zealand agreed to start negotiations for a fair and beneficial trade deal under **New Zealand's "Opening Doors to India" policy.**

   ◆ They also signed the **Authorized Economic Operators Mutual Recognition Arrangement (AEO-MRA)** to simplify the movement of goods.

Components of "Opening Doors to India" Policy

Education Development
Initiatives to improve skills and knowledge exchange

Cultural Engagement
Activities to foster understanding through cultural and diaspora interactions

Diplomatic Engagements
High-level meetings to strengthen international relations

FTA Negotiations
Trade agreements to enhance economic cooperation

Business Promotion
Encouraging investment and business partnerships

➲ **Security Cooperation:** A **defense cooperation MoU** was signed to promote regular military exercises and naval visits. New Zealand also showed interest in joining **India's Indo-Pacific Oceans Initiative (IPOI).**

➲ **Global Cooperation:** Both nations committed to maintaining a **free, inclusive, and stable Indo-Pacific**, ensuring a **rules-based order and freedom of navigation** under **UNCLOS**. New Zealand also **supported India's bid for permanent membership in a reformed UN Security Council** and backed its entry into the **Nuclear Suppliers Group (NSG).**

➲ **Climate Change:** New Zealand reaffirmed support for India's **International Solar Alliance (ISA)**, joined the **Coalition for Disaster Resilient Infrastructure (CDRI)**, and agreed to cooperate on **Sustainable Development Goals (SDGs), the Paris Climate Agreement, and the Sendai Framework for Disaster Risk Reduction**.

➲ **Education & Sports:** A **renewed Education Cooperation Arrangement** and a **Sports Cooperation MoU** were signed to boost academic ties, student exchanges, and sports collaborations. Both nations also plan to celebrate **100 years of sporting relations in 2026**.

➲ **Diaspora & Concerns:** Both leaders recognized the **Indian diaspora's contribution** (6% of New Zealand's population) in strengthening ties and assured the safety of **Indian students**

and tourists. India also raised concerns about **pro-Khalistan activities in New Zealand**, emphasizing threats from certain illegal groups.

NEW ZEALAND
LOW/HILLS MOUNTAINS

New Zealand

NORTH ISLAND

SOUTH ISLAND

Tasman Sea

South Pacific Ocean

Significance

➲ **Political & Diplomatic Ties**: Both countries share warm relations based on **Commonwealth membership, democratic values, and multilateral cooperation**, with regular **high-level exchanges** strengthening engagement.

➲ **Geo-Economic:**

   ◆ **Growing Trade Partnership**: India is an important trade partner for New Zealand, with bilateral trade valued at **USD 2.29 billion in 2022-23**, covering goods and services.

   ◆ **Trade Negotiations & Agreements**: Both countries are exploring a **bilateral trade agreement** under New Zealand's **"Opening Doors to India" policy**, aiming for balanced trade expansion.

   ◆ **Large Market:** India's vast **consumer base, rising middle class, and digital economy** offer opportunities for **New Zealand's agricultural, dairy, meat, wine, and tech exports**, strengthening trade diversification.

   ◆ **Technology & Digital Economy:** India's **global leadership in digital consumption, AI, fintech, and IT** creates space for **New Zealand's tech firms** to explore **bilateral innovation and digital commerce partnerships**.

- **Geo-strategic:** Amid China's expanding influence in the Pacific, exemplified by its action plan for a **comprehensive strategic partnership with the Cook Islands**, India's role as a **regional security provider** aligns with New Zealand's commitment to a stable Indo-Pacific.
  - This convergence fosters deeper cooperation in maritime security, upholding a **rules-based order**, and strengthening economic frameworks to ensure regional stability.

- **Clean Energy & Climate Collaboration:** New Zealand's leadership in **renewable energy, sustainability, and climate tech**, recognized in **HolonIQ's Indo-Pacific Climate Tech 100**, aids **India's low-carbon transition**.
- **Cultural & Niche Market Synergies:** Demand for **organic, sustainable, and artisanal goods** in New Zealand complements **India's expertise in textiles, handicrafts, and premium natural products**, deepening economic and cultural links.
- **Education & Skill Development:** With its **world-class education and vocational training**, New Zealand supports **India's human capital development**, improving workforce capabilities.

Challenges

- **Stalled FTA Negotiations:** Free Trade Agreement (FTA) talks, initiated in 2010, stalled in 2015 due to **India's tariff barriers on dairy and agricultural imports** to safeguard domestic producers, creating a deadlock in negotiations.
- **Non-Tariff Barriers (NTBs)**: Indian exports such as **grapes, okra, and mangoes face Sanitary and Phytosanitary (SPS) restrictions** in New Zealand, while the **absence of a Mutual Recognition Arrangement (MRA) for certifications** hampers trade facilitation.
- **Limited Market Awareness:** New Zealand's trade with India is limited by regulatory hurdles and low visibility beyond tourism. India often overlooks New Zealand's strengths in innovation, technology, and sustainability.
- **Low Bilateral Trade Volumes**: In 2023-24, total trade stood at **USD 1.75 billion** (New Zealand exports: **USD 0.84 billion**, imports from India: **USD 0.91 billion**), reflecting **underutilized economic potential**.
- **Geopolitical Divergences:** New Zealand's foreign policy, influenced by Western allies like **Australia** and the **US**, alongside economic dependence on China, may create strategic misalignments with India on regional security and trade dynamics.

WAY FORWARD

- **Revitalizing FTA Talks: Overcoming dairy and tariff-related disputes** through sector-specific engagements in **horticulture, pharmaceuticals, and technology** could accelerate FTA progress. A **temporary Economic Cooperation Agreement**, akin to the **India-Australia ECTA**, could serve as an interim solution.
- **Facilitating Market Access**: A **Mutual Recognition Arrangement (MRA) for quality standards**, easing SPS restrictions, and strengthening **technical cooperation on trade regulations** would mitigate NTBs. Additionally, **bilateral trade fairs, business delegations, and investor summits** can bridge market awareness gaps.
- **Strengthening Climate & Sustainability Cooperation**: Leveraging **New Zealand's expertise in climate tech, renewable energy, and sustainable agriculture**, while deepening collaboration under **India's International Solar Alliance (ISA) and the Coalition for Disaster Resilient Infrastructure (CDRI)**, will bolster **climate resilience and food security**.
- **Deepening Defense & Strategic Engagement**: Expanding **maritime security cooperation under the Indo-Pacific Oceans Initiative (IPOI)**, enhancing **joint naval exercises and intelligence-sharing**, and **coordinating on counter-terrorism and regional stability** align with **India's Indo-Pacific strategy** and New Zealand's security priorities.

GLOBAL SEA LEVEL RISE

NASA has reported that global sea levels rose faster than expected in 2024,
reaching 0.59 cm per year, surpassing the anticipated 0.43 cm.

About

- Global mean sea level provides an **integrative measure** of the state of the climate system, encompassing both the ocean and cryosphere (ice covered portions of Earth).
- It is the average height of the entire ocean surface.
- It is a key **indicator of climate change**, reflecting changes in both the ocean and ice-covered regions.

Causes of Global Mean Sea Level Changes

- **Ice Melt:** Rising temperatures cause the melting of ice sheets and glaciers, adding freshwater to oceans and raising sea levels. This process accelerates as global temperatures rise.
- **Thermal Expansion:** As oceans absorb heat from the atmosphere, water expands, leading to an increase in sea levels. In 2024, thermal expansion contributed two-thirds of the sea level rise.
- **Land Water Storage:** Human activities like groundwater extraction and dam construction alter water storage on land. These changes can reduce water stored on land, causing more water to flow into oceans, raising sea levels.
- **Land Subsidence:** In some coastal regions, land sinks due to human activities (e.g., groundwater extraction) or natural processes, leading to a relative rise in sea levels.
- **Ocean Circulation Changes:** Shifts in ocean currents, influenced by temperature changes and melting ice, can redistribute water, causing regional sea level variations and contributing to global sea level rise.
- **Atmospheric Pressure Changes:** Variations in atmospheric pressure, particularly from storms, can temporarily increase or decrease sea levels in specific coastal areas, impacting localized water levels.
- **Human Impact on Coastal Areas:** Urbanization, infrastructure development, and human activities in coastal areas can disrupt natural water flows, contributing to localized sea level rise.

Implications of Sea Level Rise:

- **Increased Coastal Erosion:** Rising sea levels lead to more frequent and intense coastal floods and storm surges, accelerating coastal erosion. According to the National Centre for Coastal Research (NCCR), 32% of India's coastline faced erosion between 1990 and 2018.
- **Coastal Inundation and Flooding:** Rising sea levels heighten the risk of frequent and severe flooding, especially in low-lying coastal regions and islands, causing significant damage to these areas.

- **Freshwater Salinization:** Subterranean aquifers and river deltas are becoming increasingly vulnerable to salinization due to rising sea levels, impacting freshwater availability in coastal areas.
- **Coastal Community Displacement:** Low-lying coastal communities face the threat of land flooding due to rising sea levels. For example, approximately 3.6 million people have been displaced in South Asia over the past decade, as reported by the Internal Displacement Monitoring Centre.
- **Coastal Habitat Loss:** Rising sea levels threaten coastal ecosystems such as mangroves, salt marshes, and coral reefs. The coral reefs in the Gulf of Mannar, for instance, are under significant threat.
- **Infrastructure Vulnerability:** Rising sea levels and more frequent floods increase the risk of infrastructure damage, requiring costly repairs and adaptations to withstand future challenges.

Findings of Centre for Study of Science, Technology and Policy (CSTEP) Report

- **Maximum Sea Level Rise (SLR):** Over the past three decades (1991–2020), the highest sea level rise was recorded at the Mumbai station (4.44 cm), followed by Haldia (2.72 cm), Visakhapatnam (2.38 cm), and others.
- **Submergence Due to Sea Level Rise by 2040:** By 2040, more than 10% of the land in Mumbai, Yanam, and Thoothukudi will be submerged.
  - Areas such as Panaji and Chennai may see 5%–10% submergence, while Kochi, Mangaluru, Visakhapatnam, Haldia, Udupi, Paradip, and Puri could experience 1%–5% submergence.

Where Most People Are Affected by Rising Sea Levels

Number of people per country living on land expected to be under sea level by 2100*

- 10-50 million
- 1-9 million
- 500,000-999,000
- 100,000-499,000
- < 100,000
- No data
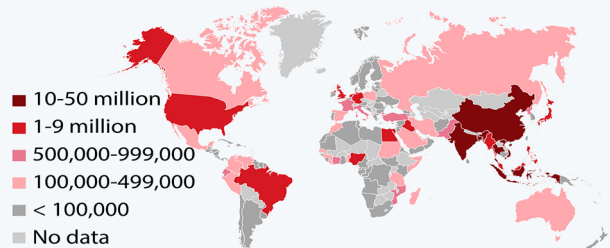
* assuming a rise in sea levels of 50-70 cm (2° C temperature increase/not taking into account ice sheet instability)
Source: Scott A. Kulp & Benjamin H. Strauss: New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding, Nature Communications

Steps Taken by the Government of India:

- **Coastal Erosion Control:** In 2020, the Central Water Commission published guidelines to design coastal protection measures for different regions. It includes:
  - **Site-specific Design:** Coastal protection works should be tailored to the specific conditions of each coastline, considering factors like erosion rates, wave energy, and sediment transport.
  - **Use of Natural Defenses:** Where feasible, natural features like dunes, mangroves, and coral reefs should be integrated into the design to enhance coastal resilience.
  - **Seawalls and Groynes:** Recommendations for the construction of seawalls, groynes, and breakwaters in areas with high erosion risks, using materials suited to local conditions.
  - **Sustainable Materials:** Use of sustainable and locally sourced materials in the construction of coastal protection structures to minimize environmental impact.
  - **Monitoring and Maintenance:** Continuous monitoring of erosion patterns and regular maintenance of coastal protection works to ensure long-term effectiveness.
  - **Community Involvement:** Involvement of local communities in the planning and maintenance of coastal protection measures to ensure their acceptance and sustainability.
- **Coastal Vulnerability Index (CVI):** The Indian National Centre for Ocean Information Services developed a CVI based on seven coastal parameters like shoreline change rate, sea-level change, and tidal range.

- **National Disaster Response Fund (NDRF):** Under the 15th Finance Commission, a recovery fund of Rs. 1000 crore is set aside for resettling people displaced by coastal erosion.
- **Coastal Regulation Zone (CRZ) Notification, 2019:** This regulation aims to conserve and protect coastal areas, marine environments, and support the livelihoods of local communities, especially fishermen.
- **Mangrove Initiative for Shoreline Habitats and Tangible Incomes (MISHTI):** A 5-year plan to develop 540 sq. km of mangrove forests across 11 states and 2 union territories, starting from FY 2023-24.

Global Best Practices

- **Maldives – Floating Urban Development:** In response to existential threats from sea level rise, the Maldives Floating City project aims to build a flood-resistant floating urban settlement.
  - **Key Features:** Modular units on a lagoon that rise with the sea; incorporates sustainable housing, coral regeneration, and blue economy principles.
- **New York City, USA – Climate Resiliency Plans:** After Hurricane Sandy in 2012, NYC launched the "OneNYC" and "Resilient NYC" plans focusing on infrastructure hardening, wetland restoration, and climate-proof housing.
  - **"The Big U" project** – a protective system around Lower Manhattan combining green parks with flood barriers.

WAY FORWARD

- **Ecosystem-Based Coastal Protection:** Natural buffers like mangroves, oyster beds, and coral reefs absorb wave energy and reduce coastal erosion. They also enhance biodiversity, support fisheries, and sequester carbon.
- **Floating Cities:** Flood-resilient urban infrastructure built on water bodies is being developed in countries like the Maldives and South Korea. These are designed to adapt to rising sea levels and provide sustainable urban living.
- **Integrated Coastal Zone Management (ICZM):** Promotes balanced development, ecosystem protection, and livelihood security in coastal zones. India's ICZM Plan supports states like Odisha, Gujarat, and West Bengal.
- **Climate Action Plans:** Coastal cities and states are formulating climate resilience strategies, including urban drainage planning and green infrastructure. Examples: Mumbai Climate Action Plan (MCAP), Tamil Nadu Green Climate Company.
- **Reduce Greenhouse Gas Emissions:** Addressing the root cause of global warming is key to slowing sea level rise. Includes promoting renewable energy, energy efficiency, and sustainable transport.
- **Disaster Risk Reduction (DRR) and Early Warning Systems:** UN-supported DRR frameworks like Sendai Framework help nations build resilience against storm surges, floods, and cyclones. Enhancing early warning systems, evacuation planning, and community awareness is crucial.
- **Planned Relocation of Communities:** In high-risk zones, relocating coastal populations can prevent loss of life and property. Must be done in a rights-based, inclusive, and participatory manner to avoid social conflicts.
- **Blue-Green Infrastructure:** Combines natural ecosystems (blue like wetlands) and vegetated spaces (green like parks) to reduce flooding and heat stress.
  - Improves water absorption and reduces pressure on grey infrastructure.

STARLINK SATELLITE INTERNET

SpaceX, led by Elon Musk, has entered into agreements with Airtel and Jio to distribute Starlink, its satellite-based internet service, in India. However, the service rollout is pending final regulatory approval.

About

- **Satellite internet** refers to a broadband service delivered via **Earth-orbiting satellites**, providing internet access without relying on traditional ground infrastructure like fiber optics or cellular networks.
- **Types of Satellite Internet:**
  - **Geostationary Orbit (GEO)** satellites offer wide coverage but with higher latency.
  - **Low Earth Orbit (LEO)** satellites – provide faster, low-latency connections.
    - *Example:* Starlink, OneWeb
- **Starlink** is a **Low Earth Orbit (LEO)** satellite constellation developed by **SpaceX** to deliver **high-speed, low-latency broadband** worldwide, particularly in **rural and remote areas**.
- Each satellite operates at **~550 km** altitude, enabling faster communication.
- Satellites are equipped with **phased array antennas**, **optical space lasers**, and **ion propulsion systems**.
  - SpaceX aims to deploy **42,000 satellites** to ensure **global coverage**.
- Future services include "**Direct to Cell**" technology for mobile connectivity and **Internet of Things (IoT)** integration.

Significance for India

- **Digital Inclusion:** Starlink can bridge the **digital divide** by providing **high-speed internet** to underserved and rural regions, in line with the **Digital India** initiative.
- **Disaster Resilience:** Since it is **independent of ground infrastructure**, Starlink can maintain communication in disaster-hit areas.
  - *Example:* After the 2023 Turkey-Syria earthquake, Starlink provided emergency connectivity.

BROADBAND INTERNET VS SATELLITE INTERNET		
Aspects	**Broadband Internet**	**Satellite Internet**
Definition	Broadband Internet refers to high-speed internet delivered through cable, DSL, fiber-optic, or wireless infrastructure.	Satellite Internet delivers internet using satellites orbiting Earth, typically from geostationary or low Earth orbit.
Infrastructure	Requires ground-based infrastructure like cables, routers, and cellular towers.	Requires satellite dishes, modems, and a clear view of the sky for connectivity.
Speed	Offers high-speed connectivity with speeds up to 1 Gbps in urban areas.	Offers moderate to high speeds, often comparable in rural settings (up to 100 Mbps).
Latency	Generally low latency, suitable for real-time gaming, video conferencing, etc.	Higher latency due to signal travel distance, especially in geostationary satellites.
Availability	Easily available in urban and suburban areas.	Accessible in rural and remote areas where broadband infrastructure is absent.
Installation Cost	Usually lower initial setup cost, especially in cities.	Higher initial equipment and installation costs, including dish and modem.

How Satellite Internet Works

High-speed satellite Internet is very simple

Antenna sends and receives information via satellite

Hub returns data to the customer via the hub and NOC

Computer with modem is linked to an outdoor unit

Satelite communicates with Network Operation Center (NOC) Hub earth stations transmit and receive signals from the satellite
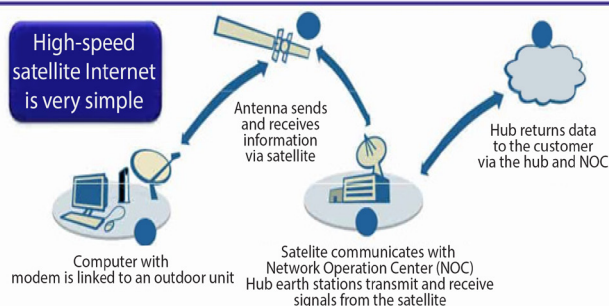
How Fixed Wireless Internet Works

High-Speed Internet Signal

Receiver (Antenna)

Wireless Connection

Main Access Point (Transmitter)

Modem/Router

Wired Connection
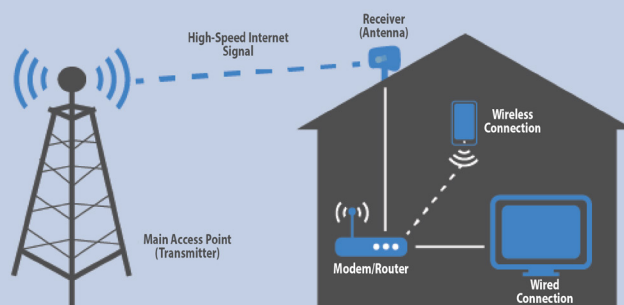
➲ **Strategic Communication:** Starlink enables **secure communication** in **border and remote regions** like **Ladakh**, the **Northeast**, and the **Andaman and Nicobar Islands**.

➲ **Alternative to Traditional Internet Service Providers (ISPs):** Starlink increases competition in the broadband sector and supports **rural entrepreneurship**, potentially lowering costs and improving service quality.

➲ **Support for Emerging Technologies:** Satellite internet can power **AI-based agriculture**, **remote monitoring**, **telemedicine**, and **e-learning platforms**.

Challenges and Limitations

➲ **Environmental Impact:** Starlink satellite re-entries release **aluminium oxide particles**, which may harm the **ozone layer**.

➲ **Astronomical Interference:** The brightness of LEO satellites interferes with **ground-based telescopes** and **astronomical observations**.
  ◆ SpaceX developed "**DarkSat**" to reduce brightness, but it remains a concern.

➲ **Collision Risk and Space Debris:** The large number of satellites increases the risk of **in-orbit collisions** and the generation of **space debris**.
  ◆ *Example:* In 2019, the **European Space Agency (ESA)** performed an evasive manoeuvre with its **Aeolus satellite** to avoid a potential collision with **Starlink-44.**

➲ **Operational Lifespan and Maintenance:** Each Starlink satellite has an average lifespan of **five years**, necessitating **frequent launches**, which adds to cost and debris.

➲ **Regulatory Hurdles in India:** Starlink requires approvals from agencies like the **Telecom Regulatory Authority of India (TRAI)** and the **Department of Telecommunications (DoT)** before commencing operations.

➲ **Monopoly and Data Privacy Concerns:** With a single private entity deploying tens of thousands of satellites, there are concerns about **market monopoly**, **data security**, and **lack of sovereign control**.

➲ **Uneven Global Access:** Although Starlink offers global coverage, affordability and accessibility may still be limited for low-income users in developing countries.

WAY FORWARD

➲ **Regulatory Clarity in India:** Agencies like **TRAI** and **DoT** should streamline **licensing norms**, spectrum allocation, and guidelines for **satellite broadband providers**.

➲ **Strengthen Space Governance:** India and other countries must engage with **international forums** like the **United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS)** to establish **binding norms** for space traffic and debris management.

➲ **Develop Indigenous Alternatives:** India can strengthen its own projects like **OneWeb (Bharti-backed)** and promote **public-private partnerships** for domestic satellite internet services.

➲ **Promote Responsible Launch Practices:** Enforce **collision-avoidance mechanisms**, promote **eco-friendly satellite design**, and adhere to **debris mitigation guidelines** by the **Inter-Agency Space Debris Coordination Committee (IADC)**.

➲ **Invest in Tracking and Situational Awareness:** Expand projects like **Project NETRA** and the **ISRO System for Safe and Sustainable Operations Management (IS4OM)** to track satellite movement and enhance **space situational awareness**.

➲ **Global Collaboration on Dark Satellite Technology:** Encourage further innovations like **DarkSat** and promote **international cooperation** to minimise impact on astronomy.

➲ **Inclusive Pricing Models:** Starlink should adopt **affordable pricing strategies** and work with governments to subsidise services in **underserved communities**.

➲ **Space Traffic Management:** Establish a global **"Right of Way" in orbit**, similar to airspace management, to reduce collision risk and ensure equitable access.

7 YEARS OF POSHAN ABHIYAAN

POSHAN Abhiyaan, India's flagship nutrition scheme,
recently completed 7 years since its launch on March 8, 2018.

About

➲ The Prime Minister's Overarching Scheme for Holistic Nutrition (POSHAN) is also known as the **National Nutrition Mission**.

➲ It aims to improve **nutritional outcomes** for **children, pregnant women**, and **lactating mothers**.

➲ The mission aims for an annual reduction of 2% in stunting and undernutrition, 3% in anemia, and 2% in low birth weight.

➲ **Core Objectives:**
- Reduce **stunting** in children (0–6 years).
- Reduce **under-nutrition** (underweight prevalence) in children.
- Reduce **anemia** among women (15–49 years) and adolescent girls.
- Reduce incidence of **Low Birth Weight (LBW)**.

Strategic Pillars of POSHAN Abhiyaan

➲ **Access to Quality Services**: Strengthening maternal and child healthcare through **Integrated Child Development Services (ICDS), National Health Mission (NHM), and Pradhan Mantri Matru Vandana Yojana** to ensure better nutrition and well-being.

➲ **Cross-Sectoral Convergence**: Aligning with **Swachh Bharat Abhiyan (Clean India Mission) and Jal Jeevan Mission (JJM – Water Life Mission)** to enhance hygiene, sanitation, and clean water access, contributing to improved nutrition outcomes.

➲ **Technology Integration**: Utilizing the **Poshan Tracker App** for **real-time monitoring, data-driven decision-making, and effective implementation of nutrition programs**.

➲ **Jan Andolan (People's Movement)**: Encouraging **community participation, advocacy, and behavioral change** to promote better nutrition practices and improve public health outcomes.
- In 2021, the government launched **Mission POSHAN 2.0**, which merged the **Supplementary Nutrition Programme (SNP)** and the original **POSHAN Abhiyaan**. The aim was to streamline operations and adopt an integrated delivery approach for better nutrition outcomes.
- The funding pattern for Mission POSHAN 2.0 is shared between the Union and State governments in a **60:40 ratio** for general States and **90:10** for Northeastern and Himalayan States.

➲ **Implementation Innovations:**
- **Swasth Bharat Preraks**: The scheme deployed one Swasth Bharat Prerak per district to coordinate with local officials and accelerate on-ground execution.
- **Rashtriya POSHAN Maah**: Every year in September, it is celebrated to promote awareness on topics such as breastfeeding, anemia prevention, hygiene, girl education, and dietary practices.

- These activities focus on Social and Behavioural Change Communication (SBCC).

MISSION POSHAN 2.0 & SAKSHAM ANGANWADI

1 2 lakh Anganwadis to be upgraded as 'Saksham Anganwadis'

2 Nutritional norms and standards to be improved

3 Quality and testing of Take-home Ration to be strengthened

4 Traditional community food habits to be promoted

5 Delivery of food under the Supplementary Nutrition Program to be optimised

➲ **POSHAN Vatika:** Nutri-gardens, known as Poshan Vatikas, are developed in Anganwadi Centres, school campuses, and village areas to ensure the availability of home-grown vegetables and fruits. This promotes dietary diversity and organic nutrition at the local level.

NEED FOR POSHAN

Malnutrition early in life can manifest in many forms such as low birth weight, stunting, wasting, and anaemia.

Persistent poor nutrition during the most critical period of growth and development can result in stunting or children being short for their age. Likewise, acute nutritional deprivation leads to wasting in children causing thinness (too thin for their height).

The financial case for investing in maternal and child nutrition is strong as good nutrition is linked to improved child development and consequently to national development.

Brain attains 80 per cent of its adult size by three years of age and is nearly fully grown by five years. Nutritional deprivation and lack of responsive care during early years not only impairs children's physical growth but also negatively impacts their brain development.

Need for POSHAN Abhiyaan:

➲ Despite various government interventions, India continues to face high levels of child malnutrition and anemia. According to the National Family Health Survey – 5 (2019–21), the situation remains concerning.
- 35.5% of children under five were stunted.

- 32.1% of children were underweight.
- 67.1% of children aged 6–59 months were anaemic.

⊃ The **Global Nutrition Report 2021** reported no significant progress in addressing child wasting and anemia in India. Moreover, India ranks **116th out of 180 countries** on the **Human Capital Index 2020**, indicating the urgent need for focused nutrition interventions.

Challenges in Nutrition:

⊃ **Data Limitations:** The absence of credible, annual data impedes effective monitoring and evaluation. For instance, the decade-long gap between NFHS-3 and NFHS-4 surveys highlights this issue.

⊃ **Integrated Child Development Services (ICDS) Issues:** The ICDS faces challenges in delivering quality food uniformly. the Anganwadi workers often receive low wages and insufficient training, limiting their effectiveness in combating malnutrition.

⊃ **Dietary Imbalance:** India's predominantly cereal-based diet contributes to micronutrient deficiencies. The National Food Security Act does not adequately address nutritional deficiencies, and efforts in food fortification remain limited.

⊃ **Socio-Economic and Cultural Barriers:** Factors such as caste dynamics, illiteracy among women, and gender biases pose significant challenges.

- *For example*, the **Hausla Poshan Yojana in Uttar Pradesh** faced hurdles when beneficiaries reportedly refused food prepared by Anganwadi workers from certain communities.

⊃ **Lack of Awareness:** There is a widespread lack of knowledge about healthy diets, proper feeding practices, and the importance of breastfeeding, which hampers efforts to reduce malnutrition.

⊃ **Sanitation and Hygiene Deficiencies:** Poor sanitary conditions, including open defecation, lead to diseases like diarrhea, making children more susceptible to stunting.

⊃ **Financial Constraints:** Budgetary allocations for many nutrition schemes have decreased over time, with significant portions remaining unspent in several states.

Way Forward:

⊃ **Early Life-Cycle Interventions:** Implement targeted interventions during the first 1,000 days of a child's life to address under-nutrition and related health issues.

⊃ **Revamp Key Schemes:** Reassess and enhance the effectiveness of ICDS, Mid-Day Meal schemes, and the PDS. Encouraging public-private partnerships can help reduce leakages and improve service delivery.

⊃ **Community Engagement:** Foster a sense of urgency and collective responsibility at the community level to combat malnutrition effectively.

⊃ **Address Socio-Cultural Factors:** Implement educational programs to tackle illiteracy, gender biases, and cultural practices that hinder nutritional improvement.

⊃ **Enhance Sanitation Infrastructure:** Invest in improving sanitation facilities to reduce disease prevalence and support better nutritional outcomes.

Global Case Studies: Best Practices to Improve Nutrition

⊃ **Brazil – Fome Zero (Zero Hunger Programme)**
- **Objective:** Eliminate hunger and ensure food and nutritional security.
- **Key Features:** Conditional cash transfers (Bolsa Família). Public procurement from family farmers.Community kitchens and school feeding programs.

⊃ **México – Oportunidades Program**
- **Objective:** Improve education, health, and nutrition of poor families.
- **Key Features:** Conditional cash transfers tied to school attendance, health visits, and nutritional supplements.Targeted women and children.

Indian Case Studies: Best Practices to Improve Nutrition

⊃ **Odisha – Mo Upakari Bagicha (My Beneficial Garden)**
- **Key Features:** Promotion of household and school-level nutrition gardens. Local procurement for Mid-Day Meal and ICDS.

⊃ **Chhattisgarh – Suposhan Abhiyaan**
- **Objective:** Eliminate malnutrition and anemia in tribal districts.
- **Features:** Community-based identification and treatment of Severely Acute Malnourished (SAM) children. Use of local food resources and women SHGs.

⊃ **Tamil Nadu – Integrated Child Development Services (ICDS) Reform**
- **Innovation:** Direct procurement of fresh vegetables, eggs, and fruits.
- **Features:** Better monitoring of food quality.Emphasis on protein and micronutrient-rich diets.

NEED FOR REFORM IN TRIBUNALS

The Supreme Court of India has called for urgent reforms to strengthen India's tribunal system while reviewing the Tribunal Reforms Act 2021.

Supreme Court Observations

➲ The Court criticized the **executive's dominance** in tribunal appointments and **short tenure**, which discourage competent candidates.

➲ Expressed concern over **contractual recruitment of support staff** in sensitive tribunals like **NCLT**, affecting efficiency and security.

➲ Questioned the **validity of the age criterion** for tribunal appointments that had been previously invalidated.

➲ Directed the Centre (in January 2025) to submit a **comprehensive report on vacancies** in tribunals.

About Tribunals

➲ **Tribunals** are **quasi-judicial institutions** created to resolve disputes in specific fields such as **administrative service matters, taxation, corporate laws, environment, and armed forces**.

➲ They were introduced into the Constitution through the **42nd Amendment Act, 1976**, which added **Part XIV-A**, comprising:

➲ **Article 323A:** Allows Parliament to establish Administrative Tribunals for public service matters.

➲ **Article 323B:** Empowers Parliament and State Legislatures to set up tribunals for taxation, land reforms, industrial disputes, elections, etc.

◆ Tribunals are an **alternative to traditional courts** by providing **specialized, time-bound adjudication**.

About Tribunal Reforms Act, 2021

➲ Enacted after the Supreme Court **struck down the Tribunal Reforms Ordinance, 2021,** in *Madras Bar Association v. Union of India*.

◆ However, the Act **reintroduced the same provisions**, leading to renewed judicial scrutiny.

Key Provisions of the Act:

➲ **Abolished nine appellate tribunals**, transferring their functions to High Courts or other judicial bodies. **Search-cum-Selection Committees** were established for the appointment of tribunal members and chairpersons.

◆ **For central tribunals:** CJI or nominated SC judge as Chairperson (with casting vote), 2 Secretaries, 1 retired judge/member, and 1 non-voting ministry Secretary.

◆ **For state tribunals:** Chief Justice of the High Court as Chairperson.

➲ **Tenure:** 4 years; **Minimum age**: 50 years.

➲ **Maximum age**: 67 years for members, 70 years for chairpersons.

➲ **Reappointment allowed**, with preference for past service.

➲ **Removal**: By Central Government on the recommendation of the Search-cum-Selection Committee.

BENEFITS OF STRENGTHENING TRIBUNALS

Access to Justice in Remote Areas
Ensures justice reach in distant regions

Subject-Specific Adjudication
Enhances justice quality through specialization

Court Burden Reduction
Reduces pressure on traditional courts

Faster Dispute Resolution
Increases efficiency by resolving disputes quickly

EVOLUTION OF JUDICIAL REVIEW IN INDIAN TRIBUNALS

1987 — S.P. Sampath Kumar v. Union of India upholds Administrative Tribunals

1997 — L. Chandra Kumar v. Union of India affirms judicial review of tribunal decisions

2010 — Union of India v. R. Gandhi emphasizes judicial expertise in tribunal appointments

2021 — Madras Bar Association v. Union of India strikes down provisions undermining judicial independence

Significance of Tribunals

- **Specialisation:** Tribunals handle cases within a defined domain, allowing for **informed adjudication by subject matter experts**. *Example:* The National Green Tribunal (NGT) deals with environmental matters and ensures expert handling of ecological and conservation issues.
- **Speedy Resolution:** Tribunals are designed to deliver faster justice, especially where **timely decisions are essential**.
  - **Example:** The Central Administrative Tribunal (CAT) resolves disputes related to recruitment and service conditions of government employees swiftly.
- **Reduced Burden on Courts:** By handling specific matters, tribunals help **reduce the workload of regular courts**, leading to improved judicial efficiency.
  - **Example:** The Income Tax Appellate Tribunal (ITAT) deals exclusively with income tax appeals, easing pressure on the judiciary.
- **Greater Accessibility:** Tribunals often have **regional benches**, making it easier for citizens to seek legal remedies without traveling far.
  - **Example:** State Consumer Disputes Redressal Commissions operate at the district and state levels to address consumer grievances effectively.
- **Expert Decision-Making:** Tribunals include members with **technical or professional expertise**, improving the **quality of decisions** in complex cases.
  - *Example:* The Intellectual Property Appellate Board (IPAB) comprises experts in intellectual property law, enabling well-informed judgments on patents and trademarks.

Key Issues Affecting Tribunals

- **Lack of Judicial Independence:** The Supreme Court struck down certain provisions of the **Tribunal Reforms Act, 2021** that restricted judicial dominance in the **Search-cum-Selection Committees**, undermining the independence of tribunals.
- **Case Backlogs:** The **Armed Forces Tribunal (AFT)** had **18,829 pending cases** as of 2021, severely impacting timely justice delivery to military personnel.
- **Staffing and Infrastructure Deficiencies:** In the **National Company Law Tribunal (NCLT)**, support staff were recruited on a **contractual basis**, raising concerns about the security and efficiency of handling **sensitive corporate matters**.
- **Overlapping Jurisdiction:** The Supreme Court has observed **frequent conflicts between NCLT and High Courts**, particularly in cases arising under **corporate and insolvency law**, leading to judicial uncertainty.
- **Flawed Appointment Process:** The appointment process is often slow, lacks transparency, and is influenced by political considerations. The absence of uniform qualifications, retirement age, and powers across tribunals affects consistency and efficiency.

- **Weak Legislative Support:** Many tribunals lack strong statutory backing, making them vulnerable to executive interference and weakening their institutional independence.
- **Procedural Complexity:** Tribunal procedures can be **complex and technical**, making it difficult for people without legal representation to **effectively present their case**.
- **Concerns over Impartiality:** When tribunal members have close links with the sector they regulate, it can lead to **perceived or actual bias**, reducing **public trust**.
- **Weak Enforcement of Decisions:** Even when a tribunal rules in favour of a party, the **lack of enforcement mechanisms** can make implementation difficult, reducing the impact of its decisions.
- **Resource Constraints:** Tribunals often function with **limited budgets and manpower**, which hampers **quality decision-making**, timely hearings, and **legal support for parties**.
- **Restricted Appeals Process:** The scope for appealing tribunal decisions is sometimes **unclear or overly limited**, leading to a **lack of recourse** for affected individuals.

TRIBUNAL SYSTEMS WORLDWIDE

US SYSTEM
Tribunals have limited powers, with final authority in constitutional courts.

UK SYSTEM
Features a two-tier system managed by HM Courts and Tribunals Service

AUSTRALIA SYSTEM
Involves administrative tribunals with appeals to Courts of Appeal

Way Forward

- **Ensure Judicial Independence:** Guarantee judicial dominance in the appointment process, with the Chief Justice of India (CJI) or a nominated judge having a casting vote. Protect tribunal members from arbitrary removal and executive interference.
- **Establish a National Tribunals Commission (NTC):** Create a statutory and independent NTC to manage appointments, reappointments, performance monitoring, grievance redressal, and infrastructure development.
- **Fill Vacancies and Build Capacity:** Ensure the timely filling of all vacant positions. Appoint support staff on a permanent or deputation basis to promote stability and institutional continuity.
- **Improve Infrastructure and Technology:** Upgrade courtrooms, enable digital filing, and expand video-conferencing facilities. Establish regional benches to improve accessibility, especially in rural and remote areas.
- **Define Jurisdiction Clearly:** Provide legislative clarity on the jurisdiction of tribunals vis-à-vis regular courts. Avoid overlaps, reduce forum shopping, and ensure timely resolution of disputes.

DEMOCRACY TO EMOCRACY

The Vice-President of India recently urged a national debate on the shift from 'Democracy to Emocracy', warning that emotion-driven policies could undermine the core principles of democracy.

Understanding Democracy and Emocracy:

➲ **Democracy** is a system of government in which the people have the power to make decisions, either directly or through elected representatives.

➲ Traditionally, democracy is built upon logical reasoning, debate, and informed citizenry.

➲ In an ideal democratic setup, policies are formulated and debated based on evidence, expert insights, and rational decision-making.

   ◆ However, in an *Emocracy (fusion of 'emotion' and 'democracy')*, decision-making is increasingly dictated by *public emotions, viral narratives, and psychological persuasion tactics.*

➲ It is **visible worldwide**—from the rise of leaders like Donald Trump in the U.S. to Brexit in the U.K. and the nationalist surge in several European nations.

Drivers of the Shift from Democracy to Emocracy

➲ **Social Media and Digital Influence:** Social media amplifies emotions over facts, making sensational content go viral.

   ◆ Unlike traditional media, it lacks strict fact-checking, allowing misinformation to spread unchecked.

➲ **Emotion-Driven Political Messaging:** Politicians increasingly use nationalism, religious sentiments, and historical grievances to sway voters.

   ◆ Logical debates and policy discussions are often replaced by emotional appeals.

➲ **Identity Politics and Vote Bank Strategies:** Leaders exploit caste, religion, and ethnicity to consolidate support, often prioritizing emotional appeasement over inclusive national development.

➲ **Affirmative Action vs. Appeasement:** While constitutional provisions ensure social justice, political parties often misuse them for short-term electoral gains, diluting their intended impact.

➲ **Media Sensationalism and Fear-Based Narratives:** News outlets focus on outrage-driven reporting for higher engagement, overshadowing balanced, fact-based journalism.

➲ **Rise of Populist Leadership:** Populist leaders capitalize on emotions, offering simplistic solutions while dismissing critics as enemies, deepening political divisions.

➲ **Decline of Rational Discourse:** Emotional rhetoric dominates political debates, sidelining evidence-based policy-making and stifling constructive criticism.

➲ **Fear and Victimhood Narratives:** Communities are often portrayed as victims, fueling resentment and reactionary policymaking instead of fostering unity and resilience.

➲ **Weakening of Democratic Institutions:** Public institutions face increasing pressure to align with popular emotions, threatening their independence and credibility.

COMPARISON OF DEMOCRACY AND EMOCRACY		
Feature	**Democracy**	**Emocracy**
Decision-Making	Rational, evidence-based	Emotion-driven, impulsive
Political Leadership	Accountable, policy-focused	Charismatic, populist
Public Engagement	Informed debate	Sentiment-driven reactions
Media Influence	Free press, investigative journalism	Sensationalism, misinformation
Long-term Governance	Stability, institutional continuity	Short-term, reactionary policies

TYPES OF DEMOCRACY	
Direct Democracy	**Indirect Democracy**
It is a form of democracy where all laws and policies are created by a general vote of society.	It is a form of democracy where citizens vote on representatives to create laws and policies on behalf of them.
There are no intermediaries; the vote of the citizens directly determines all laws and policies of governments.	People elect representatives to create and amend laws and policies on their behalf.
More direct and transparent.	Less transparent.
May be less efficient.	Comparatively more efficient.
Examples: Ancient Athens and Switzerland.	*Examples:* The United States, the United Kingdom, France, and India.

- **Short-Term Emotional Policies Over Long-Term Reforms** – Governments prioritize immediate emotional gratification over sustainable reforms, affecting long-term governance and economic stability.

Issues with Emotionally Driven Policies

- **Mass Appeal Over Policy-Based Governance** – Populist leaders prioritize emotional appeals over rational policymaking, often leading to unsustainable economic policies.
  - **Farm Loan Waivers** – States like Punjab and Maharashtra announced large-scale farm loan waivers due to protests.
    - RBI data (2023) shows less than 30% of small farmers benefited, while state budgets faced long-term financial strain.
- **Legal and Constitutional Conflicts** – Emotionally driven policies often bypass due process, resulting in poorly drafted laws with legal loopholes.
  - **Demonetization (2016)** – Introduced to curb black money, it caused short-term economic distress without significantly reducing illicit wealth. NSSO data (2018) reported 1.5 million job losses in the informal sector.
- **Economic Disruptions and Resource Misallocation** – Policies based on emotions often ignore economic feasibility, leading to wasteful expenditure and market instability.
  - **Free Electricity and Water Schemes** – While popular, such schemes burden state finances.
    - A **CAG report (2021)** found that free electricity schemes in Delhi and Punjab led to rising power sector debts, affecting infrastructure investments.
- **Social Polarization and Policy Paralysis** – Emotionally charged policies often create political divisions, leading to protests and governance deadlocks.
  - **Citizenship Amendment Act (CAA) (2019)** – Passed amid heated debates, the CAA led to nationwide protests over religious discrimination concerns, delaying the NRC process.
- **Reactionary vs. Long-Term Policymaking** – Crisis-driven policies often lack foresight, prioritizing immediate responses over structural reforms.
  - **COVID-19 Lockdown (2020)** – The abrupt lockdown left millions of migrant workers stranded. CMIE data (2021) reported 75 million job losses.
    - Countries like **Germany** and **South Korea** implemented phased lockdowns with social security support to minimize economic shocks.

Importance of Emotionally Driven Policies

- **Social Justice and Correcting Historical Wrongs** – Emotionally driven policies help address past injustices and promote equity. **Reservation for SCs, STs, and OBCs** has significantly improved social mobility.

- A **NITI Aayog Report (2023)** found that literacy rates among SC/STs have risen due to reservation policies in education.
- **Quick Decision-Making During Crises** – Emotional responses enable rapid government intervention during disasters, preventing bureaucratic delays.
  - The **Pradhan Mantri Garib Kalyan Yojana (PMGKY)** provided relief to **80 million people** during the COVID-19 pandemic, ensuring food and financial security in an emergency.
- **Strengthening National Unity & Identity** – Some policies foster patriotism and social cohesion despite criticism.
  - **Swachh Bharat Abhiyan**, while seen as symbolic, led to a **60% reduction in rural open defecation (UNICEF, 2021)** by promoting behavioral changes and sanitation awareness.
- **Public Health and Awareness Campaigns** – Emotionally charged messaging can drive public participation in health programs.
  - India's **Polio Eradication Campaign** used mass outreach, celebrity endorsements, and community engagement to eliminate polio by **2014**, ensuring nationwide immunization.
- **Gender Justice and Women Empowerment** – Emotion-driven policies play a key role in gender equality.
  - The **Beti Bachao Beti Padhao** initiative helped increase **female school enrollment** and reduce female infanticide in targeted districts by challenging deep-rooted social biases.
- **Environmental and Climate Action** – Emotional appeals are crucial for driving conservation efforts. **Project Tiger**, launched to protect India's tiger population, increased tiger numbers from **1,411 in 2006 to 3,167 in 2022**, showing the impact of awareness campaigns on wildlife preservation.

Way Forward

- **Strengthening Data-Driven Governance:** Policies should be framed by economic, scientific, and social research rather than sentiment.
  - **Example: Kerala's Nava Keralam Mission** focuses on health and education reforms based on real-time data analysis.
- **Regulating Social Media Narratives:** While free speech must be protected, platforms must adopt stricter regulations to prevent misinformation and hate speech.
- **Reviving Rational Public Debates:** Institutions like universities, think tanks, and civil society groups should take the lead in restoring logic-based discussions in public forums.
- **Institutional Reforms:** Fiscal policies should undergo rigorous scrutiny by parliamentary committees to assess long-term impact.
  - **Example:** The **Fiscal Responsibility and Budget Management (FRBM) Act** helps prevent reckless public spending.
- **2nd ARC Recommendation:** Institutionalize Impact Assessment Committees before rolling out major policies to avoid reactionary decision-making.

ELECTORAL REFORMS IN INDIA

India's electoral democracy faces challenges from money, crime, and communalism in campaigns, requiring comprehensive reforms to uphold the sanctity of the democratic process.

Meaning:

➲ **Electoral reform** is the change or improvement of the electoral systems of a particular country.

Issues in the Current Electoral System

➲ **Criminalisation of Politics**: ADR has termed this trend as the **worst phase of criminalisation in Indian politics**, raising serious concerns about the erosion of democratic values and governance integrity.

- ◆ **High Number of MPs with Criminal Backgrounds**: As per data from the **Association for Democratic Reforms (ADR)**, **251 Members of Parliament (46%)** have **pending criminal cases** against them.
- ◆ **Serious Criminal Charges Among Legislators**: Out of these, **170 MPs (31%)** are facing **serious charges**, including cases related to murder, attempt to murder, and crimes against women.

➲ **Money Power in Elections**: Campaigns frequently **exceed legal spending limits**, with **no cap on party expenditures**. Notably, over ₹**1,00,000 crore** was reportedly spent in the **2024 Lok Sabha elections**.

➲ **Electoral Roll Manipulation & Voter Fraud**: Issues like **duplicate entries** and **fake voter IDs** raise concerns about the **accuracy and fairness** of elections.

➲ **Technology-related Trust Deficit**: While **EVMs and VVPATs** enhance speed and efficiency, **lack of transparency and random audits** fuels public skepticism.

➲ **Unethical Campaign Practices**: Hate speech, **fake news**, and **polarizing appeals** divert attention from **developmental issues** and **policy debates**.

➲ **First-Past-The-Post System (FPTP)**: Enables candidates to win without **majority support**, weakening **true representative democracy**.

➲ **Delimitation Concerns**: Redrawing of constituencies may cause a **north-south power imbalance**, raising **federal concerns**.

➲ **Hate Speech & Misuse of Campaigning:** Increasing use of **abusive language**, **communal and caste-based appeals**, and **unverified allegations** has distorted democratic discourse.

Proposed Electoral Reforms

➲ **Decriminalization of Politics**: Disqualify candidates with **serious charges** and **fast-track judicial cases** involving politicians.

Constitutional and Legal Provisions Related to Elections and Electoral Reforms

Constitutional Provision:

➲ **Article 324 of the Constitution** grants the **Election Commission of India (ECI)** the power of **superintendence, direction, and control** over the **preparation of electoral rolls** and the **conduct of elections** to the **Parliament and State legislatures**.

➲ **Article 325 - Uniformity of the Composition of the Electorate:** It ensures that there shall be one general electoral roll for all elections to the Lok Sabha and the State Legislative Assemblies. It prohibits any discrimination on grounds of religion, race, caste, sex, or place of birth in determining the right to vote.

➲ **Article 326 - Elections to the House of the People and the Legislative Assemblies of States to be on the basis of Adult Suffrage:** This article provides for the **universal adult suffrage** for elections to the Lok Sabha and State Legislative Assemblies, ensuring that all citizens who are 18 years or older have the right to vote, irrespective of their race, religion, or gender.

➲ **Article 327 - Power of Parliament to Make Laws Regarding Elections:** It empowers the **Parliament** to make laws related to the conduct of elections, including the creation of laws for the procedure of elections, qualifications of electors, and the representation of the people in legislatures.

➲ **Article 328 - Power of State Legislature to Make Laws Regarding Elections:** It grants the **State Legislatures** the power to make laws relating to elections for the State Legislature, provided they do not conflict with national laws.

Legal Provisions:

➲ **Representation of the People Act, 1950:** This Act provides for the **allocation of seats** in the **Lok Sabha** and **State Legislative Assemblies**, and it lays down the procedure for the preparation of electoral rolls and the registration of voters.

- ◆ It defines the **qualifications** and **disqualifications** for voters.

➲ **Representation of the People Act, 1951:** This Act is the core law governing elections in India.

- ◆ It deals with the conduct of elections to Parliament and State Legislatures, the **qualifications and disqualifications** of candidates, the **election process**, and **election offenses**. It also empowers the **Election Commission** to conduct and oversee elections.

- **Transparent Political Funding**: Introduce state funding, enforce mandatory disclosure of donations, and reform electoral bonds.
- **Proportional Representation:** Explore **PR-based models** to ensure **fairer representation** of smaller parties and diverse ideologies.
- **Empower Election Commission**: Enhance ECI's **autonomy**, ensure **transparent appointments**, and give it **more legal authority** to act against violators.
- **Voter Verification Mechanisms**: Link **Aadhaar with Voter ID** (with privacy safeguards) to eliminate **fraudulent entries**.
- **Internal Democracy in Political Parties**: Mandate internal elections, term limits, and transparent candidate selection processes.
- **Audit & Improve EVM-VVPAT Systems**: Increase **sample verification**, conduct **random audits**, and make technical systems **open to scrutiny**.

Key Committees Recommendations

- **Dinesh Goswami Committee (1990)**: Limit anti-defection to cases of voluntary resignation or voting against party in confidence motions.
  - Election Commission, not Speaker, should decide disqualification.
  - **Electoral Offenses**: Suggested strict action to curb booth capturing, rigging, and violence.
- **Indrajit Gupta Committee (1998)**: Advocated **state funding of elections** to reduce corporate influence.
- **Vohra Committee (1993)**: Exposed the **criminal-politician-bureaucrat nexus**, warning of a **parallel government** run by criminal networks.
- **TS Krishnamoorthy Report**: Proposed a **National Election Fund** for equitable and clean campaign financing.

SUPREME COURT JUDGEMENTS RELATED TO ELECTORAL REFORM	
Case Name	**Highlights of Judgement**
Union of India v. Assn. for Democratic Reforms (2002)	Made it mandatory for candidates to disclose criminal, financial, and educational background in affidavits.
People's Union for Civil Liberties (PUCL) v. Union of India (2003)	Upheld voters' right to know candidate information as part of Article 19(1)(a) – freedom of expression.
Lily Thomas v. Union of India (2013)	Disqualified MPs/MLAs immediately upon conviction for certain offences – struck down protection under Section 8(4) of RPA.
Public Interest Foundation v. Union of India (2019)	Directed political parties to publicly disclose criminal cases of their candidates and reasons for selection on their websites and media platforms.

KEY ELECTORAL REFORMS IN INDIA	
Reform	**Key Features**
52nd Constitutional Amendment Act (1985)	Introduced the Anti-Defection Law through the Tenth Schedule to curb political defections.
91st Constitutional Amendment Act (2003)	Limited the size of ministerial councils and strengthened the anti-defection framework.
61st Constitutional Amendment Act (1988)	Reduced the voting age from 21 years to 18 years, expanding democratic participation.
73rd Constitutional Amendment Act (1992)	Institutionalized Panchayati Raj with direct elections and reserved seats for weaker sections.
Introduction of EVMs (1998 nationwide rollout)	Ensured faster, efficient, and tamper-proof voting and counting processes.
Ceiling on Election Expenditure (Ongoing Reform)	Set legal spending limits on candidates to ensure a level playing field.
Provision of NOTA – None of the Above (2013)	Enabled voters to reject all candidates, promoting greater voter autonomy.
SVEEP Programme by ECI (Launched in 2009)	Aims to educate voters and improve voter turnout, especially among marginalized groups.
High-Level Committee on 'One Nation, One Election', chaired by former President Ram Nath Kovind (2023)	Advocates simultaneous Lok Sabha and State Assembly elections to reduce cost and disruptions.

PM'S VISIT TO MAURITIUS

The Prime Minister undertook a state visit to Mauritius as the Chief Guest at
the country's National Day celebrations on March 12,2025.

Key Highlights of the Visit

- **MOUs Signed:** Includes training civil servants, small and medium enterprises, blue economy development, combating financial crimes, and local currency settlement for trade.
- **Indian Rupee Credit Line:** A 487.6 crore INR line of credit for replacing water pipelines in Mauritius, a first-ever INR-based credit line.
- **White-Shipping Agreement:** Technical agreement for maritime security and information exchange.
- **Award Conferred:** PM Modi received the **Grand Commander of the Order of the Star and Key of the Indian Ocean,** marking him as the **first Indian recipient**.
- **Vision for the Global South:** PM introduced **Vision MAHASAGAR** (Mutual And Holistic Advancement for Security And Growth Across Regions), building on the previous Vision SAGAR.

About Mauritius

- **Location:** Indian Ocean, east of Madagascar
- **Capital:** Port Louis
- **Geography & Climate**
  - **Islands:** Includes **Mauritius, Rodrigues, Agalega, and Cargados Carajos Shoals**
  - **Climate:** Tropical, warm and humid with two seasons – **Summer (Nov-Apr)** & **Winter (May-Oct)**
- **Tourism: Popular Attractions:** Le Morne Brabant, Black River Gorges National Park, Île aux Cerfs, Grand Bassin.

Significance

Geo-Economic Ties:

- India is one of Mauritius' largest trading partners. In FY 2023-24, total trade stood at **USD 851.13 million**.
- Mauritius is a major FDI source for India, contributing **USD 175 billion since 2000**. In FY 2023-24, it was the **second-largest** FDI source after Singapore.
- The **Comprehensive Economic Cooperation and Partnership Agreement (CECPA)** was signed in 2021, enhancing trade, particularly in textiles and medical devices.
- India provided a **USD 353 million grant** for priority projects, including the **Metro Express Project, Supreme Court Building, Social Housing, Digital Education**.
- A **USD 500 million Line of Credit (LoC)** supports infrastructure projects like **solar power plants, forensic labs, police academy, and health centers**.
- **Blue Economy:** Mauritius is key to India's interests in the Indian Ocean's blue economy, especially for maritime resources, fisheries, and offshore energy exploration.

Geo-Political & Strategic Ties:

- India and Mauritius share strong trust and high-level political engagements.India established diplomatic relations with Mauritius in 1948, before its independence in 1968.
- Mauritius' **strategic location** in the Indian Ocean is crucial for India's **maritime security and trade routes**.
- Deepening ties with Mauritius strengthens India's **regional influence and counters China's growing presence** in the Indian Ocean.
- **Indian Ocean Cooperation:** Mauritius plays a key role in regional organizations like the Indian Ocean Rim Association (IORA), contributing to regional stability and economic cooperation.
- India has been Mauritius' **"First Responder"** in crises like **COVID-19 (vaccine & medical aid) and the Wakashio oil spill (technical & disaster response support)**.

Defence Relations:

- India is Mauritius' primary **defence partner**, assisting in **maritime security, surveillance, and capacity building**.
- India has provided **fast patrol vessels, aircraft, and surveillance systems** to the Mauritian National Coast Guard.
  - *For instance*, transfer of a **Dornier aircraft** and an Advanced Light Helicopter **(Dhruv)** to Mauritius on lease.
- India also provided a **$100 million Line of Credit (LoC)** for Mauritius to procure defence equipment.
- **INS Nireekshak assisted in salvage operations** during the Wakashio oil spill crisis in 2020.
- **Mauritian defence personnel receive training in Indian military institutions** under the ITEC programme.

Diaspora, Culture and Tourism:

- **22,188 Indian nationals and 13,198 OCI cardholders** reside in Mauritius. A **special OCI provision** allows Mauritians of Indian lineage up to **7 generations** to apply.
- Mauritius is a **top recipient of India's ITEC programme**, with **400 training slots annually**.
- **ICCR scholarships & e-Vidya Bharati and e-Arogya Bharati distance learning programs** offer higher education opportunities to Mauritian students.
- Around **2,316 Indian students** are currently studying in Mauritius, mainly in **medicine, business, and hospitality**.
- **Visa-free travel** exists for Indians visiting Mauritius and gratis visas for Mauritians traveling to India.
- **Tourism recovery post-COVID**: Around **80,000 Indian tourists** visited Mauritius annually pre-pandemic, with numbers returning to normal.

India's Cultural Initiatives in Mauritius

Youth Programs
Programs like Know India Programs and NCC exchanges to strengthen youth ties.

Indira Gandhi Centre for Indian Culture (IGCIC)
The largest Indian cultural center abroad, showcasing India's diverse heritage.

Language Promotion
Initiatives like the World Hindi Secretariat to promote Hindi globally.

Educational Institutes
Institutions like Mahatma Gandhi Institute (MGI) promoting Indian culture, and philosophy.

Challenges in India-Mauritius Relations

- **Tax Treaty Misuse**: The **Double Taxation Avoidance Agreement (DTAA)** between India and Mauritius had been misused for **money laundering and round-tripping of funds**. While the 2016 amendment reduced such risks, concerns remain.

- **China's Expanding Influence**: China's **Free Trade Agreement (FTA) with Mauritius (2021)** strengthens its **Belt and Road Initiative (BRI)** in Africa and the Indian Ocean, challenging India's economic and strategic position.

- **Maritime Security Risks**: Mauritius lies along key **Indian Ocean shipping lanes**, making it vulnerable to **piracy, illegal fishing, and drug trafficking**. India plays a key role in securing these waters, but **external influences and resource constraints** pose challenges.

- **Concerns Over Agaléga Island Project**: While the **Agaléga Island** infrastructure projects enhance India's strategic presence, opposition groups in Mauritius **fear militarization** and a loss of sovereignty, creating political sensitivities.

- **Slow Implementation of Development Projects**: Despite India's **grants and LoCs**, several large-scale infrastructure projects **face delays** due to **bureaucratic hurdles, financial constraints, and regulatory issues**.

- **Mauritius' Economic Dependence on India**: Mauritius relies heavily on India for **trade, investment, and development aid**, making economic diversification a challenge.
  - This over-reliance can sometimes lead to **political and economic friction**.

- **Limited Private Sector Engagement**: While India's **public sector undertakings (PSUs) play a major role**, Indian private sector investment in Mauritius remains **relatively low**, limiting business-to-business collaboration.

- **Visa & Mobility Issues**: Although **visa-free travel** exists, bureaucratic hurdles occasionally impact **business professionals, students, and skilled workers** moving between the two countries.

Way Ahead

- **Strengthening Trade & Investment:** Expanding CECPA to include sectors like digital economy, fintech, and renewable energy will enhance economic ties. Promoting Mauritian exports and boosting private sector investments will help address trade imbalances.

- **Enhancing Strategic & Maritime Security:** Deepening cooperation under **Vision MAHASAGAR** will ensure regional security and economic growth. Strengthening Mauritius' coastal surveillance, anti-piracy efforts, and disaster response mechanisms will enhance maritime security.

- **Boosting Infrastructure & Development:** Timely completion of India-assisted projects requires streamlining regulations and improving monitoring. Expanding collaboration in smart cities, digital connectivity, and healthcare will support long-term development.

- **Deepening People-to-People & Cultural Ties:** Increasing scholarships, student exchanges, and skill development programs will strengthen education links. Promoting Indian cultural heritage through the **IGCIC and World Hindi Secretariat** will enhance cultural bonds.

- **Expanding Private Sector & Technology Collaboration:** Encouraging Indian investments in IT, financial services, and the blue economy will drive economic growth. Promoting joint ventures in AI, digital finance, and space technology will enhance innovation and cooperation.

CREATIVE ECONOMY

The Government has announced the establishment of a dedicated fund of $1 billion aimed at promoting and nurturing India's creative economy.

About

➲ Known as the **Orange Economy**, the creative economy includes economic activities driven primarily by **creativity, intellectual capital, culture, and innovation**.
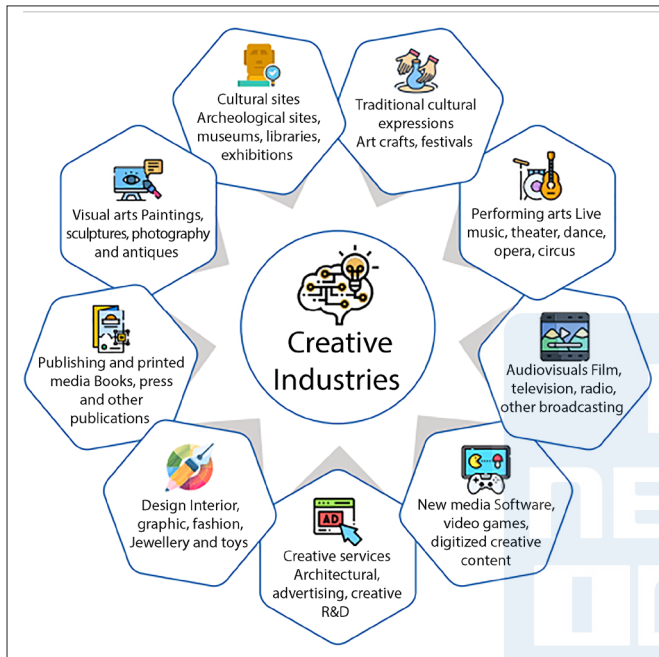
➲ **Key Characteristics:**

◆ **Knowledge-Based**: The creative economy thrives on specialized knowledge, creativity, skills acquired through formal education, vocational training, and cultural traditions, rather than physical or natural resources.

◆ **Intellectual Property (IP)**: Creativity is monetized through copyrights, patents, and trademarks, allowing creators to benefit economically from their original works.

◆ **Technology Driven**: It continuously evolves with technological advancements like AI, automation, digital media platforms, virtual reality, and blockchain, enhancing creative processes and distribution.

◆ **Cultural & Economic Value**: It transforms innovative ideas into commercial products and services, creating substantial economic value alongside enriching cultural heritage and diversity.

Significance of Creative Economy

➲ **Job Creation & Revenue Generation**: Globally, the sector employs nearly **50 million people**, with market value anticipated by Goldman Sachs to grow from **$250 billion in 2023 to $480 billion by 2027**, indicating substantial economic potential.

➲ **Export Potential**: India's creative sectors, notably Bollywood, software & IT services, fashion, textiles, handicrafts, and animation, hold immense international appeal, enhancing India's global trade footprint and foreign exchange earnings.

➲ **Multiplier Effect**: Stimulates growth in allied sectors like tourism, hospitality, transportation, and retail by attracting both domestic and international visitors and consumers.

➲ **Boost to MSMEs & Startups**: Provides significant opportunities for small businesses, freelancers, digital entrepreneurs, and new-age startups in emerging fields such as digital art, content creation, and gaming.

➲ **Women Empowerment & Inclusivity**: With women occupying around **45% of jobs** in creative industries, the sector promotes gender inclusivity, empowerment, and economic independence.

➲ **Soft Power & Cultural Diplomacy**: Through globally recognized cultural products like cinema, yoga, cuisine, literature, and performing arts, India projects its soft power, strengthening diplomatic and cultural relations globally.

➲ **Cultural Preservation & Diversity**: Facilitates the preservation, revival, and global promotion of traditional art forms, cultural practices, and heritage, enhancing cultural pride and identity.

➲ **Sustainability & Green Economy:** Creative industries depend on intellectual and human capital, not on the extraction of natural resources, making them environmentally sustainable.

◆ They also promote innovation in eco-friendly fashion, green design, and sustainable products, aligning with the Sustainable Development Goals (SDGs).

➲ **Growth of Digital Creators & Startups**: Accelerates opportunities for digital entrepreneurs, content creators (such as YouTubers, influencers), and online platforms, significantly expanding employment and innovation possibilities.

➲ **Technological Advancement & Integration**: Promotes adoption and advancement of cutting-edge technologies like artificial intelligence (AI), augmented reality (AR), virtual reality (VR), and blockchain, fundamentally transforming creative processes, experiences, and distribution channels.

Challenges

➲ **Poor Rural Internet Connectivity**: With only **41% internet penetration in rural India**, limited access to digital platforms restricts rural creators from fully participating in and benefiting from digital creative opportunities.

- **Cybersecurity & Digital Risks**: Increasing vulnerability of digital assets, intellectual property theft, online fraud, and threats to NFTs (Non-Fungible Tokens) demand robust cybersecurity measures and clear legal frameworks.
- **Weak Intellectual Property Protection**: India's prolonged patent processing times (**58 months** vs. China's **20 months**) and limited enforcement mechanisms discourage innovation and reduce creators' incentives for generating intellectual property.
- **Limited Access to Financing**: MSMEs and startups in the creative sector often face difficulties in accessing formal finance, venture capital, and loans due to perceived risks and lack of institutional support, limiting growth and scalability.
- **Market Fragmentation & Unorganized Structure**: Lack of centralized or systematic platforms for distribution, promotion, and sales of creative products results in fragmented markets, limiting creators' revenue potential and market reach.
- **Perception of Instability**: Creative careers continue to be viewed as less stable or viable compared to traditional fields like engineering, medicine, or civil services, influencing young people and families away from choosing creative professions.
- **Limited Global Recognition & Branding**: Indian cultural and creative products, despite vast potential, often suffer from limited global visibility, branding, and marketing strategies, impacting international competitiveness.

Steps Taken By the Government

- **National Mission on Cultural Mapping (NMCM):** It aims to build a nationwide database of artists and artisans to preserve India's cultural diversity while providing targeted funding, infrastructure, and better market access to boost local creative talent.
- **Startup India Initiative:** It supports creative startups in animation, design, gaming, and digital content through incubation, mentorship, tax benefits, and simplified compliance, promoting innovation and entrepreneurship in the creative sector.
- **Indian Institute of Creative Technology (IICT):** It is being established in Mumbai with ₹400 crore funding to offer specialized education in digital media, animation, and design, aiming to bridge skill gaps and create globally competitive creative professionals.
- **National Creators Award:** It honors outstanding digital innovators and content creators for impactful contributions in education, sustainability, culture, and public engagement, while celebrating and encouraging India's growing digital talent pool.
- **Zonal Cultural Centres (ZCCs):** These have been set up across seven zones in India by the Ministry of Culture to preserve folk art, music, and dance, functioning as cultural hubs for artist promotion and inter-zonal cultural exchange.

- **India International Film Tourism Conclave:** It promotes India as a global destination for film production and creative tourism, enhancing international collaborations and boosting India's soft power through cultural branding.
- **One District One Product (ODOP) Initiative:** It identifies and promotes unique crafts, textiles, and art forms from each district, offering skill development and marketing support to help artisans access national and international markets.
- **National Intellectual Property Rights (IPR) Policy (2016):** It strengthens India's IP ecosystem through faster processing, increased awareness, and improved protection of creative works, encouraging innovation and commercialization in creative industries.

Way Forward

- **Global Promotion & Cultural Diplomacy**: Organize international trade fairs, exhibitions, film festivals, and cultural exchanges to showcase Indian creativity, culture, and traditional knowledge, expanding global market presence.
- **Export Boost for Creative Industries**: Provide strategic export incentives, quality certifications, and marketing assistance specifically targeted towards handicrafts, films, animation, gaming, and digital art sectors.
- **Dedicated Financial Support & Credit Access**: Introduce specialized financial instruments such as credit guarantee schemes, microfinance loans, and crowdfunding platforms aimed at supporting creative MSMEs and entrepreneurs.
- **Startup & Digital Content Incentives**: Provide targeted incentives, tax breaks, funding support, and incubation facilities to startups, digital artists, online influencers, and gaming companies to boost innovation and entrepreneurship.
- **IP Rights Strengthening & Faster Processing**: Accelerate intellectual property processing and simplify IP registration to ensure creators can quickly monetize their innovations without fear of infringement.
- **Creative Districts & Regional Hubs**: Develop dedicated creative clusters or districts in Tier-2 and Tier-3 cities, providing infrastructure, studios, workspaces, marketplaces, and exhibition spaces to nurture local talent and startups.
- **Skill Development & Digital Education**: Integrate specialized courses in digital design, animation, AI, digital marketing, and multimedia content creation within universities, colleges, and vocational training institutes to bridge skill gaps.
- **Awareness & Career Guidance Initiatives**: Undertake nationwide campaigns, workshops, and seminars to change societal perceptions, highlighting creative careers' economic viability, employment prospects, and global opportunities.

REVISED CRITERIA FOR CLASSIFYING MSMEs

The government has notified significant revisions to the turnover and investment criteria for classifying Micro, Small, and Medium Enterprises (MSMEs), which will come into effect from April 1.

NEW MSME CLASSIFICATION CRITERIA AS PER UNION BUDGET 2025				
Enterprise Category	**Current Investment Limit**	**Revised Investment Limit**	**Current Turnover Limit**	**Revised Turnover Limit**
Micro Enterprise	₹1 crore	₹2.5 crore	₹5 crore	₹10 crore
Small Enterprise	₹10 crore	₹25 crore	₹50 crore	₹100 crore
Medium Enterprise	₹50 crore	₹125 crore	₹250 crore	₹500 crore

Implications of Revised Criteria for MSMEs

➲ **Expanded Coverage for MSMEs**: By increasing investment and turnover thresholds, more enterprises can now **qualify as MSMEs**, allowing a broader base of businesses to access government benefits, subsidies, and priority sector lending.

➲ **Enhanced Competitiveness & Growth**: The revised limits might enable MSMEs to **scale up operations** without fear of losing their MSME status, thus encouraging growth, innovation, and competitiveness in both domestic and global markets.

➲ **Better Credit & Scheme Access**: Enterprises newly qualifying under the updated criteria can gain eligibility for **collateral-free loans, interest subvention, and other MSME schemes**, improving access to formal credit and financial inclusion.

➲ **Alignment with Economic Realities**: The revisions reflect **inflation, rising input costs, and changing market dynamics**, ensuring that the classification system remains relevant and supports businesses in today's economic environment.

➲ **Boost to Self-Reliance & Exports**: By enabling larger units to remain under the MSME umbrella, this move supports India's **Atmanirbhar Bharat initiative**, strengthens the **manufacturing base**, and boosts **export potential** through policy support and market access.

Significance of MSMEs

➲ **Dynamic & Vibrant Sector**: MSMEs have evolved over five decades to become a pillar of India's **inclusive and sustainable economic development**. They contribute significantly to **GDP (30%)**, employment, exports, and entrepreneurship.

➲ **Major Employment Generator**: MSMEs provide employment to over **24.14 crore individuals**, making it the **second-largest employment sector after agriculture**. It also supports semi-skilled and low-skilled workers.

➲ **Women Empowerment**: Around **40% of registered MSMEs** are women-owned, promoting gender inclusivity, entrepreneurship, and financial independence among women.

➲ **Ancillary Support to Large Industries**: MSMEs function as **ancillary units**, supplying parts and services to large industries such as automobiles, textiles, and electronics, enhancing **industrial efficiency and integration**.

➲ **Promoting Rural Industrialization**: MSMEs help **industrialize rural and backward regions**, reducing **regional disparities** and facilitating **balanced economic growth** across states.

➲ **Contribution to Exports**: MSMEs contribute nearly **48% of India's total exports**, especially in sectors like **textiles, leather, gems & jewellery, handicrafts, and engineering goods**, strengthening India's global trade.

➲ **Boost to Innovation & Startups**: MSMEs foster **grassroots innovation**, especially in frugal technologies and low-cost solutions. Many successful **startups begin as MSMEs**, contributing to the startup ecosystem.

➲ **Key to Atmanirbhar Bharat (Self-Reliance)**: With over **6 crore units**, MSMEs are crucial in reducing import dependency, boosting domestic production, and supporting the **Make in India** initiative.

➲ **Environmental Sustainability**: Many MSMEs engage in **eco-friendly businesses** like organic farming, handicrafts, and renewable energy, aligning with Sustainable Development Goals (SDGs).

Challenges Faced by MSMEs

➲ **Limited Access to Finance**: Only **16%** of MSMEs have access to formal credit (SIDBI data); the rest depend on informal lenders, leading to high interest rates and constrained capital.

➲ **Low Technology Adoption**: Many MSMEs use **outdated tools and machinery**, reducing productivity and competitiveness.
  ◆ *For example*, textile MSMEs in **Surat** still rely on traditional looms.

➲ **Limited Market Access & Export Capacity**: Though MSMEs contribute to exports, most lack **export licenses, e-commerce access, and marketing support**, especially in states like Rajasthan and Uttar Pradesh.

➲ **Delayed Payments**: MSMEs face long delays in payments from large buyers and PSUs (often 3–6 months) affecting their **cash flow and working capital** management.

➲ **Skill Shortage**: Over **70%** of MSMEs face difficulty in recruiting skilled manpower, affecting quality, efficiency, and innovation (FICCI Survey).

➲ **Regulatory Compliance Burden**: Complex laws related to **taxation, labour, and environment** create compliance challenges, especially for micro and informal units.

- **Lack of Awareness**: Many MSME owners are unaware of government schemes, credit facilities, or market expansion tools, leading to **underutilization of support systems**.
- **Fragmented Structure & Informality**: A large share of MSMEs operate in the **informal sector**, limiting their access to formal credit, insurance, and legal protection.
- **Supply Chain Disruptions**: Events like the **COVID-19 pandemic** exposed the sector's vulnerability to supply chain shocks.

Initiatives to Boost MSMEs

- **Udyam Registration Portal**: Provides a **single-window registration** with Aadhaar and PAN, enabling MSMEs to avail government schemes and formal credit more easily.
- **Public Procurement Policy for MSEs**: Mandates **25% of government procurement** to be sourced from MSEs, with sub-targets for **women- and SC/ST-owned units**.
- **Entrepreneurship and Skill Development Programme (ESDP)**: Offers capacity-building and **entrepreneurial training** to potential and existing MSME entrepreneurs.
- **Credit Guarantee Fund Trust for MSEs (CGTMSE)**: Provides **collateral-free credit** up to ₹5 crore with guarantee coverage, enabling access to bank loans for small enterprises.

- **Pradhan Mantri Mudra Yojana (PMMY)**: Offers unsecured loans up to ₹20 lakh under Shishu, Kishore, Tarun, and Tarun Plus categories, supporting micro and small businesses.
- **Scheme of Fund for Regeneration of Traditional Industries (SFURTI)**: Promotes traditional industries by organizing artisans into **self-sustaining clusters** and providing infrastructure, skill upgradation, and marketing support.
- **Raising and Accelerating MSME Performance (RAMP)**: A **World Bank-supported initiative** (₹6,000 crore) launched in 2022 to **improve access to markets and credit, strengthen institutions**, and enhance MSME competitiveness.
- **CHAMPIONS Portal**: An integrated digital platform to **assist, support, and guide MSMEs** on finance, technology, and regulatory challenges in real-time.
- **National IPR Policy (2016)**: Promotes awareness and protection of **intellectual property rights** among MSMEs, enabling them to monetize innovations and protect brand identity.
- **Digital MSME Scheme**: Aims to encourage adoption of **cloud computing and digital tools** among MSMEs to improve efficiency, reduce costs, and enhance market presence.

MARKET SIZE

Registered MSMEs in India in FY24 (as of March 2024*)

- Small enterprise, 1.5%
- Medium enterprise, 0.8%
- Micro-enterprise, 97.7%
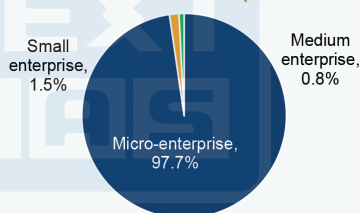
Trend point: As of March 2024, the Udyam Registration portal along with UAP registered 4,00,42,875* MSMEs.

Key States

Key MSME States	Percentage Share
Maharashtra	17.74%
Tamil Nadu	10.20%
Uttar Pradesh	9.34%
Gujarat	7.43%
Rajasthan	7.38%

Statutory Bodies

Khadi and Village Industries Commission (KVIC)

Coir Board

National Small Industries Corporation Limited (NSIC)

National Institute for Micro, Small and Medium Enterprises, (NI-MSME)

Mahatma Gandhi Institute for Rural Industrialisation (MGIRI)

IMPORTANCE OF BIOECONOMY FOR INDIA

The India BioEconomy Report 2024 estimates the sector's value at $165 billion, contributing over 4.2% to GDP, with a projected growth to $300 billion by 2030 and $1 trillion by 2047.

About:

- **Bioeconomy** refers to the industrial **use of biological resources (plants, animals, and microorganisms)**, and the replication of natural biological processes in the production of goods and services.
- **Bioresources** like plants or microorganisms are renewable, relatively cheap, and locally available, while natural processes are more sustainable and eco-friendly.
- A prime example of this is the **growing use of ethanol, which is produced through fermentation of crops** like sugarcane or corn by microorganisms, as a biological alternative to fuels traditionally derived from hydrocarbons.

10 PRINCIPLES FOR A SUSTAINABLE BIOECONOMY

Significance of Bioeconomy

- **Food & Agriculture Security:** GM crops improve yields by **21%**, biofertilizers boost soil health, and innovations like **Golden Rice** help tackle micronutrient deficiencies.
- **Healthcare & Affordable Access:** India leads in **vaccine and drug production**, with initiatives like **CERVAVAC** (HPV vaccine) and gene therapies, supplying **25% of WHO's vaccines**.
- **Economic Growth & Employment:** The bioeconomy is projected to generate **$1 trillion by 2047**, with a 90% rise in companies and major contributions from **biofuels and bioplastics**.

VALUE OF INDIA'S BIOECONOMY

in billion dollars

Year	Value
2020	86
2021	106.3
2022	137.2
2023	151.1
2024	165.7
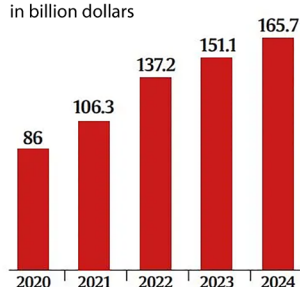
TOP CONTRIBUTING STATES (IN 2024)

State	Value*	Share of total value
Maharashtra	35.45	21.4%
Karnataka	32.4	19.5%
Telangana	19.9	12%
Gujarat	12.9	7.8%
Andhra Pradesh	11.1	6.7%
Tamil Nadu	9.9	6%
Uttar Pradesh	7.7	4.6%

- **Environmental Sustainability:** Promotes a **circular economy**, reduces fossil fuel use via biogas and ethanol, and supports eco-restoration through innovations like **TERI's Oilzapper**.
- **Energy Security through Bioenergy:** The **ethanol blending rate rose from 1.53% in 2014 to 15% in 2024**, with a target of **20% by 2025**, cutting crude oil imports by **173 lakh metric tons**, saving ₹**99,014 crores in forex**, and reducing **519 lakh metric tons of CO2 emissions**.
    - It boosted rural incomes with ₹**1.45 lakh crores to distillers** and ₹**87,558 crores to farmers**, and expanded fuel diversity through **E100 and E20 outlets** nationwide.
- **Climate Action:** Bio-based solutions help reduce emissions and support India's **Net-Zero 2070 target** by replacing carbon-intensive alternatives.

Key Government Initiatives

- **BioSaarthi Mentorship Initiative (2025):** A 6-month global program offering **personalized mentoring** for biotech startups, with expert guidance from India and abroad.
- **National Biotech Development Strategy (2020–25):** Targets a **$150 billion bioeconomy** by boosting **R&D, industry linkages**, and startup ecosystems.
- **BIRAC (Biotechnology Industry Research Assistance Council):** Provides **funding, mentoring, and incubation** for biotech startups to promote grassroots innovation and product development.
- **National Biopharma Mission:** Supports the development of **vaccines, biosimilars, and therapeutics**, enhancing India's global biopharma capacity.
- **PM JI-VAN Yojana:** Promotes **bioethanol and compressed biogas** from agri-waste, creating value for farmers and reducing carbon footprint.
- **SATAT & GOBARdhan Schemes:** Encourage **waste-to-energy** projects and bio-CNG plants, especially in rural areas, supporting clean energy and livelihoods.

- **BioE3 Policy (2024):** It aims to position India as a global biotechnology leader by promoting high-performance biomanufacturing, sustainability, and job creation.
  - It integrates economic growth, environmental protection, and employment generation.
- **Key Features:**
  - Innovation-driven support for R&D and entrepreneurship
  - Establishment of Biomanufacturing & Bio-AI hubs and Biofoundry
  - Focus on regenerative bioeconomy models for green growth
  - Expansion of India's skilled workforce
  - Alignment with 'Net Zero' carbon economy and 'Lifestyle for Environment' (LiFE) initiatives.

BioE3 Policy Targets Strategic Sectors for Sustainable Growth

- High-value bio-based chemicals
- Biopolymers & enzymes
- Smart proteins & functional foods
- Precision biotherapeutics
- Climate-resilient agriculture
- Carbon capture & utilization
- Marine and space research

Sectors
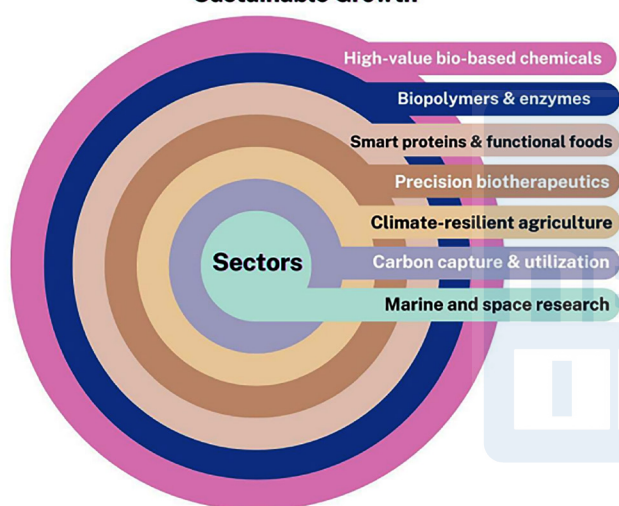
- **Global Biofuel Alliance (2023):** An India-led coalition with USA and Brazil to enhance global **biofuel trade and innovation**, reducing fossil fuel dependence.
- **Intellectual Property Guidelines (2023):** Promote the **commercialization of public-funded research**, faster IP approvals, and protection of indigenous biotech innovations.

Challenges to India's Bioeconomy

- **Fragmented Regulation:** Overlapping roles of agencies like **Department of Biotechnology, Genetic Engineering Appraisal committee, FSSAI** lead to delays in biotech approvals and policy execution.
- **Low Private Investment:** High risks and delayed returns deter venture capital in biotech startups, affecting scalability and innovation.
- **Weak IP Enforcement & Bio-piracy:** Poor protection and enforcement of IPRs result in the loss of indigenous knowledge and deter innovation.
- **Industry-Academia Gaps:** Limited collaboration between universities and industry restricts **commercialization of research**.
- **Dependence on Imports:** Critical biotech equipment and reagents are largely imported, limiting self-reliance in high-end manufacturing.
- **Skilled Manpower Shortage:** Shortage of professionals in **genomics, bioinformatics, molecular biology**, etc., hampers sector growth.
- **Public Skepticism:** Concerns over **Genetically Modified Organisms, lab-grown food, and synthetic biology** persist due to lack of awareness and clear regulations.
- **Ecological Risks:** Overuse of biological resources may threaten **biodiversity, land use patterns**, and long-term ecological balance.

WAY FORWARD

- **Effective Policy Implementation:** Ensure national rollout of **BioE3** with a central **National Bioeconomy Mission** and encourage states to align policies (like Assam).
- **Increase Investment & PPP Models:** Launch **dedicated bioeconomy funds**, offer **tax incentives**, and scale **public-private partnerships** in R&D and skill development.
- **Regulatory Reforms:** Introduce a **single-window biotech clearance system**, and harmonize frameworks across
  - Department of Biotechnology (DBT), Food Safety and Standards Authority of India (FSSAI), Genetic Engineering Appraisal Committee (GEAC) and Ministry of Environment, Forest and Climate Change (MoEFCC)
- **Strengthen IP & Research Ecosystem:** Fast-track biotech patents, create **specialized IP courts**, and promote applied research in **synthetic biology, bioinformatics, gene therapy**, etc.
- **Expand Biotech Infrastructure:** Establish **Bio-AI hubs, incubation centers, and biofoundries** in Tier 2/3 cities with shared labs and pilot-scale facilities.
- **Empower Startups & Grassroots Innovator:** Scale up **BioSaarthi**, strengthen BIRAC support, and promote **women-led and rural biotech enterprises**.

OKJÖKULL GLACIER AND EARTH'S CRYOSPHERE

Satellite images over three decades show the disappearance of Iceland's Okjökull, the first glacier declared dead in 2014 due to human-caused climate change.

About Okjökull Glacier:

➲ It was a **dome-shaped glacier** situated around the **summit crater on Ok**, a 1,200 meters shield volcano located 71 kilometers northwest of Reykjavík, Iceland.
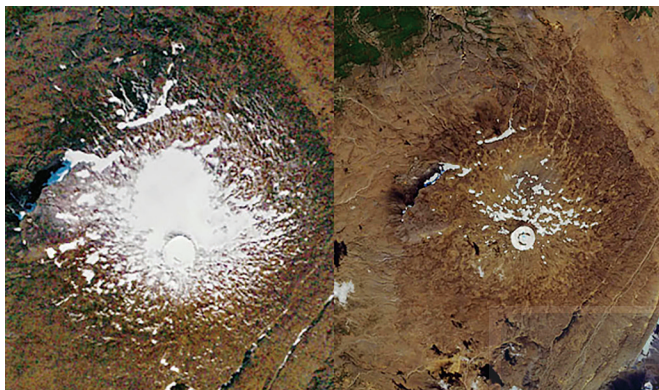
Additional Information

The **United Nations declared 2025 as the International Year of Glaciers' Preservation**, accompanied by the proclamation of the **21st March** of each year as the **World Day for Glaciers** starting in **2025.**

Earth's Cryosphere

➲ **Cryosphere:** The term "cryosphere" originates to the Greek word **'kryos' for frost or ice cold.**

- It includes the components of the Earth System at and **below the land and ocean surface that are frozen.**
- They include snow cover, glaciers, ice sheets, ice shelves, icebergs, sea ice, lake ice, river ice, permafrost, and seasonally frozen ground, and solid precipitation.
- 70% of Earth's fresh water exists as snow or ice and around 10% of Earth's land area is covered by glaciers or ice sheets.

Significance of Cryosphere

➲ **Climate Regulation:** The cryosphere reflects sunlight through the albedo effect, helping to regulate Earth's temperature by reducing heat absorption.

➲ **Sea Level Control:** It stores vast amounts of freshwater in glaciers and ice sheets. When they melt, it contributes directly to rising sea levels.

➲ **Global Water Cycle:** As glaciers and snowpacks melt, they provide crucial freshwater that supports ecosystems, agriculture, and human populations.

➲ **Habitat Provision:** The cryosphere provides specialized habitats for cold-adapted species, such as polar bears, penguins, and seals, that rely on these regions for survival.

➲ **Indicator of Climate Change:** Changes in the cryosphere, such as glacier retreat and reduced sea ice, are sensitive markers of global warming and climate change.

➲ **Permafrost Carbon Storage:** Permafrost acts as a carbon sink, storing organic material. Thawing permafrost can release greenhouse gases, contributing to further warming.
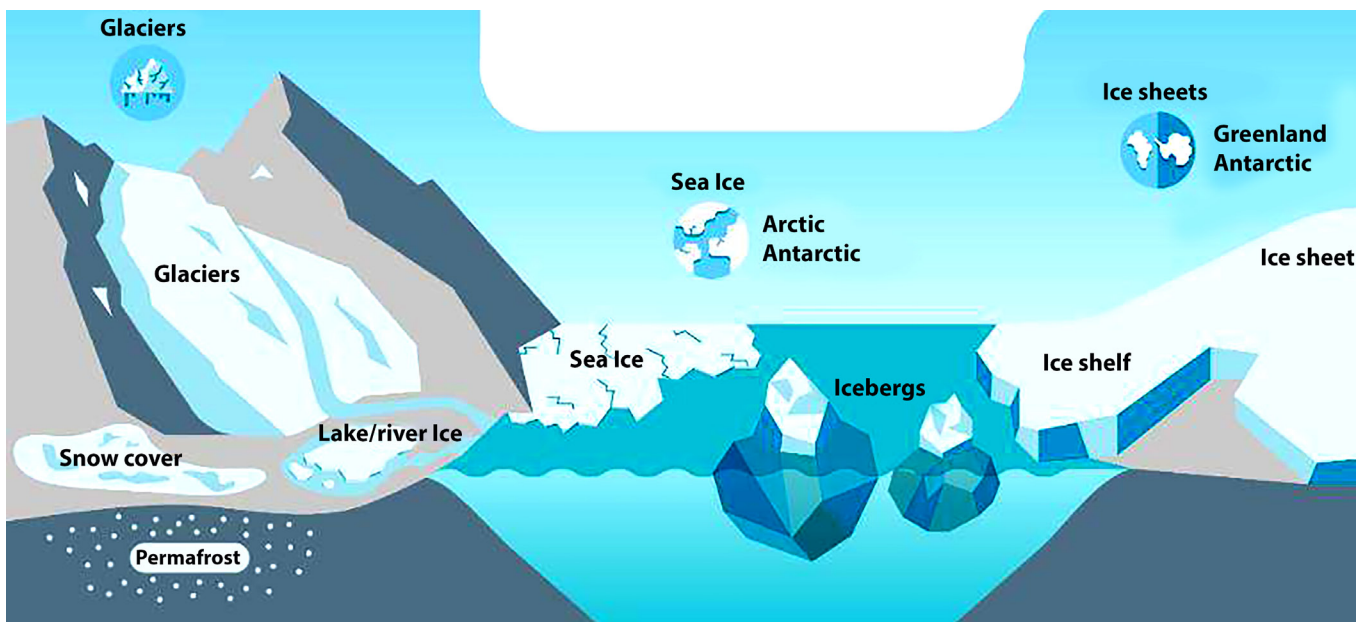
➲ **Hydroelectric Power Generation:** Meltwater from glaciers and snowpacks feeds into rivers that are crucial for generating hydroelectric power, which is a significant renewable energy source.

Hindu Kush Himalaya (HKH)

➲ **The HKH mountains** extend around **3,500 km over eight countries —** Afghanistan, Bangladesh, Bhutan, China, India, Nepal, Myanmar, and Pakistan.

  ◆ These mountains are also called the **"water towers of Asia"** because they are the origins of **10 crucial river systems on the continent** — Amu Darya, Indus, Ganga, Brahmaputra, Irrawaddy, Salween, Mekong, Yangtse, Yellow river, and Tarim.

  ◆ These river basins provide water to almost **one-fourth of the world's population** and are a significant freshwater source for 240 million people in the HKH region.

➲ **Melting of Hindukush:** The Hindu Kush Himalayan cryosphere is warming at twice the global average rate, according to the International Cryosphere Initiative.

  ◆ The region is most vulnerable to glacial disasters like outburst floods.

Threats to the Cryosphere

➲ **Climate Change:** Rising global temperatures caused by human activities, such as burning fossil fuels, lead to the accelerated melting of glaciers and ice sheets, threatening the cryosphere.

  ◆ Increased emissions of CO_2 and other greenhouse gases trap heat in the atmosphere, raising temperatures and contributing to the warming of the cryosphere.

➲ **Black Carbon Deposits:** Soot and dust, often from human activities like industrial emissions and wildfires, settle on ice and snow, reducing their albedo effect and accelerating their melting.

➲ **Ocean Warming:** Rising ocean temperatures due to climate change are eroding glaciers from below and melting sea ice, further destabilizing the cryosphere.

➲ **Deforestation:** Deforestation and land use changes increase global temperatures, which indirectly impact the cryosphere by contributing to atmospheric warming.

➲ **Changes in Precipitation Patterns:** Altered precipitation patterns due to climate change can reduce snowfall in mountainous and polar regions, affecting ice accumulation in glaciers and ice sheets.

Implications of Cryosphere Damage

➲ **Rising Sea Levels:** As glaciers melt, they contribute to rising sea levels, which can severely impact coastal communities and infrastructure.

➲ **Water Scarcity:** Glaciers serve as a vital source of freshwater for many regions. Their retreat and melting can lead to water shortages, affecting agriculture and other industries.

➲ **Changes in Weather Patterns:** The melting of glaciers can disrupt weather patterns, influencing temperature, precipitation, and other weather phenomena.

  ◆ The influx of freshwater into the ocean can destabilize the salinity balance of the North Atlantic, weakening the **Atlantic Meridional Overturning Circulation (AMOC).**

  ◆ This weakening may cause regional climate shifts, such as cooler temperatures in Europe and more intense hurricanes in the North Atlantic.

➲ **Ecosystem Disruption:** As glaciers melt, ecosystems are disturbed, resulting in changes to biodiversity, food webs, and overall ecological balance.

➲ **Increased Risk of Natural Disasters:** The melting of glaciers can increase the likelihood of natural disasters, such as flash floods and landslides, posing significant risks to human life and infrastructure.

➲ **Reduced Albedo Effect:** Melting glaciers reduce the Earth's ability to reflect sunlight, increasing the absorption of solar radiation and contributing to higher temperatures.

United Nations World Water Development Report 2025 (UNESCO)

Key highlights of 'Mountains and Glaciers: Water Towers' report

➲ Glaciers are melting faster than ever, with a significant loss of mass in the last few years.

  ◆ **Since 1975,** glaciers have lost over 9,000 billion tonnes of mass, equivalent to an ice block the size of Germany.

➲ **Decline in Snow Cover:** Snow cover has decreased in mountain regions, especially in spring and summer, with further declines expected.

➲ A global mean decline of 7.79% in snow cover between 1979 and 2022.

Global Initiatives to Conserve Cryosphere

➲ **Paris Agreement (2015):** A global treaty with the goal of limiting global temperature rise to well below 2°C, ideally

to 1.5°C, to reduce the impact on the cryosphere and other ecosystems. It encourages countries to reduce greenhouse gas emissions.

➲ **International Cryosphere Climate Initiative (ICCI):** Established in **2009** as a result of the COP-15, it is a network of senior policy experts and researchers that works with governments and organizations.
   ◆ It creates and implements initiatives designed to preserve the Earth's cryosphere.

➲ **CryoNet (WMO):** The World Meteorological Organization's Cryosphere Observing Network (CryoNet) aims to monitor and track changes in the cryosphere.

➲ **Sustainable Development Goals (SDGs):** The United Nations' SDGs, particularly Goal 13 (Climate Action) and Goal 15 (Life on Land), include objectives to reduce the impacts of climate change on ecosystems, including the cryosphere.

➲ **The Arctic Council:** It is a forum for Arctic countries to collaborate on environmental protection, sustainable development, and climate change mitigation in the Arctic region.

➲ **Global Ice Monitoring Initiatives:** Programs like the **Global Cryosphere Watch (GCW)** and the **European Space Agency's CryoSat mission** provide essential data for monitoring ice mass loss and other cryospheric changes globally.

Indian Initiatives to Conserve the Cryosphere:

➲ **National Action Plan on Climate Change (NAPCC):** India's NAPCC includes policies to address the impacts of climate change on the cryosphere, such as the **National Mission for Sustainable Agriculture** and the **National Mission on Strategic Knowledge for Climate Change**, which focus on improving resilience and reducing emissions.

➲ **Indian Himalayan Region (IHR) Programme:** This program aims to assess the state of glaciers in the Himalayan region and support sustainable development practices.
   ◆ It focuses on monitoring the health of glaciers and mitigating the impacts of climate change on this vital area.

➲ **The Great Himalayan National Park (GHNP):**
   ◆ This park, a UNESCO World Heritage Site, works towards preserving the alpine ecosystem and glaciers in the region.
   ◆ The park is part of India's larger efforts to conserve the biodiversity and cryospheric ecosystems of the Himalayas.

➲ **Glacier Monitoring in the Himalayas:** India has established several glacier monitoring stations in regions like Jammu and Kashmir, Himachal Pradesh, and Uttarakhand.
   ◆ These efforts aim to monitor the rate of glacier retreat and develop strategies for adapting to climate change impacts.

➲ **REDD+ (Reducing Emissions from Deforestation and Forest Degradation):** India is participating in the **REDD+ initiative**, which aims to reduce emissions through forest conservation.

◆ Healthy forests around glaciers help maintain the cryosphere by acting as carbon sinks and preventing further warming.

➲ **Himalayan Cryosphere and Climate Research Centre:** This center focuses on understanding the cryospheric changes in the Himalayan region, particularly glacier melt, and its impacts on local water resources, agriculture, and communities.
   ◆ It conducts research and provides data to support conservation efforts.

➲ **Biodiversity Conservation and Eco-tourism Initiatives:** In several regions, eco-tourism projects and community-based conservation programs focus on preserving the unique cryospheric landscapes and their biodiversity, especially in the Himalayan regions.
   ◆ These initiatives help raise awareness and generate sustainable income for local communities.

Way Forward:

➲ **Mitigate Climate Change:** To protect the cryosphere, it is crucial to reduce greenhouse gas emissions.
   ◆ This can be achieved by transitioning to renewable energy sources like wind and solar, improving energy efficiency across sectors, and promoting electric vehicles and sustainable infrastructure.

➲ **Protect Forests:** Protecting forests is essential for preserving the cryosphere. Combating deforestation, implementing afforestation projects, and promoting sustainable land-use practices can help maintain carbon sinks and prevent additional warming that threatens glaciers and ice sheets.

➲ **Enhance Monitoring and Research:**
   ◆ Investing in advanced monitoring systems, such as satellite technologies, is vital for tracking changes in glaciers and ice sheets.
   ◆ Supporting scientific research will help us understand cryospheric dynamics and develop effective strategies to mitigate climate impacts.

➲ **Adaptation Measures:** Implementing protective infrastructure like flood barriers and strengthening resilience in vulnerable regions is key.

➲ **International Cooperation:** Strengthening global climate agreements and increasing international cooperation on emission reduction targets is necessary.
   ◆ Collaborative research efforts will help share critical data and improve our understanding of the cryosphere's role in the broader climate system.

➲ **Public Awareness:** Raising awareness about the importance of the cryosphere can drive action toward its protection. Engaging local communities in conservation and sustainable practices will ensure broad support and collective responsibility in addressing cryospheric damage.

CORAL BLEACHING DEVASTATES WESTERN AUSTRALIA'S NINGALOO REEF

A severe mass coral bleaching event described as unprecedented is unfolding off Australia's western coast, impacting the Ningaloo Reef, a UNESCO World Heritage site.

About:

- **Meaning:** Corals are small, soft-bodied marine invertebrates (0.25-12 inches) from the **cnidaria** group.
  - They are sessile, meaning they attach themselves to the ocean floor and live in colonies of genetically identical polyps, which use tentacle-like hands to catch food.
- **Mutualistic Relationship with Algae:**Coral polyps host microscopic algae called **zooxanthellae** within their tissues.
  - In return for the compounds needed for photosynthesis, the algae provide the corals with nutrients like carbohydrates, essential for building their calcium carbonate skeletons and giving them vibrant colors.
- **Types of Corals:**
  - **Hard Corals (Hermatypic):** These corals build hard exoskeletons from calcium carbonate, forming the foundation of coral reefs.
  - **Soft Corals:** These corals do not have hard skeletons but grow on existing coral structures, contributing to the expansion of reefs over time. They are part of the largest living structures on Earth.
- **Optimum Conditions for Coral Survival:**
  - **Water Temperature:**Corals thrive in water temperatures between **23°C and 29°C**. Any significant deviation from this range can lead to coral stress and bleaching.
  - **Water Quality:**Corals require **clear water** with low levels of pollutants, sedimentation, and chemicals. High turbidity and pollution can block sunlight and hinder coral growth.
  - **Salinity:**Corals prefer **stable, saline water** with salinity levels around 35 ppt (parts per thousand). Significant changes in salinity can harm coral health.
  - **Light:** corals rely on photosynthesis by the **zooxanthellae** algae, they require **adequate sunlight** for at least **6-8 hours a day**. Shallow waters are ideal for sunlight penetration.

- **Stable pH:** Corals are sensitive to changes in ocean acidity. A **stable pH of around 8.1-8.4** is ideal for coral health, as ocean acidification harms their calcium carbonate skeletons.

Coral reef regions of the world
Mean maximum absolute decline, %

East Asia Share of total: 30.1% Decline: 18.9%

Carribean Share of total: 10.2% Decline: 12.3%

Pacific Share of total: 26.7% Decline: 24.7%

Australia Share of total: 16.1% Decline: 24%

Decline: 2005-2019
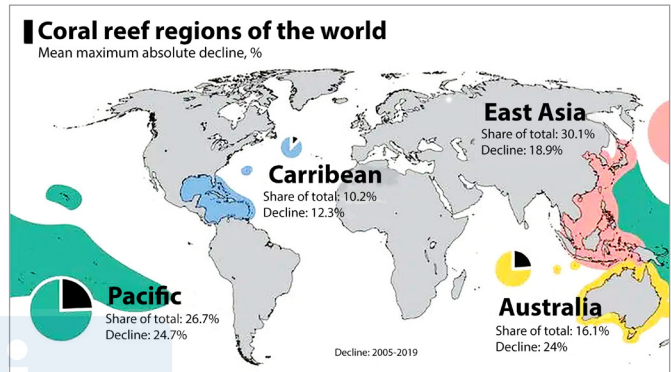
Benefits of Coral Reefs

- **Marine Biodiversity Hotspot & Support for Oceanic Food Chains:**Coral reefs are home to about 25% of marine species, supporting a rich variety of fish, invertebrates, and other marine organisms. They form the foundation of marine food webs, providing crucial habitats and breeding grounds for many species.
- **Coastal Protection Against Storms and Erosion:**Coral reefs act as natural barriers that absorb the energy of waves, protecting coastlines from erosion, flooding, and storm damage. This is especially vital for vulnerable coastal communities and ecosystems at risk from climate change and extreme weather.
- **Carbon Sequestration Aiding Climate Mitigation:** Coral reefs absorb carbon dioxide from the atmosphere, helping to mitigate climate change by storing carbon in marine ecosystems. This natural carbon sequestration process supports efforts to reduce greenhouse gas levels in the environment.

FOUR CORAL MASS BLEACHING EVENTS			
Mass Bleaching Event	**Year(s)**	**Affected Regions**	**Global Impact**
First Mass Bleaching	1998	Pacific Ocean, global occurrence	Resulted in the death of 8% of the world's coral reefs due to elevated sea temperatures from El Niño.
Second Mass Bleaching	2010	Global, especially in the Pacific, Indian, and Atlantic Oceans	Caused the destruction of 35% of coral reefs worldwide, linked to temperature anomalies.
Third Mass Bleaching	2014-2017	Guam, Western Pacific, North and South Pacific, Indian Ocean	Affected 56% of global coral reefs, marking the most widespread bleaching event in history.
Fourth Mass Bleaching	2020	Global, exacerbated by climate change and rising temperatures	Further accelerated the decline of coral reefs globally, worsening the ongoing coral health crisis.

- **Livelihoods and Boost to the Blue Economy:** Coral reefs sustain local communities by supporting fishing and ecotourism industries, providing jobs and boosting economies.
  - They are a critical part of the blue economy, which focuses on the sustainable use of ocean resources.
- **Source of Novel Medicines:** Marine organisms found in coral reefs are a source of bioactive compounds used in developing medicines like antivirals and anticancer agents. These compounds offer promising new treatments for various health conditions, advancing medical research.
- **Cultural and Aesthetic Value:** Coral reefs have deep cultural significance for many indigenous communities who rely on them for food, trade, and rituals. They also attract millions of tourists, offering recreational activities like diving and snorkeling, which support local economies.
- **Support for Climate Resilience:** Healthy coral reefs help marine ecosystems adapt to climate change by providing refuges for species threatened by rising sea temperatures and ocean acidification.
  - They enhance ecosystem resilience and help maintain biodiversity in the face of environmental shifts.

Causes Responsible for Coral Bleaching:

- **Rise in Sea Temperature:** Corals thrive in warm waters, but even a slight rise in sea temperature can harm them. Events like El Niño significantly elevate sea temperatures, leading to coral bleaching.
- **Ocean Acidification:** The increased carbon dioxide levels in the atmosphere are absorbed by oceans, raising their acidity. This inhibits the ability of corals to form their essential calcareous skeletons, threatening their survival.
- **Solar and Ultraviolet Radiation:** Reduced cloud cover due to changes in tropical weather patterns leads to increased solar and ultraviolet radiation, which can induce coral bleaching.
- **Infectious Diseases:** Bacteria like *Vibrio shiloi* can inhibit the photosynthesis process of zooxanthellae, the symbiotic algae in corals. These bacteria become more virulent with higher sea temperatures.
- **Chemical Pollution:** Increased nutrient concentrations from pollution promote phytoplankton growth, leading to higher competition for space between organisms and corals, ultimately harming the reef.
- **Human-Induced Threats:** Overfishing, agricultural and industrial runoff, coral mining, and coastal development all contribute to coral degradation and bleaching.

Consequences of Coral Bleaching:

- **Impact on the Food Chain:** Coral bleaching disrupts the species that depend on healthy reefs for food and shelter, affecting the entire marine food chain.
- **Loss of Biodiversity:** As corals die from bleaching, genetic and species diversity decline, threatening marine biodiversity.

- **Economic Decline:** Coral reefs attract tourists, particularly divers. Bleached reefs can discourage tourism, negatively impacting local economies that rely on reef-related activities.
- **Reduced Food Availability:** Coral bleaching can lead to shifts in fish populations, reducing fish catches for local fisheries and impacting food security.
- **Coastal Protection Impact:** Coral reefs act as natural barriers, absorbing wave energy and protecting coastal areas from erosion, storm damage, and flooding. Bleached and degraded reefs diminish this protective function.

Global Initiatives to Protect Corals:

- **International Coral Reef Initiative (ICRI):** ICRI is a global coalition focused on conserving coral reefs through collaboration among governments, NGOs, and local communities. It promotes sustainable management and raises awareness about coral reef protection.
- **Global Coral Reef Monitoring Network (GCRMN):** GCRMN is an international network that monitors the health of coral reefs globally, providing essential data for conservation. It informs policies and actions to protect and restore coral ecosystems.
- **Global Coral Reef Alliance (GCRA):** GCRA supports coral reef conservation through scientific research and policy advocacy. It fosters collaboration and promotes innovative solutions to combat reef degradation.

Indian Initiatives to Protect Corals:

- **Coral Reef studies:** In India, the MoEF&CC supports coral reef studies under the **Coastal Zone Studies (CZS)** initiative, focusing on the protection and conservation of coral ecosystems.
- **Zoological Survey of India (ZSI):** The ZSI, in collaboration with Gujarat's forest department, is involved in coral restoration efforts using **biorock** or **mineral accretion technology** to enhance coral growth and survival.
- **National Coastal Mission Programme:** This programme aims to protect and sustain coral reefs across India by implementing conservation measures, enhancing awareness, and supporting sustainable coastal practices.

Way Forward:

- **Stop Unplanned Development:** Halting unregulated coastal development is crucial to prevent further damage to coral reefs and help reverse their decline in affected areas.
- **Encourage Sustainable Fishing:** Promoting sustainable fishing practices and supporting ecotourism initiatives can contribute to coral conservation and help maintain healthy marine ecosystems.
- **Reduce Chemical Fertilizer Use:** Reducing the use of chemical fertilizers, pesticides, and herbicides, which are non-degradable and harmful to corals, is essential for reef protection.
- **Take Action Against Global Warming:** It is critical to implement measures that prevent actions contributing to global warming, as climate change poses the greatest threat to coral reef ecosystems.

ANTARCTIC CIRCUMPOLAR CURRENT

Scientists warn that the Antarctic Circumpolar Current (ACC) could slow by about 20% by 2050 under a high carbon emissions scenario.

About ACC

- It is the largest and most powerful wind-driven ocean current on Earth.
- It flows **clockwise around Antarctica**, driven by strong **westerly winds**, and is unique in that it **completely encircles the globe**, connecting the **Atlantic, Pacific, and Indian Oceans**.

Key Features and Significance

- The ACC acts as a **cold-water barrier**, preventing **warmer tropical waters** from reaching Antarctica. This plays a crucial role in maintaining the **integrity of Antarctic ice sheets**.
- It significantly contributes to the **global carbon cycle** by enabling the Southern Ocean to absorb large quantities of **heat and atmospheric carbon dioxide**, acting as a **major carbon sink**.
- The ACC also serves as a **biogeographic barrier**, restricting the movement of **invasive marine species** (such as bull kelp, shrimp, and mollusks) from other continents into the **vulnerable Antarctic ecosystem**.

Reasons for Weakening of the ACC

- **Changes in Ocean Salinity:** The rapid **melting of Antarctic ice shelves**, driven by **global warming**, has increased freshwater input into the Southern Ocean. This alters ocean salinity and density, weakening the formation of **Antarctic Bottom Water (AABW)**.

- AABW is a dense water mass that plays a key role in **deep ocean circulation** and supports the functioning of the ACC.
- **Shifting Wind Patterns: Climate change** has led to alterations in the **westerly wind belts** of the Southern Hemisphere. These winds are essential for driving the ACC, and any weakening or poleward shift reduces the current's strength.
- **Positive Feedback Loops: Melting sea ice** leads to more freshwater entering the ocean, causing surface warming.
  - This further reduces salinity, **exacerbating ice melt**, and forms a **feedback loop** that continuously weakens the ACC.
- **Increased Ocean Stratification:** Freshwater from ice melt increases **stratification**, which inhibits **vertical mixing** of ocean layers. This restricts the **upwelling of nutrients**, affecting marine productivity and disrupting the biological carbon pump.

Impacts of a Weakening ACC

- **Climate Variability and Extremes:** A weakened ACC can increase **climate variability**, contributing to more **extreme weather events** and **disruption of rainfall patterns** in the Southern Hemisphere, particularly in **Australia, South America, and southern Africa**.
- **Reduced Carbon Sink Efficiency:** The slowdown of the ACC reduces the **Southern Ocean's capacity to absorb carbon dioxide**, accelerating **global warming** and weakening the ocean's role in **climate regulation**.
- **Ecological Disruption:** A weakened ACC may allow **invasive species** to breach the Antarctic region, threatening **native biodiversity** and altering delicate **marine food webs**.
  - Slowing of the ACC could allow invasive species (e.g., southern bull kelp, shrimp, mollusks) to reach Antarctica, disrupting the local food web and affecting native species like penguins.
- **Global Ocean Circulation Impact:** The weakening of **AABW** and ACC may disrupt the **global thermohaline circulation**, including the **Atlantic Meridional Overturning Circulation (AMOC)**, with far-reaching implications for **global climate and ocean currents**.
- **Impact of Melting Ice Sheets:** Melting ice shelves add fresh water to the ocean, altering its salinity, weakening the Antarctic Bottom Water formation, and reducing the strength of the ocean jet around Antarctica.

About Ocean Currents

- **Definition:** are **persistent, directional movements** of seawater driven by various forces. They occur at both **surface and deep-ocean levels**, functioning as a **global conveyor belt** for **heat, nutrients, and salinity**.
  - These currents regulate **climate systems**, **biodiversity patterns**, and **marine productivity** across the globe.

Causes of Ocean Currents

➲ **Density Differences:** Variations in **temperature and salinity** create **density gradients** in seawater. **Cold, saline water is denser** and sinks, while **warm, less salty water rises**, setting up a convective flow that drives **thermohaline circulation**.

➲ **Solar Heating and Sea Surface Gradient:** Near the equator, **solar radiation** causes **thermal expansion** of ocean water, raising sea levels (~8 cm higher than mid-latitudes).
  ◆ This **slope** causes water to **flow downslope**—from **east to west**—initiating horizontal movement.

➲ **Wind Action:** Surface winds exert **frictional drag** on the water surface. Persistent global wind systems such as **trade winds and westerlies** drive surface currents.
  ◆ *Example:* The **Somali Current** reverses direction with the **Indian monsoons**.

➲ **Gravitational Forces:** Subtle variations in Earth's **gravitational pull**, combined with **landmass distribution**, influence current movement. Water flows from **higher gravitational potential** to lower zones.

➲ **Tidal Forces: Tidal currents**, driven by the **Moon and Sun's gravitational pull**, influence coastal and estuarine water movement and can interact with prevailing currents.

Influencing Factors

➲ **Local Topography: Ocean floor contours, coastal shapes**, and **submarine ridges** can deflect, accelerate, or split currents.
  ◆ *Example:* The **North Equatorial Current** splits into the **Caribbean Current** and **Guiana Current** upon reaching South America.

➲ **Coriolis Effect:** Due to Earth's rotation, moving water is deflected like **Rightward** in the **Northern Hemisphere and Leftward** in the **Southern Hemisphere**
  ◆ This causes the **clockwise rotation of currents** in the Northern Hemisphere and **anticlockwise in the Southern Hemisphere**, shaping major oceanic gyres.

Types of Ocean Currents

➲ **Based on Velocity:**
  ◆ **Drifts:** Slow, broad movements of water.
    ◦ *Example:* North Atlantic Drift
  ◆ **Currents:** Moderate velocity, flowing in defined directions.
    ◦ *Example:* Labrador Current
  ◆ **Streams**: Fast-moving and powerful water masses.
    ◦ *Example:* Gulf Stream

➲ **Based on Depth:**
  ◆ **Surface Currents**: Constitute ~10% of ocean water, occur within the **upper 400 meters**, and are primarily driven by **wind patterns**.
  ◆ **Deep-water Currents**: Make up ~90% of ocean circulation. These are driven by **thermohaline forces**, where **cold, dense waters sink** and flow across ocean basins, especially from **polar regions**.

BASED ON TEMPERATURE	
Cold Currents	**Warm Currents**
Flow from **higher to lower latitudes**, cooling nearby coasts.	Flow from **equator to poles**, warming adjacent land.
Typically on **west coasts** in low/mid-latitudes and **east coasts** in higher latitudes.	Typically on **east coasts** in low/mid-latitudes and **west coasts** in higher latitudes.
Examples: California Current, Canary Current, Benguela Current	*Examples:* Gulf Stream, Kuroshio Current, Agulhas Current

Global Ocean Conveyor Belt (Thermohaline Circulation)

➲ **Thermohaline circulation**, also known as the **global ocean conveyor belt**, is a worldwide ocean current system that circulates water across the planet. It involves a continuous interaction between **warm surface waters** and **cold, nutrient-rich deep waters**, facilitating the movement of heat, nutrients, and gases.

➲ **The Global Loop:** This circulation operates in a continuous cycle across the world's oceans:
  ◆ **Deep-water formation in the North Atlantic**: In regions near **Greenland and Norway**, the ocean water becomes **cold and salty**, increasing its **density**, which causes it to **sink**, initiating the conveyor belt.
  ◆ **Southward movement**: This **dense, deep water** flows **southward** as a **slow-moving current** towards **Antarctica**.
  ◆ **Joining the Antarctic Circumpolar Current**: On reaching Antarctica, the deep water merges with the **Antarctic Circumpolar Current (ACC)**, a powerful current that circulates around the Antarctic continent.
  ◆ **Upwelling in the Indian and Pacific Oceans**: As the current flows into the **Indian and Pacific Oceans**, it slowly **warms and rises**, causing **upwelling** that brings **nutrients to the ocean surface**.
  ◆ **Surface return flow:** The **surface water** then travels back via the **Indonesian archipelago**, around the **southern tip of Africa**, and re-enters the **Atlantic Ocean**, completing the **global loop**.

Thermohaline Circulation: The Great Ocean Conveyor Belt
Currents circulate water through the world's oceans like a giant conveyor belt, carrying heat from the tropics toward the poles and sending colder water back in deep ocean currents. Wind, temperature and salinity help drive them. This simplified map shows the pattern.
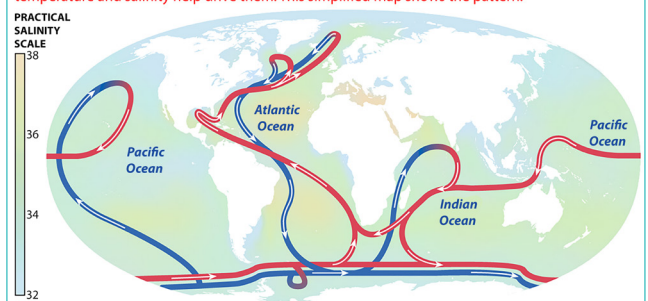
DISASTER MANAGEMENT (AMENDMENT) BILL, 2024

Parliament has passed the Disaster Management (Amendment) Bill, 2024 to update the Disaster Management Act, 2005, in light of emerging challenges such as climate change, and urban disasters.

Key Highlights of the Amendment Bill

- **Disaster Management Plan Preparation:** The Bill shifts the responsibility of preparing disaster management plans from **Executive Committees** to the **NDMA and SDMA**, ensuring greater accountability at the top level.
- **Expanded Functions of NDMA and SDMA:** The Bill mandates both authorities to take **periodic stock of disaster risks**, including those from **extreme climate events**, provide **technical assistance** to lower bodies, and recommend **minimum relief standards**.
- **Disaster Databases:** The Bill mandates the creation of **comprehensive disaster databases** at the **national and state levels** to support better risk assessment and resource allocation.
- **Urban Disaster Management Authorities (UDMAs):** The Bill empowers state governments to establish **separate UDMAs** in **state capitals and municipal cities**, recognizing the increasing risk of **urban disasters**.
- **State Disaster Response Force (SDRF):** The Bill allows states to form their own **SDRF**, define its **functions**, and set the **terms of service** for its personnel, enhancing local response capacity.
- **Statutory Status to National Committees:** The Bill grants statutory backing to the **National Crisis Management Committee (NCMC)** and the **High Level Committee (HLC)** to institutionalize their roles in national disaster response and relief funding.
- **Central Role of NCMC:** The **NCMC** will serve as the **nodal agency** for managing disasters with **national-level ramifications**, coordinating across ministries and agencies.
- **Role of HLC in Financial Aid:** The **HLC** will be responsible for providing **financial assistance** to state governments during disasters, ensuring timely fund disbursal.
- **Appointments to NDMA:** The Bill empowers the **NDMA** to determine the **number and category of officers**, with **prior approval from the central government**, and allows appointment of **experts and consultants** as needed.
- **Regulatory Powers of NDMA:** The Bill authorizes the **NDMA** to **formulate regulations** under the Act, subject to **central government approval**, enhancing its policymaking authority.

Issues in the Amendment Bill:

- **Centralization of Authority:** The Bill is criticized for **centralizing disaster management powers** at the national level, potentially **undermining the autonomy of state governments**.
- **Overlapping Jurisdictions:** The establishment of **Urban Disaster Management Authorities (UDMAs)** may lead to **jurisdictional conflicts** with existing **District Disaster Management Authorities (DDMAs)**, causing **duplication of efforts** and **confusion in disaster response**.
- **Financial Dependency of States:** By **centralizing decision-making and financial management**, the Bill may make states **overly dependent on the central government for funds**, limiting their **autonomy in disaster management and response**.
- **Insufficient Financial Devolution:** The Bill proposes the creation of new authorities like **UDMAs** without ensuring **adequate financial resources** for state and local governments, potentially **hindering effective disaster management** due to a mismatch between **responsibilities and resources**.
- **Narrow Definition of Disasters:** The Bill retains a **restricted definition of "disaster"**, failing to include **climate-induced events** such as **heatwaves**, which limits the scope of the **National and State Disaster Response Funds** and restricts **financial assistance for such events**.
- **Potential for Bureaucratic Delays:** Granting **statutory status** to multiple committees like the **National Crisis Management Committee (NCMC)** could **complicate the chain of command**, leading to **delays in disaster response** due to **overlapping functions and authorities**.
- **Lack of Clarity in Roles and Responsibilities:** The Bill does not clearly delineate the **roles and responsibilities** between **newly established bodies** and existing ones, which may lead to **confusion and inefficiencies** in disaster management operations.
- **Overlooking Local Governance Structures:** The Bill has been criticized for **overlooking participatory governance**, **accountability**, and **efficiency**, which are crucial for effective disaster management at the **local level**.

Way Forward

- **Decentralization of Authority:** Empower **State Disaster Management Authorities (SDMAs)** and **District Disaster Management Authorities (DDMAs)** with greater autonomy to ensure that disaster management strategies are tailored to local contexts and needs.
- **Clear Delineation of Roles:** Define specific roles and responsibilities for newly proposed bodies like the **Urban Disaster Management Authorities (UDMAs)** to prevent jurisdictional overlaps with existing agencies such as DDMAs.

- ⮞ **Adequate Financial Allocation:** Ensure that both central and state governments allocate sufficient funds to local bodies, enabling effective disaster preparedness and response without over-reliance on central assistance.
- ⮞ **Inclusive Definition of Disasters:** Broaden the legal definition of disasters to encompass emerging threats like **heatwaves** and **zoonotic diseases**, facilitating appropriate resource allocation and response strategies.
- ⮞ **Community Engagement:** Strengthen the involvement of local communities, **Non-Governmental Organizations (NGOs)**, and **civil society organizations** in disaster management planning and execution, recognizing their critical role as first responders.

- ⮞ **Restoration of Relief Standards:** Reinstate provisions that establish minimum standards of relief for disaster victims, ensuring consistent and equitable support across different regions.
- ⮞ **Capacity Building:** Invest in training programs for local authorities and communities to enhance their disaster preparedness and response capabilities, fostering a culture of resilience.
- ⮞ **Integration of Technology:** Leverage advancements in technology, such as **Artificial Intelligence (AI)** and **real-time monitoring systems**, to improve disaster prediction, preparedness, and response mechanisms.

DISASTER MANAGEMENT RECYCLES

INDIVIDUAL DISASTER RESPONSE
Immediate secure your safety and of other/rescue & provide first aid/secure supplies

RESPONSE/RELIEF
Immediate intervention (Search & rescue, security, Food, Water, Shelter & Sanitation, Clothes, Medical & trauma care)
Duration: Short-term

DISASTER STRIKES

PREPAREDNESS
Contingency Planning/ Warning and Evacuation/consolidate preparations for next disasters

REHABILITATION
Restoration of basic services and functions
Duration: Weeks to months

MITIGATION (RISK ASSESSMENT PREVENTION)
Hazard mapping/ Hazard and vulnerability assessment/structural and non-structural measures

RECONSTRUCTION
Full resumption of services, plus preventive measures.
Duration: Months to years

Pre-disaster: Risk reduction

Post-disaster: Recovery

SPACE DEBRIS

A 500-kg metal object, suspected to be space debris, crashed in Kenya (2025),
reigniting global concerns over space safety, liability, and regulation gaps.

About Space Debris

- According to the **United Nations Committee on the Peaceful Uses of Outer Space (UN-COPUOS)**, **space debris** consists of **non-functional, man-made objects**, including fragments, that are present in **Earth's orbit** or **re-entering the atmosphere**, with no further operational purpose.
- Most debris is concentrated in **Low Earth Orbit (LEO)** (up to 2,000 km), but some is in **Geostationary Orbit (GEO)** (35,786 km).
- According to the **European Space Agency (ESA, 2022)**, more than **30,000 large debris objects** and around **200,000 fragments** measuring between **1 to 10 centimetres** are being actively tracked in Earth's orbit.

Types of Space Debris:

- **Large debris**: Defunct satellites, rocket boosters.
- **Small debris**: Collision fragments, disintegrated spacecraft parts.
- **Microscopic debris**: Paint flakes, dust particles, metallic fragments.

Factors Causing Space Debris:

- **Explosions of Fuel Tanks or Battery Systems in Orbit:** Malfunctions can lead to the release of debris.
- **Satellite Collisions or Fragmentation:** Accidental collisions or intentional destruction (e.g., anti-satellite tests) contribute to debris proliferation.
- **Lack of Post-Mission Disposal Systems:** Satellites left in orbit without deorbiting plans remain as debris.
- **Uncontrolled Re-entries from Mega-Constellation Projects:** Large constellations increase the risk of debris from uncontrolled re-entries.
- **Frequent Satellite Launches:** The rapid growth of satellite launches has significantly increased orbital congestion. Companies like SpaceX Starlink, Amazon Kuiper, and OneWeb plan to launch over 100,000 satellites by 2030.
- **Abandoned and Defunct Satellites:** Many satellites become non-functional after their operational life but remain in orbit as space junk. There are around 3,000 decommissioned satellites currently in space.

THE GROWING PROBLEM OF SPACE DEBRIS

EARTH

Debris in Low Earth Orbit

- 10 cm and Larger = 20,000 + objects
- 1 – 10 cm = 500,000 objects
- Under 1 cm = over 10 million untrackable objects

Low Earth Orbit: approx. 160 to 2,000 km asl

International Space Station approx. 300 to 400 km asl

Tracking and Speed

- Most debris is tracked using radar by the US Department of Defense.
- Orbiting debris moving over 28,000 kph (23 times the speed of sound)

Potential Damage

At high speeds, even paint flecks can cause serious damage to satellites, spacecraft and the ISS. Every collision creates more debris, producing a cascading problem.

GEO and the Larger Problem

The world depends on satellites in geosynchronous Earth orbit for communications and GPS. But debris is largely untrackable at this orbit, meaning that cascading collisions could make it unusable.

Geosynchronous Earth Orbit: approx. 35,786 km asl
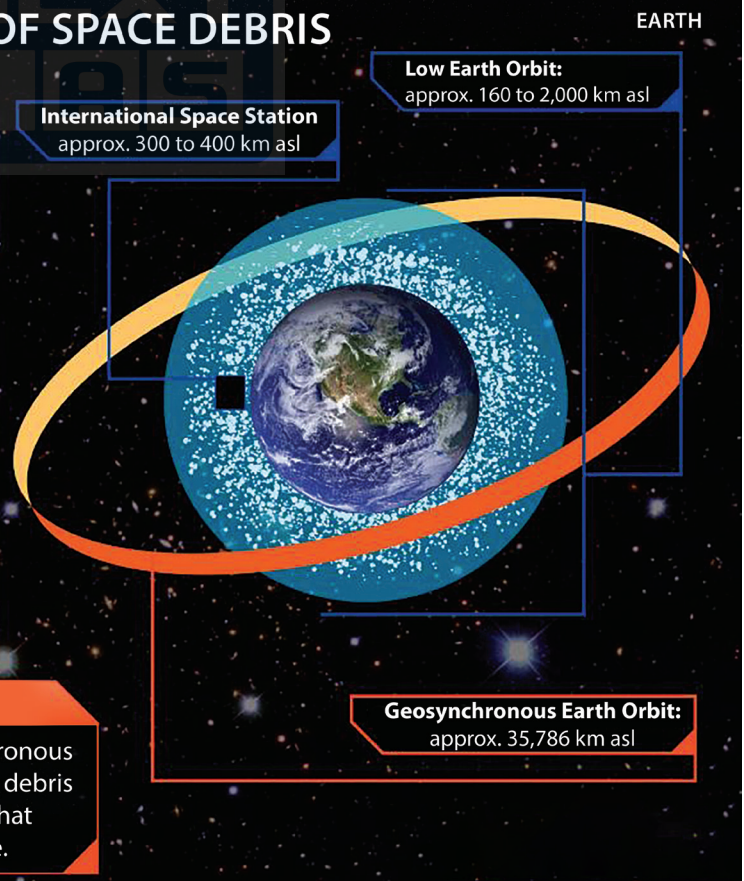
- **Anti-Satellite Weapon Tests:** Some countries have intentionally destroyed satellites during tests, creating large amounts of debris.
  - *For example*, China's 2007 test created 25% of all trackable space debris at the time.

Debris Incidents: A Timeline of Spacecraft Encounters

2022
SpaceX capsule debris found in Australia

2023
Falcon 9 rocket debris landed in Australia

2024
Russian satellite debris disintegrated over the US

International Legal Framework

- **Outer Space Treaty (1967):** It holds states responsible for all national space activities, including those by private companies. However, it does not clearly cover space debris.
- **Liability Convention (1972):** It states that countries are **absolutely liable** for damage caused by their space objects on Earth. But enforcement is weak, and compensation is often delayed or partial.
- **UN Space Debris Guidelines:** The UN recommends that satellites be **deorbited within 25 years**, but only **30% of missions follow this**.
- **COPUOS (Committee on the Peaceful Uses of Outer Space):** This UN body works to promote safe and sustainable space use. India has been a member since its founding in 1958.
- **IADC (Inter-Agency Space Debris Coordination Committee):** Formed in 1993, this committee shares data and recommends best practices for debris mitigation. ISRO is an active member.

Threats and Challenges from Space Debris

- **Kessler Syndrome**: A chain reaction of collisions can create so much debris that certain orbits become unusable.

- **Risk to Astronauts and Space Stations**: The **International Space Station (ISS)** has changed its course 32 times since 1999 to avoid debris.
- **Less Room for Future Missions**: Debris takes up valuable space in orbit, reducing safe zones for future satellites.
- **Environmental Impact**: Space debris pollutes Earth's orbit, raising concerns about the long-term sustainability of space activities.
- **International Tensions**: Countries may blame each other for debris-related incidents.
  - *Example:* The US criticized Russia for an anti-satellite test that endangered the ISS.

Mitigation and Future Solutions:

- **Global Coordination and Data Sharing:** Countries should collaborate more closely to share tracking data and develop joint space traffic management systems. There is a need to strengthen the regulations of the **United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS).**
- **Technological Innovation:** Technologies like robotic arms, harpoons, magnets, and lasers should be further developed to capture and remove debris from orbit. Develop active debris removal missions (e.g., ADRAS-J by Astroscale, ClearSpace-1 by ESA).
- **Mandatory Deorbit Plans:** All satellites should be required to include **end-of-life disposal strategies**, ensuring their safe removal from orbit after mission completion to prevent the creation of additional space debris.
- **National Policy Reforms:** Governments should enforce **collision-avoidance protocols** and **controlled re-entry planning** as mandatory requirements for granting **launch approvals**, ensuring responsible conduct in outer space activities.
- **Space Sustainability Practices:** Promote reusable rockets, graveyard orbits for defunct satellites, and debris-neutral technologies.

INITIATIVES TAKEN FOR SPACE DEBRIS MANAGEMENT			
Initiative	Country/Organisation	Year	Details
ClearSpace-1	European Space Agency (ESA)	2026	Active debris removal mission targeting space debris in orbit.
Clean Space Initiative	European Space Agency (ESA)	2012	Promotes green space technologies and reduces space pollution.
Space Situational Awareness (SSA) Control Centre	India (ISRO)	2020	National hub for tracking and managing space traffic and debris.
ISRO System for Safe and Sustainable Operations Management (IS4OM)	India (ISRO)	2022	Monitors threats to Indian satellites and promotes sustainable space operations.
Debris-Free Space Missions (DFSM)	India (ISRO)	2024	Aims to make all Indian space missions debris-free by 2030.

SEABED WARFARE

Seabed warfare is becoming a key part of global conflicts due to growing reliance on undersea infrastructure, rising cyber threats, and the race for deep-sea resources.

About

➲ Seabed Warfare refers to military operations conducted on, from, or targeting the ocean floor using advanced maritime and autonomous technologies.

➲ It includes the use of Unmanned Underwater Vehicles (UUVs), Remotely Operated Vehicles (ROVs), AI-powered submersibles, and sensor networks.

➲ In this, Adversaries target the Undersea communication cables, energy pipelines, and surveillance systems.

Reasons Behind Rise in Seabed Warfare:

➲ **Increased reliance:** Over **95% of international internet traffic** depends on **submarine fiber-optic cables**, which are vulnerable to sabotage.

➲ **Advancement of deep-sea technology:** Nations are moving from basic cable disruption to advanced **surveillance, reconnaissance**, and **AI-driven cyber operations** on the ocean floor.

➲ **Potential of ocean economy**: According to the **Organization for Economic Co-operation and Development (OECD)**, the **ocean economy** may grow to **$3 trillion by 2030**, driven by activities like **deep-sea mining**, **subsea communications**, and **energy exploration**.

➲ **Increased geopolitical interests**: The **French Navy** released a dedicated **Seabed Warfare Doctrine** in **2022**, with countries like **USA, UK, China**, and **Russia** showing significant interest and capability development.

➲ **Security of the Indo-Pacific region**: This region hosts vital **undersea cables**, **energy pipelines**, and **maritime routes**. Rising **Chinese influence** has heightened concerns over the safety of this infrastructure.

➲ **Recent sabotage incidents**: The **Nord Stream pipeline explosions (2022)** and **cable disruptions in the Baltic Sea (2023–2024)** underscore the need for seabed security as a part of national defense.

➲ **Need for seabed surveillance:** Nations are increasingly deploying **underwater sensors and UUVs** to track **submarine movements**, forming the basis of **next-generation naval strategy**.

Strategic Importance of the Ocean Floor:

➲ **Global Communication Backbone**: Approximately **99% of international data traffic** traverses through undersea fiber-optic cables, facilitating global internet connectivity, financial transactions, and secure governmental communications.

➲ **Energy Transportation and Security**: Seabed pipelines are critical conduits for transporting oil and natural gas between nations. *For instance,* the **North Sea** hosts around **3,000 kilometers of gas pipelines**, underscoring the seabed's role in energy distribution.

➲ **Economic Significance**: The seabed is rich in resources like **polymetallic nodules** and **rare earth elements**, essential for various industries. The **OECD** projects the ocean economy could reach **$3 trillion by 2030**, highlighting the seabed's economic potential.

➲ **Military and Surveillance Operations**: Nations deploy **underwater sensor networks** and **submarine fleets** for surveillance, intelligence gathering, and strategic deterrence, making the seabed a pivotal arena for defense operations.

India's Preparedness and Strategic Response:

➲ **Submarine fleet modernization**: Through **Project 75 and Project 75I**, India is acquiring **Scorpène-class submarines** and planning **next-gen platforms**. It also operates **nuclear submarines** like **INS Arihant**.

➲ **Deep-sea resource exploration and protection**: The **Deep Ocean Mission** aims to explore **minerals**, map the **seabed**, and secure **strategic underwater resources**.

➲ **Use of autonomous systems**: Deployment of **Autonomous Underwater Vehicles (AUVs)** and **sensor systems** by agencies like **NIOT** for **coastal and deep-sea monitoring**.

OPERATIONAL SCOPE OF SEABED WARFARE

Physical Attacks
Cutting cables or damaging pipelines

Cyber Operations
Targeting data flows through undersea cables with malware or espionage tools

Surveillance
Deploying sensors or tapping cables for intelligence gathering

⮕ **Focus on Indo-Pacific infrastructure security**: India's strategic posture is aligned with the need to secure **undersea assets** in the face of growing **Chinese maritime assertiveness**.

⮕ **Maritime cooperation under QUAD**: India collaborates with Japan, Australia, and the USA to enhance maritime domain awareness and protect undersea infrastructure in the Indo-Pacific.

MAJOR GLOBAL PLAYERS AND INCIDENTS	
Country/ Group	**Key Activities**
United States	Operates **Seawolf-class** and **Virginia-class submarines** equipped for **seabed operations** and **cable interference**.
Russia	Uses submarines like **Losharik** and **Yantar**, suspected of **tapping/sabotaging undersea cables**, including the **Nord Stream incident**.
China	Built the **Great Underwater Wall** in the **South China Sea**, using **AI-driven surveillance systems**.
NATO & European Nations	Increased focus on **seabed infrastructure protection** after **Nord Stream & Baltic Sea sabotage**; **UK and France** leading in **seabed defense investments**.

Challenges in Securing the Seabed:

⮕ **Legal and Regulatory Gaps**: The **United Nations Convention on the Law of the Sea (UNCLOS)** provides a framework for maritime governance but lacks robust enforcement mechanisms, especially concerning military activities on the seabed.

◆ *For instance*, **Article 113** obligates states to criminalize the breaking or injury of submarine cables or pipelines but does not grant authority for enforcement measures against foreign ships.

⮕ **Technological Vulnerabilities**: The increasing sophistication of **Unmanned Underwater Vehicles (UUVs)** and **cyber warfare techniques** poses significant threats to undersea infrastructure. These technologies can be exploited for espionage or sabotage with plausible deniability.

⮕ **Attribution Difficulties**: Identifying perpetrators of undersea sabotage is inherently challenging due to the secretive nature of underwater operations, complicating diplomatic and military responses.

⮕ **Resource Constraints**: Many nations lack the specialized assets, such as **surveillance ships** and **submarine detection systems**, necessary to monitor and protect extensive undersea infrastructure effectively.

⮕ **Environmental Concerns**: Military activities on the seabed can disrupt marine ecosystems, leading to long-term environmental consequences that are difficult to mitigate.

⮕ **Economic and Strategic Dependency:** Modern economies are deeply reliant on undersea cables that carry over 95% of global internet traffic and energy pipelines.

◆ These systems are single points of failure, making them strategic targets during conflict or crisis.

⮕ **Dual-Use Dilemmas:** Many undersea systems—like cables, sensors, and seabed stations—have both civilian and military applications, making it difficult to regulate or protect them without militarizing the seabed, contrary to UNCLOS's peaceful-use principle.

WAY FORWARD

⮕ **Strengthening International Legal Frameworks:** Enhancing and updating **UNCLOS** to address contemporary challenges in seabed warfare, including establishing clear regulations and enforcement mechanisms for military activities on the ocean floor.

⮕ **Investing in Advanced Surveillance Technologies:** Developing and deploying **AI-powered underwater drones**, **autonomous monitoring systems**, and **satellite-based tracking** to detect and deter unauthorized activities near critical undersea infrastructure.

⮕ **Enhancing Multilateral Cooperation:** Fostering alliances and collaborative initiatives, such as **NATO's Critical Undersea Infrastructure Network**, to share intelligence, conduct joint patrols, and coordinate responses to threats against undersea assets.

⮕ **Building Redundant and Resilient Infrastructure:** Designing undersea networks with redundancy and rapid repair capabilities to minimize the impact of potential disruptions.

⮕ **Public-Private Partnerships:** Engaging with private sector stakeholders, including telecommunications and energy companies, to develop comprehensive strategies for protecting undersea infrastructure.

⮕ **Environmental Safeguards:** Implementing measures to minimize the ecological impact of seabed military operations, ensuring the preservation of marine biodiversity.

WOMEN REPRESENTATION IN PANCHAYATS

The Ministry of Panchayati Raj has highlighted the rise of proxy representation in local governance, where male relatives act for elected women, weakening gender empowerment.

Status of Women in Panchayats

➲ **Women's Reservation in PRIs:** The 73rd Constitutional Amendment Act, 1992 institutionalized Panchayati Raj Institutions (PRIs) and mandated 33% reservation for women in Gram Panchayats, Block Samitis, and Zilla Parishads.
   ◆ Later many states raised it to 50%.

➲ **Present Status:** As of 2023, there are over 1.45 million Elected Women Representatives (EWRs) in 2.5 lakh Panchayats, constituting more than 46% of all elected members in PRIs.

➲ **Global Standing:** The Global Gender Gap Report 2023 ranked India among the top countries in women's local governance participation, with above 44% representation.

Key Challenges Faced by Women Panchayat Members

➲ **Patriarchal Control and Proxy Leadership:** The prevalence of **"Pradhan Pati"** or **"Sarpanch Pati"** syndrome results in **male relatives taking over roles**, reducing elected women to **figureheads**, particularly in **Rajasthan, Bihar, and Madhya Pradesh**.

➲ **Inadequate Training and Political Awareness:** A large number of EWRs enter public life with **limited understanding of administrative processes**, **legal frameworks**, and **budgeting**, making them **dependent on others** for governance.

➲ **Resistance from Bureaucracy and Peers:** Bureaucrats and male **colleagues** often show **bias** or **non-cooperation**, delaying implementation and limiting the **effectiveness of women-led panchayats**.

➲ **Economic Dependence:** Most rural women are **financially dependent on male family members**, limiting their **autonomy in decision-making** and restricting access to **resources or credit**.

➲ **Gender-Based Violence:** Women representatives face **verbal abuse**, **harassment**, and **physical violence**, which deters participation or leads to **forced resignations**.

➲ **Dual Burden of Responsibilities:** Women are expected to manage **domestic duties**, **childcare**, and **public office**, creating **time and energy constraints** that hamper their governance role.

➲ **Social and Caste-Based Discrimination:** Women from **Scheduled Castes (SCs)**, **Scheduled Tribes (STs)**, and **Other Backward Classes (OBCs)** face **intersectional discrimination**, especially in **conservative rural settings**.

➲ **Restrictive Norms:** States like **Odisha and Rajasthan** disqualify candidates with **more than two children**, impacting women who have **limited control over family planning**.

➲ **Lack of Security:** The absence of **safe transport** and **security measures** restricts women from **attending late meetings** or traveling to **remote areas**.

➲ **Communication Barriers:** Official correspondence and rules are often in **English**, creating a **language barrier** that affects **understanding and participation**.

➲ **Leadership Deficit:** A **lack of leadership training and confidence** prevents many women from asserting themselves; **77% of Elected Women Representatives (EWRs)** feel **unable to effect real change** at the grassroots.

Role of Women in Local Governance

➲ **Enhanced Participation in Elections:** The reservation of at least one-third of seats for women under the Act has significantly boosted their engagement in the electoral process, both as voters and candidates.
   ◆ It serves as a foundational step toward grooming future women leaders for national politics.
   ◆ Notably, women's participation in grassroots activities such as **Gram Sabha meetings has increased to 68–78%**, reflecting heightened civic engagement.

➲ **Contribution to Rural Development:** Women are playing an increasingly active role in rural development across all levels—from contributing as manual workers to engaging in policy-making processes.
   ◆ Their involvement ensures that development initiatives are more inclusive and community-centric.

➲ **Greater Role in Decision-Making:** The presence of women, both elected and non-elected, in Panchayati Raj Institutions has risen due to statutory reservation.
   ◆ This has acted as a strong **pull factor**, encouraging them to attend meetings and voice opinions on local governance, welfare schemes, and everyday issues affecting their communities.

➲ **Catalysts for Social Change:** Women leaders at the grassroots are emerging as **agents of social transformation,** challenging regressive norms, raising awareness, and confronting issues such as discrimination and gender-based violence, thereby initiating positive social change.

➲ **Reduction in Corruption and Abuse of Power:** The involvement of women representatives has disrupted traditional **nexus-driven power structures**, especially those involving local officials and male politicians.
   ◆ This has resulted in a **notable decline in corruption** and reduced the influence of local muscle power, enhancing transparency and accountability.

➲ **Tackling Violence Against Women:** Incidents of **domestic violence and gender-based abuse** have decreased in regions led by women sarpanches or pradhans.

- Victims feel more comfortable reporting grievances to women representatives, who actively intervene and ensure justice.
- **Decrease in Caste-Based Violence:** The participation of women from marginalized communities has weakened the grip of **upper-caste patriarchal dominance**, contributing to a decline in caste-based oppression and promoting a more inclusive social order.
- **Deepening Participatory Democracy:** The increasing involvement of women and other marginalized groups is gradually shifting India's democratic framework from **representative democracy** to **participatory democracy**, where governance becomes more inclusive, responsive, and people-driven.

Successful Case Studies

- **Arati Devi:** Arati Devi has played a crucial role in strengthening grassroots governance by improving the **Public Distribution System (PDS)** and enhancing service delivery in her village.
  - She also launched a **literacy campaign for women**, empowering them to sign documents and write applications independently.
  - Additionally, she contributed to cultural revival by rejuvenating **traditional folk art troupes** in the community.
- **Sushma Bhadu:** Despite dropping out in Class 7, Sushma Bhadu has transformed her village into a model for **sanitation, education, and gender balance.**
  - Her leadership has led to numerous accolades for the village, which now boasts **zero school dropouts, excellent sanitation standards**, and the **best sex ratio** among villages in Haryana.
- **Bhakti Sharma:** Her village witnessed remarkable strides in **wastewater management** through the installation of an organized **drainage and sewerage system**.
  - She introduced **soak pits and hand pumps** in every household to facilitate **rainwater harvesting** and improve groundwater recharge.
  - From having just nine toilets earlier, her efforts have made the village **Open Defecation Free (ODF)** with toilets in every home.
- **Chhavi Rajawat:** She has overseen the development of essential infrastructure in her village, ensuring a **regular supply of safe drinking water**, the construction of over **40 roads**, and the provision of **toilets in more than 800 homes**.
  - Her work exemplifies efficient and inclusive rural governance.

Step Taken

- **Rashtriya Gram Swaraj Abhiyan (RGSA):** A centrally sponsored scheme aimed at training and empowering elected representatives of Panchayati Raj Institutions (PRIs), with a special focus on women and marginalized groups. It covers areas like governance, leadership, financial management, and digital literacy.
- **Panchayat Mahila Evam Yuva Shakti Abhiyan (PMEYSA):** This initiative aims to enhance the leadership potential of women and youth in PRIs. It promotes the formation of peer networks among women sarpanches and encourages experience-sharing and collective problem-solving.
- **State-Level Capacity Building Programs:** Many states such as Kerala, Odisha, and Maharashtra conduct tailored training programs in local languages to empower women representatives in planning, budgeting, legal literacy, and effective service delivery.
- **National Institute of Rural Development and Panchayati Raj (NIRDPR):** NIRDPR conducts structured training programs and online modules for women representatives focusing on decentralized governance, gender budgeting, and first-time leadership development.
- **Digital Sakhi and E-Panchayat Initiatives:** Digital empowerment initiatives train women in ICT tools and platforms like e-GramSwaraj. These tools help them manage funds, track schemes, and participate in governance more efficiently.
- **Civil Society and NGO Initiatives:** Organizations like SEWA, and The Hunger Project conduct grassroots-level workshops to build women's confidence, legal awareness, decision-making capacity, and public speaking skills.

Name of Committee	Key Recommendations related to EWRs
Mani Shankar Aiyer Committee (2006)	○ Gender-sensitive planning and budgeting in Panchayats. ○ Tailored training modules and institutional support for women representatives.
Second Administrative Reforms Commission (ARC), 6th Report – "Local Governance"	○ Increase reservation for women to 50% in PRIs and ULBs. ○ Create Women's Councils at village/block levels for better representation and policy input.
NITI Aayog Recommendations	○ Promote digital and leadership training for Elected Women Representatives (EWRs). ○ Strengthen autonomy and financial access for women-led Panchayats.

25TH ANNIVERSARY OF JAHAN-E-KHUSRAU SUFI MUSIC FESTIVAL

Prime Minister Narendra Modi attended the Sufi music festival, Jahan-e-Khusrau 2025.

About Jahan-e-Khusrau Festival:

- It is an International festival dedicated to **Sufi music, poetry, and dance** which celebrates the **legacy of Amir Khusrau.**
- **Organized by:** The Rumi Foundation.
- **Founded by:** Filmmaker and artist **Muzaffar Ali in 2001.**

Amir Khusrau

- He was the most beloved disciple of the **Chishti Shaikh Nizamuddin Auliya.**
- He started out in the service of princes and nobles, before becoming a permanent fixture in the **court of the Delhi Sultan.**
  - **In mediaeval Islamic culture, praise poetry** was one of the principal means for a ruler to establish and **propagate his cultural and political legitimacy.**
  - **Khusrau served at least five Sultans** — Muizuddin Qaiqabad, Jalaluddin Khalji, Alauddin Khalji, Qutbuddin Mubarak Shah, and Ghiyasuddin Tughlaq.
- He wrote in **Persian**, the language of the court, as well as **Hindavi**.
- **Sultan Jalaluddin Khalji** bestowed upon Khusrau the **title of 'Amir'.**
  - He also bestowed him with the **sobriquet of Tuti-yi-Hind**, the **'Parrot of India', title.**
- **Legacy:** Khusrau made lasting contributions to **Indian classical music and qawwali,** and is also credited for **developing Hindavi**, a precursor to modern Hindi and Urdu.
  - He is also credited with crafting dozens of **ragas** and creating **ornate khayal music.**

About Sufism and its Origin:

- Sufism is a **mystic dimension of Islam** which formally **originated in the Middle East between the ninth and tenth centuries.**
  - **Mysticism** is a religious practice in which people search for truth, knowledge and **closeness to God through meditation and prayer.**
  - It focuses on **inner purity, love, and devotion for salvation**.
- **Historically, Sufism flourished** in Egypt, Syria, Iraq, Turkey, and Arabia.
- **Origin in India:** Sufism came to India in the **11th and 12th centuries,** after the **arrival of Islam via the Arab trading community** in South India.
  - The tradition draws from **Persian, Turkish, Urdu, Sindhi, Pashto, and Punjabi literature.**

Key Sufi Orders in India:

	Chishti	Suhrawardi	Qadri	Naqshbandi
Founder in India	Khwaja Moinuddin Chisti	Shaikh Bahauddin Zakanya	Niyammad-ulla-Qadiri	Khwaja Baqi Billah
Period of Origin in	1192	Same timeline as Chishti order	16th Century	16th Century
Principle	Aloof from the Royal patronage, Popularised love, tolerance, openness and music	Accepted royal Service, didn't belief in living a life of poverty, rejected Music	Relies strongly upon adherence to the fundamentals of Islam.	Orthodox Sect, philosophy of Wahadat-ul Shahdud,
Notable saints	-Khwaja Qutbuddin Bakhtiyar Khaki -Nizamuddin Auliya -Amir Khusrow	-Shaikh Shihabuddin Suharwadi -Hamid-ud-din Nagori -Shaikh -Fakhruddin Ibrahim Iraqi	- Shaikh Muhammad al Hasaini -Shaikh Abdul Qadir -Mulla Shah	-Shaikh Ahmad Sirhindi

Sufism Through Music

- Music in Sufism plays a key role in spiritual connection and transformation. It helps induce states of ecstasy and deep devotion, facilitating a closer communion with God.
- **Key aspects include:**
  - **Sama:** Spiritual music and dance that lead to mystical union.
  - **Whirling Dervishes:** Dance accompanied by music to symbolize the soul's journey toward God.
  - The act of spinning reflects the mystical experience of Fana (annihilation of the self) and Baqa (remaining in God).
- **Poetry and Song:** Sufi poetry is often sung, expressing love and devotion to the Divine. Sufi poets like Rumi, Hafiz, and Bulleh Shah wrote poetry that is often sung or recited during Sufi gatherings.
- **Healing Power:** Music is believed to bring emotional balance and peace.
- **Dhikr:** Music enhances the Dhikr (remembrance of God), helping to focus the mind and open the heart.

Terms Related to Sufism

- **Tariqa:** Spiritual path or order followed by Sufi practitioners.
- **Sheikh (Murshid):** Spiritual guide or teacher in Sufism.
- **Murid:** A disciple or follower of a Sufi order.
- **Khanqah:** A Sufi lodge or retreat for spiritual practices.
- **Qalb:** The heart, spiritual center of understanding.
- **Wali:** A saint or friend of God.

Impact of Sufi Movement:

➲ **Influence on Bhakti Movement and Religious Thought:** The **liberal and mystical nature of Sufism** deeply influenced the **medieval Bhakti Movement**, which similarly emphasized **devotion, love, and personal connection with the divine**.
  ◆ Sufi values of tolerance and spirituality inspired many **Bhakti saints** across India.

➲ **Impact on Mughal Religious Policies: Emperor Akbar** was notably influenced by Sufi ideals, which shaped his **religious outlook and policies of tolerance**. These influences were visible in his **Sulh-i-Kul policy** and the creation of **Din-i-Ilahi**, both aimed at **religious inclusiveness** and harmony.

➲ **Promotion of Hindu-Muslim Harmony:** Running parallel with the Bhakti Movement, Sufism played a key role in bringing **Hindus and Muslims closer**. Both movements focused on **love, compassion, and devotion**, helping to **reduce social and religious divisions** and nurture a **composite cultural ethos.**

➲ **Social and Cultural Reach:** Sufism penetrated both **urban and rural societies**, and had a far-reaching **social, cultural, and even political influence**.

◆ It stood against **orthodoxy, ritualism, and hypocrisy**, instead promoting **ethical living, humility**, and **inner spiritual growth.**

➲ **Moral Influence During Political Turmoil:** In an era marked by **political conflict and power struggles**, Sufi saints reminded people of their **moral duties** and advocated for **peace, harmony, and human values**, offering a **stabilizing influence** on society.

➲ **Contribution to Communal Unity:** One of the most significant legacies of Sufism was its role in **diminishing communal prejudice**.
  ◆ By fostering **brotherhood and solidarity**, it laid the groundwork for **interfaith coexistence** and mutual respect between communities.

➲ **Enduring Popularity and Shared Spaces:** The **shrines (dargahs)** of famous Sufi saints became and remain **popular pilgrimage sites** visited by both **Muslims and Hindus**.
  ◆ These sites symbolize **India's syncretic traditions** and continue to be powerful reminders of **spiritual unity and cultural fusion.**

Sufi Saints of Medieval India
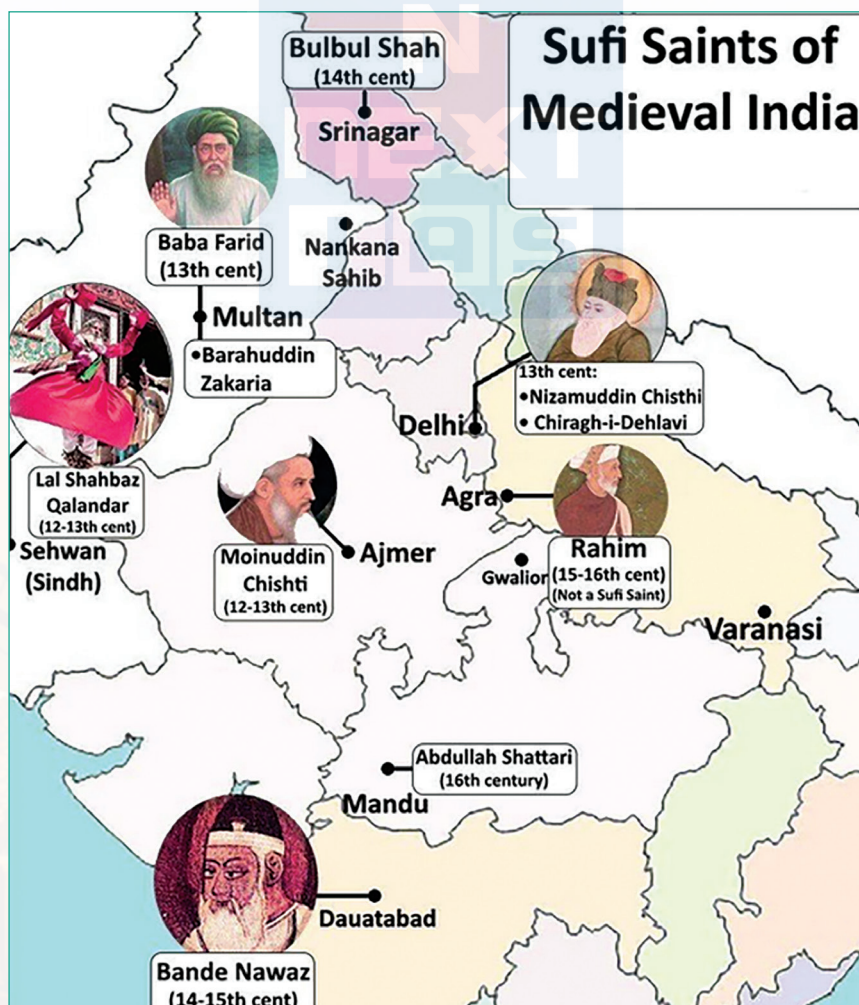
VISUALLY CHALLENGED PERSONS SUITABLE FOR JUDICIAL SERVICE: SUPREME COURT

Context

The Supreme Court set aside Rule 6A of the Madhya Pradesh Judicial Service Examination (1994, amended in 2023), which barred visually impaired candidates.

Background of the Case:

➲ The case began with a letter from a mother of a visually-impaired aspirant in Madhya Pradesh.

➲ The Supreme Court took **suo motu** action on it.

➲ The dispute was over **Rule 6A (amended in June 2023)**, which **barred visually-impaired candidates** from judicial service. The mother called the rule **unfair and discriminatory** against PwDs.

Key Points of the Judgment:

➲ **Visually-impaired candidates cannot be rejected** for judicial service based only on their disability.

➲ **Inclusivity and equality** must protect all, including PwDs. The court urged **Parliament to amend Article 15** to include "disability" as a ground for non-discrimination.

➲ **Rigid cut-offs and procedural barriers** must be removed for fair access. **Qualified PwDs should not be ignored** in judicial service selection. If not enough PwDs qualify, **assessment criteria should be relaxed**.

Article 14	Equality before law and equal protection of law
Article 15	Prohibition of discrimination on grounds only of religion, race, caste, sex or place of birth
Article 16	Equality of opportunity in matters of public employment
Article 17	Prohibition of untouchability
Article 18	Abolition of titles, Military and academic distinctions are, however, exempted

RIGHT TO EQUALITY (ART. 14-18)

➲ **Article 41 of the Constitution**, a Directive Principle, imposed a duty on the State to make an effective provision for public assistance to disabled persons.

➲ The state must not discriminate on the grounds of mental or physical disability.

➲ A **separate cut-off** must be maintained for visually-impaired candidates. Thus, **PwDs and PwBDs should be treated equally** in judicial appointments.

➲ **70 countries already include "disability"** in their anti-discrimination laws.

➲ Law graduates with disabilities deserve equal career opportunities in the legal field.

THE IMMIGRATION AND FOREIGNERS BILL, 2025

Context

The Union government introduced the Immigration and Foreigners Bill, 2025 in the Lok Sabha, aimed at overhauling India's immigration system.

Key Provisions:

➲ **The Bill seeks to replace** four pre-Independence and early post-Independence Acts: the Passport (Entry into India) Act, **1920,** the Registration of Foreigners Act, **1939,** the Foreigners Act, **1946**, and the Immigration (Carriers' Liability) Act, **2000.**

➲ **Establishment of Bureau of Immigration:** The Bill proposes the establishment of a Bureau of Immigration **(Section 5)**, headed by a Commissioner.

  ◆ The Bureau will regulate immigration, oversee entry and exit of foreigners, and perform other functions as prescribed by the Centre.

➲ **Central Government's Powers over Foreigners:** Under **Section 7**, the Bill empowers the Central government to:

  ◆ **Specify entry and departure points** and impose conditions on foreigners upon arrival.

  ◆ Order foreigners to stay in designated areas or prohibit them from entering specific regions.

  ◆ Mandate **identity verification**, biometric submission, and medical examination for foreigners.

  ◆ **Restrict association with certain individuals** or involvement in specified activities.

➲ **Punishments:** The Bill also carries punishments for foreigners who:

  ◆ Enter any area without a valid passport or a travel document **(Section 21).** The punishment is up to **five years** imprisonment and/or a fine of up to **Rs 5 lakh.**

➲ **Restrictions on carriers:** A carrier has been defined as a person or entity "engaged in the business of transporting passengers or cargo by air, water or land by aircraft or ship or any other mode of transport".

◆ **Under Section 17,** carriers are required to share information related to the passengers and crew with an immigration officer or with a District Magistrate/Police Commissioner when asked.

DUPLICATE VOTER ID NUMBERS

Context

The Election Commission of India (ECI) has acknowledged concerns regarding identical EPIC numbers issued to voters in different states.

About EPIC Number (Voter ID Number):

➲ The **Electors Photo Identification Card (EPIC)** is a **10-digit unique voter ID number** issued by the **Election Commission of India (ECI)** to each registered voter. It serves as the **primary identification document** for voters during elections.

Reasons for Duplicate EPIC Numbers

➲ Before the introduction of **ERONET**, voter ID numbers were **manually allocated** by **State/UT CEO offices**, leading to errors.

➲ In some cases, **identical alphanumeric EPIC series** were issued to voters in **different states/UTs**, causing **duplicate voter ID numbers** across Assembly Constituencies.

ERONET: Digital Electoral Roll Management System

➲ **ERONET** is a **web-based platform** designed to streamline the **electoral roll management process**.

➲ It **integrates voter registration, migration, and deletion** across states, ensuring a **centralized and standardized** electoral roll.

➲ ERONET supports **multiple languages and scripts**, making voter data management more efficient.

National Electoral Rolls Purification & Authentication Program (2015)

➲ **Objective:** Remove duplicate voter entries by linking EPIC data with Aadhaar.

➲ **Benefits of linking:**

◆ Ensures one voter, one vote policy.
◆ Enhance Transparency & Integrity.
◆ Clean Electoral Rolls.
◆ Efficient Election Management.

➲ **Challenges in linking:**

◆ Aadhaar Errors may lead to wrongful voter deletion.
◆ Aadhaar is not proof of citizenship, raising concerns about non-citizens on the rolls. Privacy Risks from linking electoral rolls with Aadhaar data.

SWAVALAMBINI PROGRAMME

Context

The Ministry of Skill Development and Entrepreneurship (MSDE), in collaboration with NITI Aayog, launched Swavalambini Programme.

About

➲ Swavalambini is a Women Entrepreneurship Programme

➲ It aims to establish a **structured and stage-wise entrepreneurial** journey for young women.

➲ This programme aims to nurture the entrepreneurial spirit among young women in **Higher Education Institutions (HEIs)** by providing them with the necessary mindset, resources, and mentorship to successfully build and scale their ventures.

Key Features of the Swavalambini Programme

➲ **Faculty Development Programme (FDP):** Swavalambini focuses on training faculty members from participating Higher Education Institutions (HEIs) with **five-day training sessions.**

➲ **Mentorship:** Once participants have developed their business plans, they receive mentorship from industry experts and successful entrepreneurs. Additionally, the programme facilitates:

◆ **Access to funding opportunities** through government schemes and private investors.
◆ **Networking opportunities** with established business leaders and professionals.

➲ **Women Entrepreneurship Development Programme (EDP):** Building on the foundation laid in the EAP, the Entrepreneurship Development Programme (EDP) provides a deeper understanding of:

◆ Business planning, Leadership and decision-making skills,
◆ Financial literacy and investment strategies.
◆ Market research and competitive analysis.

SIX YEARS OF PRADHAN MANTRI SHRAM YOGI MAANDHAN YOJANA (PM-SYM)
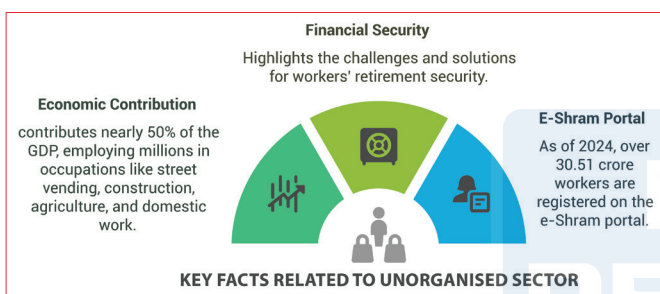
Context

The Pradhan Mantri Shram Yogi Maandhan (PM-SYM) Scheme was launched in 2019 to provide pension security for unorganized workers.

About PM-SYM Scheme:

➲ **About:** It is a voluntary and contributory pension scheme, ensuring a minimum ₹3,000 monthly pension after the age of 60 years.

- ◆ Spouses receive 50% of pension if the subscriber dies after retirement.
- ◆ Spouses can continue or exit the scheme if the beneficiary dies before 60.
- ➲ **Implementation:** Ministry of Labour & Employment and managed by the Life Insurance Corporation of India (LIC).
- ➲ **Eligibility:** *Age:* 18–40 years, monthly income ₹15,000 or less, not covered under EPF/ESIC/NPS.
- ➲ **Contribution Structure:** Monthly contribution ₹55 to ₹200, depending on the age of joining.
- ➲ **Enrollment:** Through Common Service Centres (CSC) or the Maandhan portal.
- ➲ **Implementation and Current Status:** 46.12 lakh enrollments (March 2025) across 36 States/UTs. Top 3 States are Haryana, Uttar Pradesh, Maharashtra.

Financial Security
Highlights the challenges and solutions for workers' retirement security.

Economic Contribution
contributes nearly 50% of the GDP, employing millions in occupations like street vending, construction, agriculture, and domestic work.

E-Shram Portal
As of 2024, over 30.51 crore workers are registered on the e-Shram portal.

KEY FACTS RELATED TO UNORGANISED SECTOR

PM YOUNG AUTHORS MENTORSHIP 3.0 (YUVA 3.0) SCHEME

Context

The Ministry of Education (MoE) and the National Book Trust (NBT) of India launched the third edition of the Prime Minister's Young Authors Mentorship Scheme.

About PM-YUVA 3.0

- ➲ **Aim:** The initiative aims to **train young authors (below 30 years)** to promote **reading, writing, and book culture**, while showcasing **Indian literature globally.**
- ➲ **Themes:**
  - ◆ Contribution of Indian Diaspora in Nation Building
  - ◆ Indian Knowledge System
  - ◆ Makers of Modern India (1950-2025)
- ➲ The **National Book Trust (NBT)**, under the **Ministry of Education**, is the **implementing agency.**
- ➲ Books authored under this program will be **published by NBT** and **translated into multiple Indian languages** under the **Ek Bharat Shreshtha Bharat** initiative.
- ➲ It aligns with **National Education Policy 2020**, supporting the **empowerment of young minds** and preparing **future leaders.**

YUVA 1.0 and YUVA 2.0

- ➲ **YUVA 1.0 (launched in May 2021**) marked the beginning of the initiative during the Azadi Ka Amrit Mahotsav celebrations, commemorating 75 years of India's independence.
  - ◆ Its theme was the **National Movement of India**, focusing on unsung heroes, little-known facts, and various aspects of the freedom struggle.
- ➲ **YUVA 2.0 (launched in October 2022**) built upon the foundation of YUVA 1.0 with a focus on **Democracy as the core theme.**
  - ◆ It aimed to develop young writers who could explore India's democratic values, traditions, and governance structures.

ONLINE ASSURANCES MONITORING SYSTEM

Context

The Union Parliamentary Affairs Minister recently highlighted the role of the Online Assurances Monitoring System (OAMS) in managing government assurances.

About OAMS

- ➲ It is a digital platform implemented by the **Ministry of Parliamentary Affairs (MoPA)** to enhance transparency and efficiency in **managing government assurances.**
- ➲ Assurances are promises, undertakings, or commitments given by Ministers during answers to parliamentary questions or debates.
- ➲ Assurances should ideally be fulfilled within three months of being made.
- ➲ The **Ministry of Parliamentary Affairs (MoPA)** is responsible for implementing assurances under the **Government of India (Allocation of Business) Rules, 1961.**

PAC FLAG SHORTCOMINGS OF SWADESH DARSHAN SCHEME

Context

The Public Accounts Committee (PAC) criticized the Tourism Ministry for poor execution of the Swadesh Darshan scheme.

About Swadesh Darshan

- ➲ The Ministry of Tourism launched its flagship scheme of 'Swadesh Darshan' in **2014-15.**

➲ **The Ministry has now revamped it as Swadesh Darshan 2.0** with the objective to develop sustainable and responsible destinations following a tourist & destination centric approach.
➲ **Theme-Based Tourist Circuits:** It identifies various thematic circuits based on specific themes such as:
  ◆ Spiritual circuits (e.g., Char Dham Yatra, Buddhist circuit)
  ◆ Cultural circuits (e.g., North East Circuit, Tribal Circuit) Heritage circuits, Wildlife circuits and Coastal circuits.
➲ **Funding:** The Ministry of Tourism allocates funds to various states and Union Territories for the development of these circuits.

Key issues highlighted by PAC

➲ **Lapses in Planning:** No feasibility studies conducted before project launch.
➲ **Financial Mismanagement:** Budget overruns due to poor planning; approvals granted without Detailed Project Reports (DPRs).
➲ **Weak Monitoring:** No formal mechanism for project evaluation or approval; several projects delayed or incomplete.
➲ **Tourism Ministry's Claim vs. Reality:** The Ministry of Tourism claimed that 75 out of 76 projects were completed, but the committee found that several projects, including the Kanwaria route in Bihar, Tribal circuit in Telangana, and Sree Narayana Guru Ashram in Kerala, remained incomplete or non-functional.

Way Ahead

➲ The committee has instructed the Ministry of Tourism to conduct physical inspections of all the projects and provide a comprehensive report within three weeks.
➲ The committee also asked for details on how the scheme impacted employment generation and how it affected tourist footfall, as these were key indicators of the scheme's success.

Public Accounts Committee (PAC)

➲ **Constitutional Status:** Not a constitutional body; formed under **Rule 308** of the **Rules of Procedure and Conduct of Business** in **Lok Sabha**.
➲ **Composition:** 22 members (15 from **Lok Sabha**, 7 from **Rajya Sabha**)
  ◆ Elected annually by Parliament
  ◆ Chairperson appointed by the **Speaker of Lok Sabha.** The Chairperson is usually from the opposition party, **not the ruling party.**
➲ **Function:**
  ◆ Examines **audit reports of the CAG of India**
  ◆ Scrutinises **public expenditure** to ensure it is not extravagant or irregular
  ◆ Ensures accountability of the **Executive to the Legislature.**
  ◆ Works in tandem with **CAG** to maintain **fiscal discipline and transparency**

SAHYOG PORTAL

Context

X Corp, formerly known as Twitter Inc., is challenging the Indian government's approach to content blocking on its platform, particularly in relation to the Sahyog portal.

About SAHYOG Portal:

➲ **Aim:** To build a strong system for preventing, detecting, investigating, and prosecuting cybercrime in India.
➲ **Functions:**
  ◆ It streamlines legal notice processing under the **IT Act, 2000,** facilitating the removal of unlawful content and enhancing coordination between authorised agencies and online platforms.
  ◆ **In Phase 1**: The government enables authorities to **send takedown requests** for unlawful content.
  ◆ **In Phase 2:** The portal's functionality will be expanded to include information requests from law enforcement agencies.
➲ **Ministry:** Developed by the **Ministry of Home Affairs.**
➲ **Note: 38 intermediaries** like **Google, WhatsApp, Facebook, Apple, YouTube, and Microsoft** have joined.

X's legal challenge
Here are the contentions of Elon Musk's company in the Karnataka High Court:

■ Why issue blocking orders under Section 79(3)(b) of the Information Technology (IT) Act, 2000, and not under Section 69A

■ Section 79(3)(b) outlines the conditions under which an intermediary loses its 'safe harbour' protection

■ Section 69A empowers the government to block access to online content, under specific circumstances

■ Union Home Ministry's Sahyog portal is a 'censorship portal'

Legal Framework: Section 69A vs. Section 79(3)(b)

➲ **Section 69A of the IT Act, 2000:** This section empowers the government to **block public access to content** on the internet **in certain circumstances, such as** concerns over national security, sovereignty, public order, or to prevent incitement.
➲ It includes safeguards as laid out by the **Supreme Court in the Shreya Singhal case (2015).**
  ◆ A reasoned order explaining the necessity of blocking content. The person or entity affected should have a **chance to contest the order.**
➲ **Section 79(3)(b) of the IT Act:** This section deals with the **liability of intermediaries (such as platforms like X Corp) for third-party content.**
  ◆ It exempts platforms from **liability for illegal content** unless they fail to act **swiftly to remove or disable access** to that content when notified by the government.

DEMANDS FOR GRANTS

Context

The Lok Sabha passed the Demands for Grants for various Ministries for 2025-26, approving an expenditure of over ₹50 lakh crore.

About Demand for Grants

- It is a proposal for expenditure from the Consolidated Fund, presented to the Lok Sabha as part of the annual financial statement, in accordance with **Article 113 of the Constitution**.
- It covers revenue & capital expenditure, grants to states/UTs, and loans & advances.
- Every ministry or department of the Government of India presents its own Demand for Grants. Large ministries (e.g., Defence, Railways) may present multiple Demands based on their functional divisions.
- The Lok Sabha has the power to approve, reject, or reduce the proposed amounts, Rajya Sabha does not vote on these demands.
- The demand can only be presented with prior approval from the President.

JUDICIARY'S IN-HOUSE INQUIRY AGAINST DELHI HIGH COURT JUDGE

Context

Recently, the Chief Justice of India (CJI) initiated an unprecedented three-member in-house inquiry into the conduct of Delhi High Court judge Justice Yashwant Varma.

About the In-House Inquiry

- **Origins and Evolution:**
  - The need for an in-house inquiry mechanism arose **in 1995** following **allegations of financial impropriety** against Bombay High Court Chief Justice A.M. Bhattacharjee.
  - In-House Procedure was formulated by the Supreme Court in 1997 following a case involving allegations against Justice V. Ramaswami, a former SC judge.
  - The process was **refined in 2014** after a **sexual harassment** complaint led to the establishment of a seven-step inquiry framework

Key Features of the In-House Inquiry

- **Distinct process vis-a-vis Removal:** Unlike removal, which requires Parliamentary approval under **Article 124(4) of the Constitution,** the in-house inquiry is an **internal mechanism** aimed at addressing conduct inconsistent with judicial values.

- **Formation of Inquiry Committees:** Committees typically consist of senior judges from different High Courts to ensure impartiality.
  - For the current case, a three-member committee includes the Chief Justice of Punjab & Haryana High Court, Chief Justice of Himachal Pradesh High Court, and a Justice of Karnataka High Court.
- **Transparency:** Recent inquiries have demonstrated a commitment to transparency, with reports and evidence made publicly accessible.

Process of In-House Inquiry

- **Preliminary Scrutiny:** Complaints against judges are **first examined by the Chief Justice of India (CJI)** in the case of SC judges or by the Chief Justice of the respective High Court for HC judges.
- **Formation of a Committee:** If a prima facie case is established, a three-judge committee is formed to investigate the allegations.
- **Inquiry Proceedings:** The committee examines the evidence, questions the accused judge, and determines whether the allegations hold merit.
- **Report Submission:** The committee submits its findings to the CJI, who then decides on further action.

Possible Outcomes

- If the judge is found guilty of misconduct, the report is sent to the President of India for consideration of removal via Parliamentary process.
- If the misconduct is minor, the judge may be advised to resign voluntarily.
- If the allegations are baseless, the matter is dropped.

Challenges in the In-House Inquiry Process

- **Lack of Transparency:** The inquiry is conducted behind closed doors, and reports are not made public. It raises concerns about accountability.
- **No Binding Authority:** Even if misconduct is established, the judiciary cannot directly remove a judge; impeachment by Parliament is required.
- **Rare Impeachment:** The complex impeachment process makes it nearly impossible to remove judges, as seen in the cases of Justice Ramaswami (1991) and Justice S. N. Shukla (2022).
- **Political Influence:** The impeachment process can be influenced by political considerations, reducing its effectiveness.
- **Delayed Justice:** Investigations often take years, diminishing public faith in judicial accountability.

Recommendations for Reform

- **Make Inquiry Reports Public:** Increasing transparency will enhance public trust.

- **Strengthen Judicial Oversight Bodies:** The establishment of Judicial Standards and Accountability Commission will be a significant step towards ensuring transparency and accountability in the judiciary.
- **Introduce Alternative Disciplinary Mechanisms:** Instead of only relying on impeachment, other disciplinary actions like suspensions or fines should be considered.
- **Ensure Time-Bound Proceedings:** Delays in inquiries should be minimized to prevent judicial misconduct from going unpunished.

BHIM 3.0

Context

NPCI BHIM Services Limited (NBSL), a subsidiary of the National Payments Corporation of India (NPCI), has launched BHIM 3.0.

About BHIM 3.0

- **BHIM 3.0** is an **upgraded version of BHIM**, enhancing accessibility, security, and user experience.
- **BHIM Unified Payment Interface (UPI)** was launched in **2016** to provide a **simple, fast, and secure** method for **cashless payments** using **UPI technology**.
- It allows users to **send and receive money instantly** via **mobile phones**, eliminating the need for **bank account details.**

Key Features of BHIM 3.0

- **Enhanced accessibility and security** with **support for 15+ languages**, **low-internet optimization**, and **improved security features** for safer transactions.
- **User-centric features** include **Split Expenses**, **Spends Analytics**, and an **Action Needed Assistant** for reminders on pending bills, ensuring **better expense tracking** and **financial management**.
- **For merchants, BHIM Vega** enables a **seamless in-app payment system**, allowing transactions **without switching platforms.**

National Payments Corporation of India (NPCI)

- **Founded** in 2008 by the RBI and the Indian Banks' Association under the Payment and Settlement Systems Act, 2007, to oversee and manage retail payments in India.
- NPCI International Payments Ltd. has expanded UPI services to 7 countries, including Bhutan, Mauritius, Nepal, Singapore, Sri Lanka, and France.
- 20+ apps, including PhonePe, Paytm, and Google Pay, now support international UPI transactions.

PRADHAN MANTRI MATRU VANDANA YOJANA (PMMVY)

Context

The opposition has pointed out that maternity benefits mandated under the National Food Security Act (NFSA) are not being adequately implemented due to low budgetary allocation.

About PMMVY

- It is a **Centrally Sponsored Direct Benefit Transfer (DBT) scheme**, launched in **2017** to support **pregnant and lactating mothers.**
- **Objectives:**
  - Provide **partial wage loss compensation** through **cash incentives**, allowing women to take **adequate rest** before and after the **birth of their first child**.
  - Encourage **health-seeking behavior** among **Pregnant Women & Lactating Mothers (PW&LM)**.
- **Features:**
  - The scheme provides **maternity benefits** to women from **socially and economically disadvantaged sections**.
  - **Maternity benefits** are available for the **first two living children**, with the **second child being a girl**.
  - **Monetary assistance of ₹5,000** is given to **expecting mothers** from **pregnancy initiation to childbirth**.
  - An **additional ₹1,000** is provided under the **Janani Suraksha Yojana** post **institutional delivery**.
  - The **₹5,000 assistance** is provided in **three installments**:
    - **₹1,000** at the time of **pregnancy registration**.
    - **₹2,000** after completing **six months of pregnancy** and receiving at least **one antenatal checkup**.
    - **₹2,000** after **birth registration** and the **first immunization cycle** for **BCG, OPV, DPT, and Hepatitis-B**.
  - **Miscarriage/stillbirth cases** are treated as **fresh cases**, making women eligible for benefits in future pregnancies.

Significance

- Supports maternal health by providing partial wage compensation to pregnant and lactating women.
- Reduces maternal and infant mortality through improved nutrition and care. Promotes institutional delivery by incentivizing antenatal and postnatal check-ups.
- Encourages early child care and exclusive breastfeeding.
- Targets first-time mothers, creating awareness from the beginning of motherhood.
- Supports financial inclusion through direct benefit transfers (DBT) to women's bank accounts.

GOLD CARD US VISA

Context

The United States has announced a visa program called "Gold Card" for foreign investors seeking permanent residency in the country, and ultimately American citizenship.

About

- The program will replace the **EB-5 visa**, which currently allows foreign nationals to invest between **$800,000 and $1.05 mn** in job-creating ventures for conditional residency.
  - **EB-5** is a category of temporary visa that holders could use for a **Green Card,** and ultimately American citizenship.
- The **Gold Card visa** raises the stakes, needing an investment of **$5 million.**
  - The scheme will bring high-net-worth individuals to America, whose investments will stimulate the US economy.
- Around **12 countries** worldwide provide citizenship in return for investment, including **Malta, Egypt, and Cambodia.**

KURD ISSUE

Context

The Kurdistan Workers Party (PKK) militant group declared an immediate ceasefire, a major step towards ending a 40-year insurgency.

About

- **Kurds:** Ethnic group of about 40 million, mainly in **Iran, Iraq, Syria, and Turkey.**
  - Speak various Kurdish dialects, not related to Turkish or Arabic; mostly **Sunni Muslims.**
  - **In Syria,** Kurdish-led Syrian Democratic Forces (SDF) control the northeast.
- **Concerns:** They were promised a nation post-WWI, but never granted.
  - Faced rebellions, state suppression of language and culture.
- **Insurgency:** The group launched an armed insurgency against the Turkish state in the early 1980s, originally seeking independence for the Kurds.
  - They make up **about 15%** or more of Turkey's population.

- **Peace Efforts:** Multiple efforts to end the Turkey-PKK conflict have been made, but all of them collapsed.

IRAN-USA NUCLEAR DEAL NEGOTIATIONS

Context

Iran declined to resume negotiations on its nuclear programme with the United States.

About

- Trump's administration has levied **sanctions against Iran** – including on the country's oil network – as part of his **"maximum pressure" strategy**. Trump wrote to Iran, urging **negotiations on the nuclear deal or risk military action.**
- Iran's Foreign Minister stated they would only negotiate with other JCPOA members (Europe, Russia, China), not the U.S.

Joint Comprehensive Plan of Action (JCPOA) 2015

- **Participants:**
  - Iran
  - **P5+1:** Five permanent members of the UN Security Council (China, France, Russia, UK, U.S.) plus Germany.
  - **EU:** Participated in negotiations.

Iran's Commitments:

- **Nuclear Restrictions:** Iran agreed **not to produce highly enriched uranium** or plutonium for nuclear weapons and to ensure its nuclear facilities (Fordow, Natanz, Arak) focus on **civilian purposes.**
- **Centrifuge Limits:** Iran limited the number, type, and level of its centrifuges, and reduced its stockpile of enriched uranium.
  - Uranium enriched to 5% is for nuclear power; 20% for research or medical use; 90% for weapons.
- **Monitoring and Verification:** Iran agreed to allow the **International Atomic Energy Agency (IAEA)** unfettered access to nuclear facilities, including undeclared sites.
  - A Joint Commission monitors the deal's implementation and resolves disputes, including granting IAEA access to suspicious sites.

What Other Signatories Agreed To:

- **Sanctions Relief:** The EU, UN, and U.S. agreed to lift nuclear-related sanctions on Iran, but U.S. sanctions on ballistic missiles, terrorism support, and human rights remained.

- ◆ The U.S. lifted sanctions on oil exports but kept restrictions on financial transactions.
- ◆ **UN arms and missile bans on Iran were lifted** after five years, provided the IAEA confirmed Iran's nuclear activities remained civilian.
- ⊃ **Violation of the Deal:** If any signatory suspects Iran is violating the deal, the UN Security Council can vote on whether to continue sanctions relief.
  - ◆ This "snapback" mechanism remains in effect for ten years, after which the UN sanctions are set to be permanently removed.
- ⊃ **Trump's Withdrawal:** In 2018, President Trump withdrew the U.S. from the deal, leading Iran to resume nuclear activities.
- ⊃ **Iran's Nuclear Activity:** In 2023, Iran enriched uranium to near weapons-grade levels, raising international concerns.
  - ◆ Key provisions of the JCPOA began to expire by late 2023.

ORGANIZATION OF ISLAMIC COOPERATION

Context

The Organization of Islamic Cooperation (OIC) supported the Arab League's alternative proposal opposing Trump's plan to take control of Gaza and forcibly relocate its residents.

About

- ⊃ It is the **second largest organization after the United Nations** with a membership of 57 states spread over four continents and represents the collective voice of the Muslim world.
- ⊃ **Founded:** 25 September 1969

India's Diplomatic Balancing Act

Criticism of OIC

India's strong criticism of OIC's Kashmir stance as interference.

OIC Resolutions

OIC resolutions frequently reference India, especially on Kashmir.

Guest Invitation

India was invited as a guest to OIC Foreign Ministers' meeting in 2019.

- ⊃ **Headquarters:** Jeddah, Saudi Arabia
- ⊃ **Objectives of the OIC:**
  - ◆ Promote Islamic Solidarity among member states.
  - ◆ Defend Muslim interests in political, social, economic, and cultural spheres.
  - ◆ Protect Islamic holy sites, particularly in Palestine.

CONVENTION ON CLUSTER MUNITIONS

Context

Lithuania withdrew from the Convention on Cluster Munitions, citing security concerns over the Russia-Ukraine war. It is the first country to leave the convention.

About

- ⊃ **Adopted:** Signed in **2008** in Oslo, Norway.
- ⊃ **Purpose:** Aimed at banning the use, production, transfer, and stockpiling of cluster munitions.
  - ◆ Seeks to protect civilians from the indiscriminate harm caused by unexploded submunitions.
- ⊃ **Cluster munitions** can be dropped from aircraft or fired from artillery, exploding mid-air and scattering bomblets over a wide area They release smaller explosive submunitions that can remain dangerous long after conflicts end.
- ⊃ **Signatories:** Over 100 countries have signed or ratified the treaty. Some countries, including major military powers like the U.S., India, Russia, and China, have not signed the treaty.

INTERNATIONAL CRIMINAL COURT

Context

Former Philippines President Rodrigo Duterte was taken into custody based on a warrant issued by the International Criminal Court (ICC).

Background:

- ⊃ He was accused of crimes against humanity over his deadly **"war on drugs"** during his tenure where more than 6, 000 suspects were killed which UN found that most victims were young, poor urban males.
- ⊃ Also, earlier, the **International Criminal Court (ICC)** issued an arrest warrant against **Russian President Vladimir Putin** for alleged war crimes in Ukraine.

International Criminal Court (ICC)

- ⊃ **About:** The International Criminal Court (ICC) is the **world's first permanent international court** established to investigate and prosecute individuals accused of serious international crimes.

- **Establishment:** Under the **Rome Statute (1998)**, has 125 member states and **exercises jurisdiction over four core crimes:**
  - **Genocide** (Intentional destruction of a national, ethnic, racial, or religious group)
  - **Crimes against Humanity** (Widespread attacks against civilians)
  - **War Crimes** (Grave breaches of the Geneva Conventions)
  - **Crimes of Aggression** (Acts of aggression by a state violating sovereignty, territorial integrity)
- **Jurisdiction:** The ICC can exercise jurisdiction when:
  - Crimes are committed by a national of a State Party or on territory of a State Party.
  - A non-member state accepts ICC jurisdiction voluntarily.
  - The UN Security Council can refer a case to the ICC (Chapter VII of the UN Charter).
  - The ICC Prosecutor initiates an investigation upon own initiative or a State Party's request.
- **Enforcement Challenges:**
  - The ICC does not have its own police force and relies on state cooperation for arrests and extraditions.
  - Non-member states have no obligation to cooperate (e.g., Israel, the US, Russia, China, and India).

COMPARISON BETWEEN ICC AND ICJ		
Features	International Criminal Court (ICC)	International Court of Justice (ICJ)
Establishment	2002 (Rome Statute, 1998)	1945 (UN Charter)
Location	The Hague, Netherlands	The Hague, Netherlands
Jurisdiction	Individuals accused of serious crimes	Disputes between states
Crimes Covered	Genocide, War Crimes, Crimes Against Humanity, Crime of Aggression	Legal disputes (sovereignty, borders, treaty violations) and advisory opinions
Binding Nature	ICC rulings are legally binding but rely on state cooperation for enforcement	ICJ rulings are binding but can be ignored (enforcement through UN Security Council)
Membership	125 States Parties (Rome Statute)	All 193 UN Member States
Cases Heard	Criminal cases against individuals	Civil cases between states
Appeal	Has an appeals mechanism	No formal appeals process

IND-AUS DEFENCE POLICY TALKS

Context

India and Australia held their 9th Defence Policy Talks in New Delhi.

Key Outcomes of Recent Meeting

- **Enhanced Maritime Security & Interoperability:** Both nations agreed on increased cooperation in maritime domain awareness and reciprocal information sharing and strengthening joint naval exercises such as **AUSINDEX and Malabar.**
- **Defence Industry & Science-Technology Collaboration:** Both sides discussed defence technology transfers, co-development, and co-production of military hardware and use of emerging technologies.
- **Strengthening Strategic Partnership Beyond Bilateral Ties:** Alignment with regional and multilateral frameworks, including:
  - **Quad (India, Australia, Japan, USA)** – Strengthening Indo-Pacific security architecture.
  - **ASEAN Defence Ministers' Meeting Plus (ADMM-Plus)** – Expanding regional security dialogues.
  - **Indian Ocean Rim Association (IORA)** – Promoting maritime security and blue economy cooperation.

Significance of India-Australia Defence Partnership

- **Defence Engagement**: Australia and India have strengthened their defence ties since becoming Comprehensive Strategic Partners in 2020.
  - Key milestones include the Mutual Logistics Support Agreement (2021).
- **Indo-Pacific Security & Maritime Strategy:** The **Indo-Pacific region faces growing security challenges**, including China's assertiveness in the South China Sea.
  - India and Australia, both maritime powers, seek to enhance naval cooperation to ensure regional stability.
- **Countering Emerging Threats: Cybersecurity, space security, and hybrid warfare tactics** have become major concerns. **India and Australia are collaborating on defence technology innovations** to counter these challenges.
- **Expanding Defence Trade & Industry Collaboration:** India's **'Make in India' initiative** aligns with Australia's **defence industry growth strategy**, allowing mutual investments in:

- ◆ Missile systems and radar technology
- ◆ Unmanned aerial and naval platforms
- ◆ Joint shipbuilding projects
- ➲ **Strengthening Strategic Autonomy & Diversifying Defence Ties:** Australia's increasing **defence partnerships with India reduce its reliance on traditional allies** like the USA and UK.
  - ◆ **India benefits from deeper Indo-Pacific alliances**, complementing its ties with the US, France, and Japan.

'SQUAD' ALLIANCE

Context

India has been invited to join the multilateral alliance Squad to prevent China's influence in the South China Sea.

About

- ➲ The Squad is an **informal alliance** formed in **2024** with countries such as **Australia, Japan, the Philippines and the United States.**
  - ◆ The group now plans **to invite India and South Korea to join it.**
- ➲ The defence forces of this alliance have **conducted joint maritime activities** in the **exclusive economic zone of the Philippines in the South China Sea.**
- ➲ **Aim:** The Squad's joint maritime activities are aimed at providing **strategic responses to tensions in the Philippines' waters** in the South China Sea.
- ➲ Currently, India is a part of **Quad,** an alliance of the US, Japan, and Australia, which informally tries to keep a check on China's dominance in the Indo-Pacific region.
  - ◆ The Quad is a tactical grouping that operates at a higher, more strategic level, across the Indo-Pacific.

INDO-U.S. CULTURAL PROPERTY AGREEMENT

Context

The Cultural Property Agreement (CPA) has been signed with the United States of America (USA).

About

- ➲ It aims to prevent smuggling of Indian antiquities.
- ➲ The agreement aligns with **Article 9 of the 1970 UNESCO Convention**, which enables countries whose cultural patrimony is in jeopardy from pillage to seek international cooperation.
- ➲ It is preventive in nature and has no timelines or target numbers.
  - ◆ So far, 588 antiquities have been repatriated from the USA, out of which 297 received in 2024.

- ➲ It has provision for fostering cooperation and mutual understanding in the matters of technical assistance, illicit trade and pillage of cultural property.
- ➲ India collaborates with different international organizations including UNESCO and INTERPOL as per requirement.

BALOCHISTAN TRAIN HIJACK

Context

The Balochistan Liberation Army (BLA) has claimed responsibility for hijacking the Jaffar Express.

About Balochistan

- ➲ It is the **largest** but **least populated of Pakistan's four provinces** – Balochistan, Sindh, Punjab and Khyber Pakhtunkhwa.
- ➲ **Ethnic Groups:** Baloch, Brahui, and Pashtuns.
- ➲ It has **substantial reserves of oil and gas,** alongside gold and copper deposits, but has lagged in economic growth compared to other regions in the country.
  - ◆ The province has been the site of a series of insurgencies, brutal state repression, and an enduring **Baloch nationalist movement since 1948.**

Background

- ➲ **1947 Partition of Balochistan:** The region was divided into four princely states: **Kalat, Kharan, Las Bela, and Makaran.**

What is Balochistan Liberation Army?

What it is
- ■ The Balochistan Liberation Army **(BLA), active since 2011,** is the most prominent of the many separatist groups in Pakistan's Balochistan province
- ■ **Majeed Brigade** is the BLA's dedicated suicide squad

The context
- ■ Balochistan is the country's largest province. It has oil and other natural resources, but the ethnic Baloch are Pakistan's **poorest and most under-represented** people
- ■ Till 1947, Balochistan comprised multiple chiefdoms.
- ■ Ahmed Yar Khan, the chief of Kalat, was the most powerful. He was **forced to accede to Pakistan in 1948**, after Pakistan invaded Kalat
- ■ This triggered an insurgency which remains ongoing due to **'unjust' behavior of Pakistan govt towards Balochs**
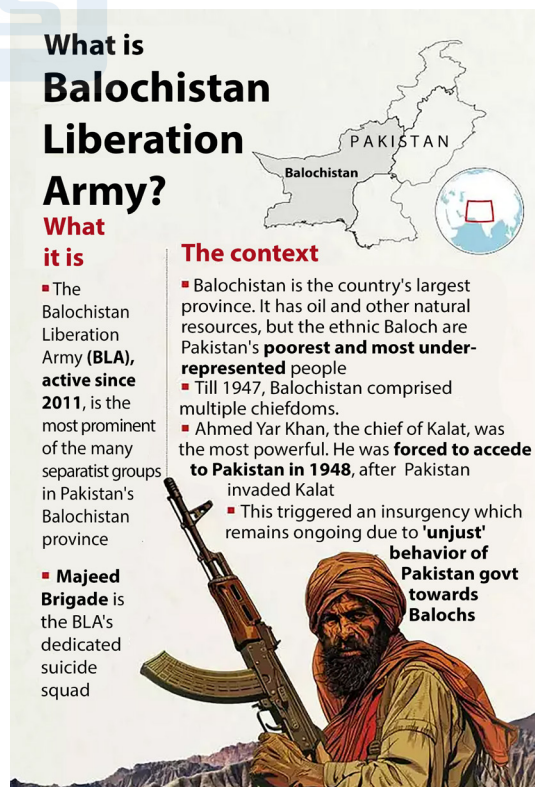
- During Partition, Kharan, Las Bela, and Makaran chose to join Pakistan, while **Kalat opted for independence.**
- ⮞ **Treaty with Muslim League:** On August 11, 1947, Kalat signed a treaty with the Muslim League, recognizing its independence.
- ⮞ **British Resistance:** Despite recognition, the British issued a memorandum stating the Khan of Kalat was unprepared for international responsibilities.
- ⮞ **Pakistan Military Action:** On March 26, 1948, the Pakistan Army moved into Baloch coastal regions (Pasni, Jiwani, Turbat). The Khan of Kalat had no choice but to agree to merge with Pakistan.
- ⮞ **Forceful Integration:** The annexation of Kalat into Pakistan led to discontent and resistance among the Baloch people.
  - Many nationalists saw the integration as a betrayal of their autonomy and cultural identity.
- ⮞ **Insurgencies:** Balochistan experienced numerous uprisings for independence, though Pakistan managed to suppress them.
- ⮞ **Current Status:** Once a sovereign state, Balochistan is now the most neglected and poverty-stricken province of Pakistan.
  - Despite being the largest province and rich in minerals, Balochistan contributes only about 4% to Pakistan's economy.

- ⮞ **Balochistan Liberation Army:**
  - The BLA are a Baloch ethnonationalist group who emerged in the 2000s with the aim of achieving independence for Balochistan.
  - Pakistan banned the organisation in **2006**, and the United States designated it as a global terrorist organisation in **2019**.

India's Stand on Balochistan

- ⮞ **Complex Position:**
  - India's stance on Balochistan is shaped by geopolitics, regional stability, and its relationship with Pakistan.
  - The India-Pakistan conflict over Kashmir makes any involvement in Balochistan a potential trigger for escalating tensions.
- ⮞ **Support for Self-Determination:** India supports the right to self-determination for Balochistan's people but avoids interfering in Pakistan's internal affairs.
- ⮞ Overall, India's stance on Balochistan involves **expressing concerns about human rights violations without interfering into the internal affairs**.

ROUTE OF THE JAFFAR EXPRESS

The train was stopped between Pehro Kunri and Gadalar, according to the Balochistan government

Balochistan, the largest of Pakistan's provinces by land area, is a dry plateau of rough terrain. The country's national highway 65 passes close to the attack site.
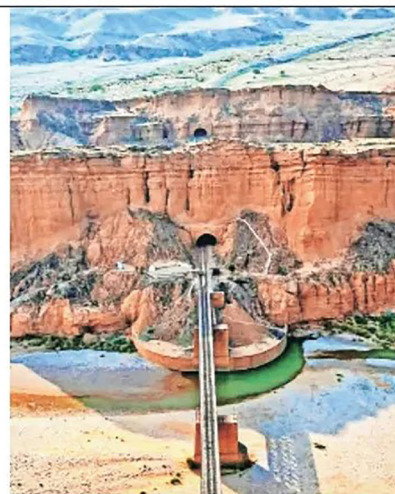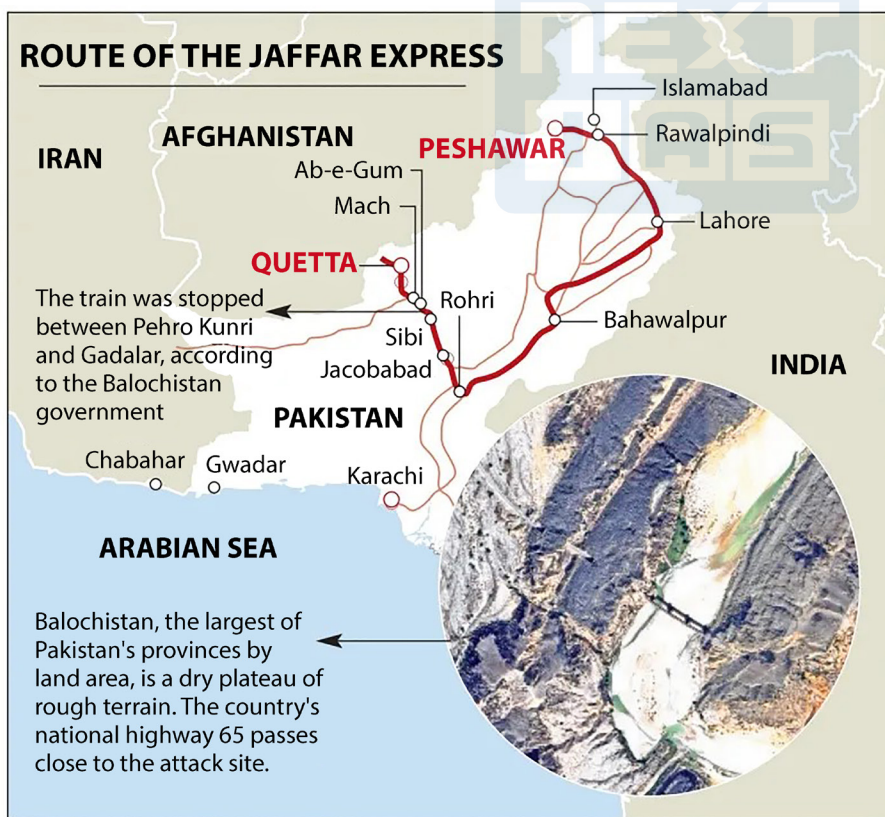
The 10-coach train came under attack near Tunnel Number 8 in a rugged, sparsely populated mountainous area (left) that has a network of 17 tunnels, including the historic Mashkaf Railway Tunnel (above) built by the British in the late 19th century.

3 ECONOMY

AGRICULTURAL INFRASTRUCTURE FUND (AIF) SCHEME

Context

Punjab has utilised 100% of the Rs 4,713 crore allocated to it by the Centre under the Agriculture Infrastructure Fund (AIF) scheme.

About

➲ **Objective:** Provide medium to long-term financing for agriculture infrastructure projects at the post-harvest stage.
   ◆ **Operational Period:** 2020-21 to 2032-33.
➲ **Loan Provision:** Rs. 1 Lakh crore loan through lending institutions, with an interest rate cap of 9%.
➲ **Eligible Beneficiaries:** Farmers, Agripreneurs, Primary agriculture cooperative societies, Farmers producer organisations, Start-ups, State-sponsored public-private partnerships integrated primary and secondary processing projects, and State agencies
➲ **Key features:**
   ◆ **Viable Farming Assets:** The scheme now includes the creation of infrastructure for 'viable projects for building community farming assets'.
   ◆ **PM KUSUM Component-A Integration** with the AIF has been allowed by the government.
   ◆ **Interest Subvention:** Offers 3% interest subvention per annum on loans up to ₹ 2 crore. Credit guarantee coverage through Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE).

Facts related to AIF

➲ As of August 28, 2024, Rs. 47,575 Crore has been sanctioned for 74,508 projects under the AIF scheme.
➲ The fund of Rs. 1 lakh Crore under the scheme will be disbursed till FY 2025–26.
➲ Generated over 8.19 Lakh rural employment opportunities in the agriculture sector.

Significance

➲ Offers support facilities to farmers and value chain actors for risk sharing and improved market access.
➲ Enhanced marketing infrastructure enables farmers to sell their produce directly.
➲ Investments in logistics infrastructure help minimize post-harvest losses.

INDIA'S ELECTRONICS MANUFACTURING AND EXPORT MARKET

Context

The IT Ministry has launched a Rs 23,000 crore incentive policy over six years to enhance domestic electronic components manufacturing.

About

➲ India aims to boost domestic value addition in smartphone manufacturing from **15-20% to 30-40%** by promoting local production of key electronic components.
➲ **Key Features** of the policy to boost production is as:
   ◆ **Offers incentives in three forms:** based on operational expenses (net incremental sales), capital expenses (eligible investments), or a combination of both.
   ◆ **Targets the manufacturing of critical components** like display modules, camera modules, PCBAs, lithium cell enclosures, resistors, capacitors, and ferrites.
   ◆ **Annual incentives** ranging between **Rs 2,300 crore and Rs 4,200 crore.**
   ◆ Open to both **greenfield (new) and brownfield (existing)** investments.

Global Scenario of Electronics Sector

➲ The global electronics market is estimated at **US$ 4.3 trillion.**
➲ The electronics GVC is intricate, with a select group of nations like **China, Taiwan, the USA, South Korea, Vietnam, Japan, Mexico, and Malaysia.**
   ◆ **China** is the world's largest electronics producer, accounting for nearly **60%** of worldwide electronics production.

India's Electronics Sector

➲ India's electronics sector reached **USD 155 billion in FY23.**
➲ The electronics production nearly doubled from **USD 48 billion in FY17** to **USD 101 billion in FY23,** driven primarily by mobile phones which constitute **43%** of total electronics production.
   ◆ This comprises **USD 86 billion** in finished goods production and **USD 15 billion** in components manufacturing.
➲ The country's electronics export is expected to reach **$120 Bn by FY26.**
➲ During May 2024, electronic goods exports were recorded at **$2.97 Bn** as compared to **$2.41 Bn** during May 2023, registering a growth of **22.97%.**

India's electronic goods exports and production by value (US$ billion)
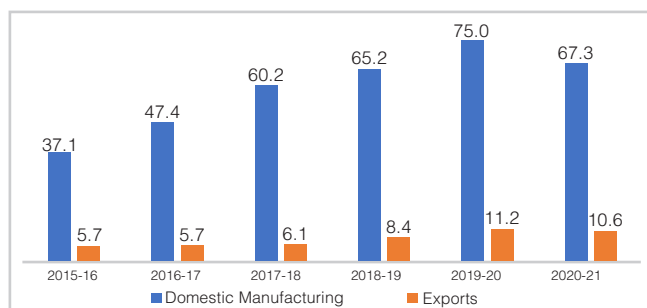
Government initiatives

- **Make in India, Digital India, and Startup India** for promoting domestic manufacturing and technological innovation.
- **Production Linked Incentive Scheme (PLI):** The scheme aims to attract large investments in the mobile phone manufacturing and specified electronic components, including **Assembly, Testing, Marking and Packaging (ATMP) units.**
- **National Policy on Electronics 2019 (NPE 2019)** It is a comprehensive framework to develop India as a global hub for electronics manufacturing.
- **Modified Electronics Manufacturing Clusters (EMC 2.0)** develops infrastructure with common amenities and industrial clusters for electronics production.
- **In India 100% FDI** is allowed under the automatic route. In the case of defense electronics, FDI up to 49% is allowed through automatic route and beyond 49% requires government approval.
- **Scheme for setting up of Semiconductor Fabs in India** provides fiscal support to eligible applicants for setting up of Semiconductor Fabs which is aimed at attracting large investments for setting up semiconductor wafer fabrication facilities in the country.

PRAVAAH AND SARTHI INITIATIVES OF RBI

Context

Recently, the Reserve Bank of India (RBI) has been awarded the Digital Transformation Award 2025 for Digital Initiatives by Central Banking, London.

About:

- It highlights the RBI's commitment to **innovation** and efficiency in governance through its groundbreaking digital initiatives, Pravaah and Sarthi.

Digital Initiatives By RBI

- **Sarthi System:** It is an internal workflow **digitization** system that has streamlined record management, automated processes, and enhanced data analysis.

- It has eliminated the reliance on manual paperwork, boosting operational efficiency across RBI departments by enabling secure digital submissions and improving collaboration.
- **Pravaah System:** It serves as a **digital regulatory application platform** for external users.
    - It allows seamless submission and processing of regulatory applications, integrating directly with the Sarthi database.
    - It has significantly reduced paperwork, enhanced transparency, and improved cybersecurity in financial documentation.

Impact of the Initiatives:

- Both the initiatives have empowered RBI employees and external stakeholders by providing **user-friendly platforms** for data management and regulatory processes.
- The success of these projects underscores the importance of in-house innovation and collaboration in achieving digital excellence.

REINSURANCE

Context

The Insurance Regulatory and Development Authority of India (IRDAI) has approved the first private reinsurance company, Valueattics Reinsurance.

About Reinsurance:

- **Definition:** Reinsurance is a **risk management mechanism** where an insurance company transfers a portion of its risk to another insurance company, called a reinsurer.
    - This helps insurers mitigate financial losses arising from large claims, such as natural disasters or major accidents.
- **Regulated by:** IRDAI, under the Insurance Act, 1938 and IRDAI (Reinsurance) Regulations, 2018.
- **Significance:** Protects insurers from insolvency due to large payouts, risk diversification & promotes market growth.
    - Companies can share or transfer specific risks with other companies.
- **Arbitrage**: Additional profits can be garnered by purchasing insurance elsewhere for less than the premium the company collects from policyholders.
- **Capital Management:** Companies can avoid having to absorb large losses by passing risk; this frees up additional capital.
- **Solvency Margins:** The purchase of surplus relief insurance allows companies to accept new clients and avoid the need to raise additional capital.
- **Expertise**: The expertise of another insurer can help a company obtain a higher rating and premium.

INCENTIVE SCHEME FOR BHIM-UPI TRANSACTIONS

Context

The Union Cabinet, chaired by the Prime Minister has approved an incentive scheme to promote low-value BHIM-UPI transactions (Person-to-Merchant - P2M) for the financial year 2024-25.

Key Highlights

- **Incentive Structure:**
  - 0.15% per transaction incentive for small merchant transactions up to ₹2,000.
  - Incentive distributed among Acquiring Bank, Issuer Bank, Payment Service Provider Bank, and App Providers.
- **Objectives:**
  - Promote the **indigenous BHIM-UPI platform.**
  - Strengthen the indigenous BHIM-UPI platform and boost transaction volumes to ₹20,000 crore in FY 2024-25.
  - Promote feature phone-based **UPI 123PAY & offline UPI Lite/LiteX for financial inclusion.**
  - Encourage UPI adoption in **Tier 3 to Tier 6 cities**, especially rural and remote areas.
- **Key Benefits:**
  - Zero cost UPI services for small merchants.
  - Continues the Merchant Discount Rate (MDR) exemption introduced in 2020 for UPI transactions. MDR is the fee paid by merchants when they accept digital payments.

About UPI

- The **Unified Payments Interface (UPI)** is a real-time payment system developed by the **National Payments Corporation of India (NPCI).** It allows users to link multiple bank accounts into a single mobile application, enabling instant money transfers.
- BHIM-UPI is the government-backed UPI application, **launched in 2016**, designed to promote seamless, fast, and secure digital payments.
  - The **NPCI International Payments Limited (NIPL), a subsidiary of NPCI**, is working to expand UPI & RuPay globally. UPI is now accepted in Singapore, UAE, France, Sri Lanka, Nepal, and other countries.

UNIFIED LOGISTICS INTERFACE PLATFORM

Context

The Unified Logistics Interface Platform (ULIP) launched under the National Logistics Policy (NLP) in September 2022, recently achieved a milestone of over 100 crore API transactions.

About ULIP

- **ULIP** is a key component of the **National Logistics Policy (NLP), launched in 2022**. It's also closely linked to the **PM Gati Shakti National Master Plan.**
- **Purpose:** To create a single window logistics platform, enhancing efficiency and reducing costs in India's logistics sector.
  - To integrate data from various government and private sector sources, providing real-time visibility of logistics operations.
- It is conceptualized **by NITI Aayog.**
- ULIP is operated by **NICDC Logistics Data Services Ltd. (NLDSL)**, a joint venture between the Government of India, represented by the **National Industrial Corridor Development and Implementation Trust (NICDIT)**, and Japanese IT firm NEC Corporation.

INDIA'S GOODS TRADE DEFICIT

Context

According to data from the Ministry of Commerce and Industry, India's goods trade deficit has reached a 42-month low, standing at $14.05 billion in February 2025.

About Trade Deficit:

- A **trade deficit** arises when the value of goods and services a country **imports** surpasses the value of those it **exports** during a specific timeframe. It indicates the extent to which a nation's imports exceed its exports.

India's Merchandise Trade
US $ Billion

	February 2024	February 2025	April-February 2023-24	April-February 2024-25
Exports	41.41	36.91 (▼-10.87%)	395.38	395.63 (▲0.06%)
Imports	60.92	50.96 (▼-16.35%)	621.19	656.68 (▲5.71%)
Trade Balance	-19.51	-14.05	-225.81	-261.05
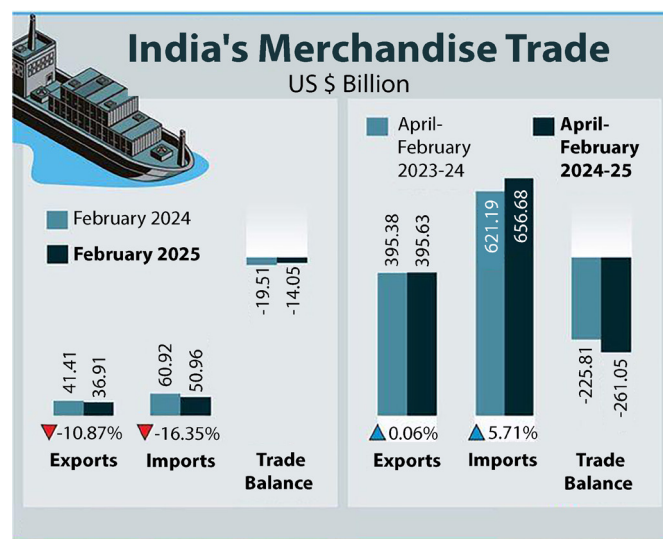
Key Factors Behind the Decline

- **Reduced Gold and Silver Imports:** Gold and silver imports fell to $2.7 billion, the lowest since June 2024.

- **Lower Crude Oil Imports:** Crude oil imports were valued at $11.89 billion, marking a 30% reduction compared to the same period last year. It is linked to falling international crude prices and reduced domestic demand.
- **Overall Import Contraction:** Total imports dropped to a 22-month low of $50.9 billion, reflecting a 16.3% year-on-year decline. It spans across various sectors, including pearls, precious stones, and coal.

Implications for the Economy

- **Strengthened Trade Position**: A narrowing trade deficit indicates improved management of trade flows and decreased reliance on imports, enhancing India's overall economic resilience.
- **Currency Stability**: Reduced trade deficits ease pressure on the Indian rupee, thereby supporting currency stability, especially during periods of global economic volatility.
- **Policy Implications**: The trend reflects the positive impact of government initiatives designed to reduce import dependency and stimulate domestic production, such as 'Make in India' and 'Atmanirbhar Bharat'.
- **Boost to Domestic Industry**: Lower trade deficits encourage domestic manufacturing sectors, promoting industrial growth, job creation, and skill enhancement.
- **Improved Investor Confidence**: A declining trade deficit strengthens investor sentiment, attracting increased foreign direct investment (FDI) and boosting economic confidence.
- **Foreign Exchange Reserves**: A reduction in trade deficit can contribute to the accumulation of foreign exchange reserves, providing a cushion against external economic shocks.
- **Reduced External Debt Risk**: By limiting import reliance, the country mitigates the risk of accumulating external debt, improving long-term financial stability.
- **Balanced Economic Growth**: A narrowed trade deficit fosters balanced and sustainable economic development by promoting self-sufficiency and equitable sectoral growth.

UNDER-FUNDING OF NUTRIENT SUBSIDY SCHEMES

Context

The Parliamentary Standing Committee on Chemicals and Fertilizers highlights several key issues and recommendations regarding India's fertilizer sector.

Key Recommendations of the Committee:

- **Funding Concerns:** The committee is concerned about the Ministry of Finance's reduction in the Department of Fertilizers' budget allocation for 2025-26, specifically impacting the **Nutrient-Based Subsidy (NBS) and Urea Subsidy Schemes.**

- It urges the Union Fertilizers Ministry to seek additional funds at the revised estimate stage to prevent negative effects on farmer subsidy schemes.
- **Nano Fertilizer Promotion:** Committee emphasizes the need to expand production capacity for nano urea and nano Diammonium Phosphate (DAP).
  - It calls for a strategy to popularize these nano fertilizers among farmers, citing their potential to improve crop yields and reduce conventional fertilizer usage.
- **Raw Material Security:** The committee highlights the lack of mining lease agreements for raw material extraction, exploration, refining, or production.
  - It recommends that the Centre enter into such agreements to strengthen domestic supply and achieve self-sufficiency in fertilizers.
- **Fund Utilization:** It points out underutilization of funds across various fertilizer categories during 2024-25.
  - It recommends that the Centre ensures full utilization of allocations in a planned and continuous manner.
- **Urea Subsidy Scheme:** Given urea's importance in food-grain production, the committee stresses the need for the Urea Subsidy Scheme to continue.

Nutrient Based Subsidy (NBS) Policy

- **Objective:** Launched in **2010**, the NBS Policy aims to:
  - Provide subsidized fertilizers to farmers
  - Promote balanced use of nutrients, ensuring soil health
  - Reduce fiscal burden by making subsidy nutrient-specific
- **Validity:** The policy has been approved for implementation until the financial year 2025-26.
- **Legal Framework:** It operates under the Fertilizer (Control) Order (FCO), 1985, which is issued under the Essential Commodities Act, 1955. The FCO sets standards for fertilizer use, specifications, licensing, and trading regulations.
- **Scope and Eligibility:** The NBS policy covers 25 grades of Phosphorus (P) and Potassium (K) fertilizers, including common ones like Di Ammonium Phosphate (DAP), Muriate of Potash (MOP), Mono Ammonium Phosphate (MAP), and Triple Super Phosphate (TSP).
  - The government sets a fixed subsidy rate (in Rupees per kilogram) for each primary nutrient in these fertilizers: Nitrogen (N), Phosphate (P), Potash (K), and Sulphur (S).
- **Subsidy Determination:** An Inter-Ministerial Committee (IMC) plays a critical role in recommending the per-nutrient subsidy rates for N, P, K, and S.
  - These recommendations are made before the start of each financial year and are then considered by the Department of Fertilizers for final approval.
- **Key implications:** The NBS policy allows for the price of fertilizers to fluctuate according to the cost of the raw materials used to produce the fertilizers. Thus the subsidy amount changes, but the farmer still receives a subsidized fertilizer.

ANTI DUMPING DUTY

Context

India has imposed anti-dumping duties on five Chinese goods, including aluminium foil, to protect domestic industries from the impact of cheaper imports from the neighbouring country.

About Anti-Dumping Duties:

➲ Anti-dumping duties are imposed to correct this trade pattern and restore fair competition. While not a protectionist measure, they aim to protect domestic industries from injury caused by dumping, and their use is allowed by the WTO.

➲ Duties were imposed based on recommendations from the **Directorate General of Trade Remedies (DGTR) under the Commerce Ministry.**

➲ They are imposed as per the multilateral regime of **Geneva-based World Trade Organization (WTO),** which aims to ensure fair trading practices and a level-playing field for domestic producers vis-a-vis foreign producers and exporters.

➲ **Article 6 in the General Agreement on Tariffs and Trade (GATT)** allows countries to take action against dumping.

  ◆ The Anti-Dumping Agreement clarifies and expands Article 6, and the two operate together.

  ◆ Dumping occurs when goods are sold at unfairly low prices in foreign markets, distorting trade.

GOVT ABOLISHED 6% EQUALISATION LEVY

Context

The govt. abolished the 6% Equalisation Levy (digital tax) on online advertisements, effective April 1, 2025.

About

➲ **Platforms:** This move benefits **advertisers on digital platforms like Google, X, and Meta.**

➲ **Equalisation Levy:** The Equalisation Levy on online ads **was introduced in 2016,** and the **Finance Act 2020 extended it to e-commerce services.**

  ◆ It was designed to **tax online advertising services, digital ad space, and related facilities.**

  ◆ The levy is charged at 6% in respect of the **sum received or receivable by a non-resident for online advertisement services.**

  ◆ In 2020, Equalisation Levy was **also imposed on non-resident** e-commerce operators. The rate was 2%, but **it was removed in 2024.**

➲ **Aim:** The proposal aims to show a **more accommodative stance toward the US,** which has threatened reciprocal tariffs starting April 2.

DALLE CHILLI

Context

The Agricultural and Processed Food Products Export Development Authority (APEDA) has successfully exported the first consignment of Dalle Chilli from Sikkim to the Solomon Islands.

About

➲ Dalle Chilli is known for its pungency, bright red color, and high nutritional value, with Scoville Heat Units (SHU) ranging from 100,000 to 350,000.

  ◆ **The Scoville scale** is a **measurement of the pungency** (spiciness) of peppers and other hot foods.

  ◆ The scale is based on the **concentration of capsaicin,** an active component of chili peppers that produces a burning sensation when it touches the tongue or skin.

➲ Dalle Chilli received the **Geographical Indication (GI) tag in 2020,** enhancing its marketability and identity.

➲ **Government Support:** The Indian government promotes organic farming in North East India through the MOVCD-NER scheme, boosting organic Dalle Chilli production.

➲ **Significance:** This export boosts Sikkim's global spice profile and highlights India's growing prominence in the organic agricultural market.

About GI Tag

➲ It is a **sign used on products** that have a **specific geographical origin** and possess qualities or a reputation that are due to that origin.

➲ Geographical Indications are part of the **intellectual property rights** that come under the **Paris Convention for the Protection of Industrial Property.**

➲ In India, Geographical Indications registration is administered by the **Geographical Indications of Goods (Registration and Protection) Act of 1999.**

  ◆ They are typically used for **agricultural products, foodstuffs, wine and spirit drinks, handicrafts, and industrial products.**

➲ The registration of a geographical indication is **valid for a period of 10 years,** it can be renewed from time to time for a further period of 10 years each.

PUBLIC ACCOUNTS COMMITTEE RECOMMENDATIONS FOR GST REGIME

Context

The Public Accounts Committee (PAC) has recommended a simplified Goods and Services Tax (GST) regime in its 19th report.

About

- GST legislation was first introduced in Parliament in 2014 as **The Constitution (122nd Amendment) Bill**.
- It was passed in 2016 and renumbered as **The Constitution (101st Amendment) Act, 2016**, after approval from the Rajya Sabha.
- **Coverage under GST:**
  - **Central GST** replaces Central Excise Duty, Service Tax, etc.
  - **State GST** encompasses taxes such as VAT, luxury tax, entertainment tax, etc.
  - **Integrated GST** is applicable to inter-state commerce, functioning as a coordination mechanism between Central and State taxes rather than being a separate tax category itself.
- **Article 246A**: Grants concurrent authority to both the Union and State governments to levy taxes on goods and services.

Main Features of GST

- **Supply-based Taxation**: GST applies to the **supply** of goods and services, replacing the earlier system focused separately on manufacturing, sale, or provision of services.
- **Destination-based Taxation**: GST follows a **destination-based consumption tax** model, unlike the previous origin-based system, meaning tax revenue accrues where goods or services are consumed.
- **Dual GST Structure**: GST in India operates under a **dual model**, allowing both Centre and States to simultaneously tax the same transaction base. The central levy is called **Central GST (CGST)**, while state levies are known as **State GST (SGST)**.
- **Integrated GST (IGST)**: Imports of goods and services are treated as inter-state transactions, attracting **IGST** alongside regular customs duties.
- **Mutually Agreed GST Rates**: Rates for CGST, SGST, and IGST are decided through mutual consensus between the Centre and States, based on recommendations by the **GST Council**.
- **Multiple Rate Structure**: Initially, GST was implemented with four primary rates—**5%, 12%, 18%, and 28%**—with specific items categorized into each slab as recommended by the GST Council.

Objectives

- **GST** aims to simplify India's indirect tax system by combining multiple Central and State taxes into one, reducing the cascading effect and creating a unified national market.
- It stimulates economic growth, broadens the tax base, increases trade volumes, and improves tax compliance.

Recommendations of the PAC

- The **Public Accounts Committee (PAC)** urged the Finance Ministry to review the current framework to eliminate unnecessary complexities and ease compliance.

- The Committee expressed concerns about issues in the **biometric-based Aadhaar authentication process,** potentially hindering the "One Nation One Tax" vision.
- **Other Recommendations:**
  - **Streamlining the process by consolidating forms**, reducing filing frequency, and introducing a tiered compliance approach for smaller businesses.
  - **Improving the portal's ease of use** and providing clearer guidance for taxpayers during filing.
  - **Addressing the issue of harsh criminal penalties** for unintentional errors in compliance, particularly for honest taxpayers.
  - **Using data analytics and AI tools** to accurately project GST revenue, addressing the decline in indirect tax share.
  - **Implementing a more efficient refund system** with clear timelines, regular updates, and a dedicated grievance redressal mechanism.
  - **Simplifying GST compliance for MSMEs** by automating return filing and refund processing with reduced frequency and easier online reporting.

GROWTH OF INDIA'S E-RETAIL MARKET

Context

India's e-retail market is expected to triple to $170–$190 billion in Gross Merchandise Value (GMV) by 2030 driven by an expanding shopper base and innovative business models.

India's Retail Industry

- It is one of the fastest-growing globally and India is a key market for international retail giants, driven by its large middle class and untapped potential.
- The urban Indian consumer's increasing purchasing power is fostering demand for branded goods across various categories.

Drivers of Growth

- **Favorable Demographics**: India's large, young population, rising middle class, urbanization, and changing lifestyles are major contributors to retail growth, supported by favorable government policies.
  - User adoption is spreading to Tier-2 and Tier-3 cities, with 60% of new shoppers since 2020 coming from smaller cities.
  - The Northeast region shows higher e-retail penetration, with 1.2 times higher shopper adoption than other parts of India.
- **Increase in Income and Purchasing Power:** India ranks amongst the top economies in GDP by Purchasing Power Parity (PPP), with rising income levels and improved purchasing power, alongside a significant reduction in extreme poverty.

➲ **Change in Consumer Mindset**: A shift from traditional retail to online platforms has led to increased convenience, wider product selection, price sensitivity, trust in online transactions, and greater reliance on technology and fast delivery.

➲ **Brand Consciousness**: Consumers in India are becoming more brand-conscious, influenced by economic, cultural, and technological factors.

➲ **Easy Consumer Credit and Quality Products**: The growth of unsecured retail loans alongside a rise in quality products, has further boosted consumer spending.

Current Status

➲ India is currently the **world's second-largest e-retail market** and had over 270 million online shoppers in 2024.
  ◆ India now trails only China, which boasts a staggering 920 million digital buyers.

➲ The market is valued at $60 billion in 2024, with a growth rate of 10–12%, down from over 20% due to macroeconomic pressures.

➲ Categories like **grocery, lifestyle, and general merchandise** are expected to drive **70%** of incremental growth by 2030, with penetration levels rising two to four times.
  ◆ **Quick commerce (Q-commerce)**, accounting for **10% of total e-retail GMV**, is forecast to grow over 40% annually.

5 YEARS OF NATIONAL TECHNICAL TEXTILES MISSION

Context

Recently, the National Technical Textiles Mission completed 5 Years.

About

➲ Technical textiles are textile materials and products manufactured primarily for their technical performance and functional properties, rather than for **aesthetic or decorative characteristics.**

➲ They are engineered for **durability, strength, flexibility, insulation, filtration, and protection.** They often involve advanced fibers like **aramids, carbon fiber, and nonwovens.**

➲ They are used in products that help protect people, **improve machinery, and solve practical problems**, such as in car parts, building materials, medical equipment, and safety gear.

National Technical Textiles Mission (NTTM)

➲ It was launched in **2020 by the Ministry of Textiles** to boost technical textiles in India. Identified as a **sunrise sector** by the Government of India.

➲ **Key Components:**
  ◆ **Research, Innovation, and Development:** It supports R&D in technical textiles, focusing on new materials and processes.
  ◆ **Promotion and Market Development**: It aims to increase the adoption of technical textiles through market promotion and international collaborations.
  ◆ **Export Promotion**: It focuses on boosting exports of technical textiles, with a dedicated export council.
  ◆ **Education, Training, and Skill Development:** It promotes education, skill training, and internships in technical textiles at leading institutes and industries.

NTTM's 'GREAT' Scheme Empowering Startups in Technical Textiles

MINISTRY OF TEXTILES

■ **GREAT Scheme**: Boosts startups under NTTM
■ **Startup Empowerment**: 8 startups approved, each receiving up to ₹ 50 Lakhs
■ **Military Innovation**: Braided composites & Radome Integrated IFF Antenna
■ **Healthcare Innovation**: Composite surgical simulation models for Doctor training
■ **Energy Innovation**: Nano-fiber infused textiles for Energy Generation & Sensing
■ **Self-Reliance**: Empowering Innovators to lead India in Technical Textiles

Radome with Antenna
Surgical Simulation Model
Carbon Braided Composite

Additional Information

➲ India's textile industry plays a vital role in the economy and is renowned for producing some of the most innovative fabrics globally. India is the **6th largest exporter of textiles globally,** with a **3.9% share in world textile exports**.

➲ It contributes nearly **2% to the country's GDP**.

➲ The sector is set to grow to **US$350 billion by 2030** further strengthening India's position in the global market. This growth is expected to create 3.5 crore jobs.

INDIA BECOMES WORLD'S 2ND-LARGEST EXPORTER OF TEA IN 2024

Context

As per the Indian Tea Board, India has become the second largest tea exporter in the world.

About

➲ **India's tea exports in 2024:** 255 million kg, **surpassing Sri Lanka and ranking second after Kenya.**

- **Export value:** Increased by 15%, from Rs 6,161 crore in 2023 to Rs 7,111 crore in 2024.
- **Types of tea exported:** Primarily black tea (96%), with small quantities of regular, green, herbal, masala, and lemon tea.
- **Key driver:** Significant rise in shipments to West Asia, especially Iraq, now accounting for 20% of India's tea exports.
- **India's Export destinations:** Over 25 countries, including UAE, Iraq, Iran, Russia, US, and UK.
- **Prominent tea regions:** Assam (Assam Valley, Cachar) and West Bengal (Dooars, Terai, Darjeeling).
- **Contributing factors:** Promotion of tea production, branding efforts, and improvement in tea workers' welfare.

Tea Board of India

- It was set up as a **statutory body in 1954** under the **Tea Act, 1953.** It was established for the purposes of **regulating the Indian tea industry and protecting the interests of tea producers in India.** All teas produced in the tea growing areas of India are **administered by the Tea Board.**
- The Board consists of **32 Members,** including Chairman and Deputy Chairman appointed by the Government of India representing different sections of the Tea industry.
- **Head Office:** Kolkata.

10TH ANNIVERSARY OF SAGARMALA PROGRAMME

Context

It was launched in 2015 by the Ministry of Ports has revolutionized India's maritime sector.

About

- **Objectives:** To streamline logistics, reduce costs, and enhance international trade competitiveness by shifting from traditional, infrastructure-heavy transport to efficient coastal and waterway networks.
  - The program focuses on port modernization, industrial growth, job creation, and sustainable coastal development, ensuring minimal infrastructure investment while maximizing economic impact.

Five Pillars & Subcategories of the Sagarmala Programme
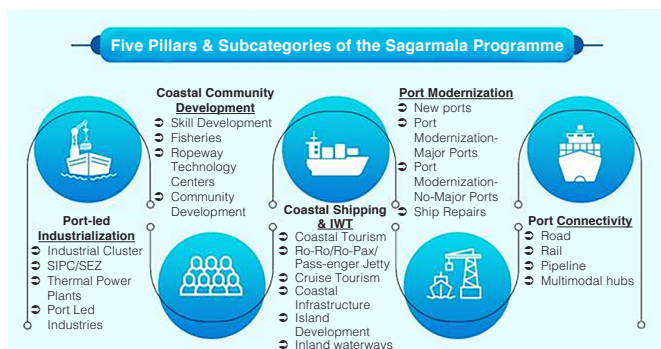
- **Implementation Mechanism:**
  - Major Ports, central ministries, State Governments, state maritime boards, and other relevant agencies execute projects.
  - Projects are selected based on the Master Planning of Major Ports, meetings of the National and State Steering Committees.
- **Funding Structure:**
  - Many projects are funded through the internal resources of MoPSW agencies, including Major Ports.
  - Priority is given to private sector participation, with PPP models implemented wherever feasible.
  - Sagarmala Development Company Limited (SDCL) was established to support project Special Purpose Vehicles (SPVs).
- **Achievements:**
  - Coastal shipping grew 118% in a decade, Ro-Pax ferries moved over 40 lakh passengers, and inland waterway cargo rose 700%.
  - Nine Indian ports rank in the world's top 100, with Vizag in the top 20 container ports.

SAGARMALA 2.0 – OVERVIEW

01 Focus Areas Shipbuilding, repair, breaking, and recycling
02 Budgetary Support ₹40,000 crore allocated for strategic maritime growth
03 Investment Potential Aims to mobilize ₹12 lakh crore over the next decade
04 Economic Impact Boosts infrastructure and drive Coastal Economic Growth
05 Strategic Vision Aligns with Viksit Bharat & Atmanirbhar Bharat 2047 goals
06 Global Positioning Strengthens India as a leading maritime powerhouse

Sagarmala Startup Innovation Initiative (S2I2)

- Launched on **March 19th 2025**, it is a transformative program designed to **foster innovation and entrepreneurship in India's maritime sector.**
- S2I2 supports startups in green shipping, smart ports, maritime logistics, shipbuilding technology, and sustainable coastal development by providing funding, mentorship, and industry partnerships.
- Anchored in the principles of **RISE—Research, Innovation, Startups, and Entrepreneurship**-S2I2 will drive technological advancements, enhance industry competitiveness, and accelerate economic growth.

NATIONAL BOARD FOR WILDLIFE

Context

The Prime Minister chaired the 7th meeting of the National Board for Wildlife (NBWL) at Gir National Park in Gujarat.

Key Announcements by the NBWL:

➲ **Riverine Dolphin Survey:** India's first dolphin census recorded 6,327 dolphins across 28 rivers in 8 states. Uttar Pradesh had the highest count, followed by Bihar, West Bengal, and Assam.

➲ **Asiatic Lion Conservation:** The 16th Lion Population Estimation, set for 2025, will track conservation progress. Barda Wildlife Sanctuary will undergo habitat enhancements to aid lion dispersal.

➲ **Cheetah Reintroduction Project:** The project will be expanded to Gandhisagar Sanctuary (MP) and Banni Grasslands (Gujarat) to increase biodiversity and stabilize the population.

➲ **National Referral Centre in Junagadh:** The centre will focus on wildlife disease management.

➲ **Geospatial Mapping & AI:** These technologies will be used to prevent forest fires and human-wildlife conflicts.

➲ **Endangered Species Conservation:**
  ◆ **Gharial Conservation:** Efforts to restore gharial populations affected by habitat loss.
  ◆ **National Great Indian Bustard Conservation Plan:** Measures to protect and increase the population of the critically endangered species.

➲ Tiger Conservation Beyond Reserves.

About the National Board for Wildlife (NBWL):

➲ **Statutory Body:** Established under Section 5A of the Wildlife (Protection) Act, 1972 (WLPA).

➲ **Role & Responsibilities:**
  ◆ India's highest advisory body on wildlife conservation, especially for Protected Areas (PAs).
  ◆ Approves or rejects projects that impact wildlife habitats and PAs.

➲ **Restrictions Without NBWL Approval:** No construction of tourist lodges, alteration of PA boundaries, habitat destruction, or de-notification of Tiger Reserves.

➲ **Organization Structure:** The 47-member committee is chaired by the Prime Minister, with the Minister of Environment, Forest & Climate Change serving as Vice Chairperson.

➲ **Standing Committee of NBWL:** A 10-member independent body, led by the Minister of Environment.
  ◆ Primarily functions as a project clearance authority, while NBWL focuses on policy-related decisions.

Gir National Park

➲ **Location:** Situated in the Saurashtra region of Gujarat.

➲ **Established:** In **1965**, as a sanctuary, and later upgraded to a national park in **1975**.

➲ **It is the only place in the world outside Africa** where a lion can be seen in its natural habitat.
  ◆ Since the late 1960s, Asiatic lion numbers have increased from less than 200 to 674 (Census 2020).

➲ Gir is a home to 40 species of mammals and 425 species of birds.

SEAGRASS CONSERVATION

Context

A recent review published in Nature Reviews Earth & Environment highlights declining status of seagrass worldwide due to human activities at a rate of 1-2% per year.

About Seagrasses

➲ Seagrasses are **submerged, flowering plants that form dense underwater meadows**.

➲ They evolved from terrestrial plants and adapted to marine environments.

Importance of Seagrass Ecosystems

➲ **Carbon Sequestration and Climate Action:** Known as the **"lungs of the sea,"** seagrasses can **store carbon up to 35 times faster than tropical rainforests**.

➲ **Biodiversity and Marine Life Protection:** Seagrass meadows provide habitat and nurseries for **fish species** and shelter for **threatened & endangered marine species**.

➲ **Coastal Protection:** Acting as natural barriers, seagrasses protect coastal communities from **storms and erosion**, thereby reducing disaster risks.

➲ **Economic Values:** Seagrass meadows provide immense economic benefits, **valued** at **US $6.4 trillion annually**. They support coastal economies by sustaining fisheries, tourism.

Seagrass in India

➲ India, with a recalculated **coastline of 11,098 km (2023-24)**, has extensive seagrass meadows, particularly in the **Gulf of Mannar, Palk Bay, Andaman and Nicobar Islands, Lakshadweep Islands, and the Gulf of Kutch**.

Threats to Seagrass Ecosystems

➲ **Anthropogenic Activities** like urbanization, pollution and agricultural activities.

➲ **Weak Enforcement of Laws** for protecting coastal ecosystems.

➲ **Biodiversity Loss** and unregulated fishing and boating activities.

Global and Indian Restoration Efforts

➲ **Global Success Stories:**

- **Seagrass Watch:** A collaborative citizen science program that trains volunteers, NGOs, and research organizations to monitor, document, and conserve seagrass habitats worldwide.

- **Blue Carbon Initiative:** A global project focusing on carbon sequestration in coastal ecosystems, including mangroves, salt marshes, and seagrasses.

➲ **Indian Conservation Initiatives:**

- **National Policy on Marine Fisheries (2017):** Recognizes seagrass meadows as essential coastal marine ecosystems alongside mangroves and coral reefs.

- **Climate Resilience Project:** Implemented in Andhra Pradesh, Maharashtra, and Odisha. Supported by a grant from the **Global Climate Fund (GCF).**

- Seagrass Restoration in Gulf of Mannar and Palk Bay.

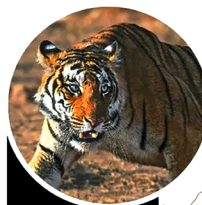# MADHAV NATIONAL PARK 58TH TIGER RESERVE

Context

Recently, the Environment Minister announced that Madhav National Park in Madhya Pradesh has been designated as India's 58th tiger reserve.

About Tiger reserve Notification Process:

➲ Tiger Reserves are notified by State Governments under Section 38V of the Wildlife (Protection) Act, 1972, on the advice of the National Tiger Conservation Authority (NTCA). The steps are:

➲ **Proposal Submission:** The State submits a proposal to NTCA.

➲ **In-principle Approval:** NTCA gives initial approval and requests a detailed proposal.

➲ **Recommendation:** NTCA reviews and recommends the proposal to the State.

➲ **Notification:** The State Government officially notifies the area as a Tiger Reserve.

Homes for the big cat

As of the 2023 tiger census, India is estimated to have 3,682 tigers. About 30% of them are considered to be living outside tiger reserves

Tiger reserves are spread across the length and breadth of India, with Madhya Pradesh having the highest number of nine reserves

Uttarakhand | 2
Arunachal Pradesh 3
Jharkhand 1
Bihar 1
Assam 4
Rajasthan 5
U.P. 3
M.P. 9
Maharashtra 6
Bengal 2
Mizoram 1
Chhattisgarh 4
Odisha 2
A.P. 1
Telangana 2
Karnataka 5
Kerala 2
Tamil Nadu 5

KEY DETAILS ABOUT MADHAV NATIONAL PARK	
Location	Located in Shivpuri district in the Chambal region of Madhya Pradesh. It has become the **ninth tiger reserve in the state**, the highest in any state.
Geography	Located on the northern fringe of the Central Highlands, part of the Upper Vindhyan Hills, with plateaus and valleys.
Lakes	Sakhya Sagar(RAMSAR Site) and Madhav Sagar in the southern part, supporting aquatic biodiversity and terrestrial species.
River	Manier and Sind River.
Wildlife Corridor	It functions as a key wildlife corridor linking the Ranthambore Tiger Reserve (Rajasthan) and Kuno National Park.
Vegetation	Northern tropical dry deciduous mixed forests and Dry Thorn Forests.
Flora	Kardhai, Salai, Dhaora, Khair, with understory plants like Ber, Makor, and Karonda. Jamun and Mahua grow along nullahs.
Fauna	Herbivores include Nilgai, Chinkara, Chowsinga, Chital, Sambar, and Barking Deer. Carnivores include Leopard, Wolf, Jackal, Fox, and Wild Dog.

WORLD AIR QUALITY REPORT 2024

| Context |

According to the World Air Quality Report 2024 (released by Swiss company IQAir), thirteen of the world's top 20 most polluted cities are in India.

Key Findings of the Report

- India is the **fifth most polluted country** in the world, with an average Air Quality Index (AQI) of **50.6 μg/m3** – 10 times higher than the World Health Organization's (WHO) annual PM2.5 guideline value of **5 μg/m3.**
- **Byrnihat City on the Assam-Meghalaya border being the most polluted.**
- **Delhi** continues to be the most polluted **Capital** city in the world with an average PM 2.5 concentration of **91.8 μg/m3**.
- Out of the 138 countries and regions, **126 (91.3%)** exceeded the WHO annual PM2.5 guideline value of 5 μg/m3.
  - Only **17%** of global cities met WHO air pollution guidelines.
- PM2.5 concentrations decreased in every country in Southeast Asia, though **trans-boundary haze and lingering El Niño conditions** remain major factors.

MOST POLLUTED CITIES IN THE WORLD IN 2024		
Rank	City	Country
1	Byrnihat	India
2	Delhi	India
3	Karaganda	Kazakhstan
4	Mullanpur	India
5	Lahore	Pakistan
6	Faridabad	India
7	N'Djamena	Chad
8	Loni	India
9	New Delhi	India
10	Multan	Pakistan
11	Peshawar	Pakistan
12	Sialkot	Pakistan
13	Gurugram	India
14	Ganganagar	India
15	Hotan	China
16	Greater Noida	India
17	Bhiwadi	India
18	Muzaffarnagar	India
19	Hanumangarh	India
20	Noida	India

RECOMMENDED 2021 AQG LEVELS COMPARED TO 2005 AIR QUALITY GUIDELINES			
Pollutant	Averaging Time	2005 AQGs	2021 AQGs
$PM_{2.5}$, μg/m³	Annual	10	5
	24-hour[a]	25	15
PM_{10}, μg/m³	Annual	20	15
	24-hour[a]	50	45
O_3, μg/m³	Peak season[b]	-	60
	8-hour[a]	100	100
NO_2, μg/m³	Annual	40	10
	24-hour[a]	–	25
SO_2, μg/m³	24-hour[a]	20	40
CO, mg/m³	24-hour[a]	–	4

Air Pollution and Its Concerns

- When harmful substances (pollutants) – particles, gases, or matter – are released into the air and reduce its quality, the air is polluted.
- **Common air pollutants include:** Particulate Matter (PM), Nitrogen Dioxide (NO2), Sulfur Dioxide (SO2), Ozone (O3), Carbon Monoxide (CO), Volatile Organic Compounds (VOCs), Lead etc.
- **Concerns:**
  - **Health Related:** Respiratory issues, cardiovascular problems, reduced lung function.
  - **Environmental:** Ecosystem damage, Biodiversity loss, Water pollution, climate change, crop damage.
  - **Healthcare Costs:** The health impacts of air pollution result in increased healthcare costs, including expenses related to the treatment of respiratory and cardiovascular diseases.

Steps Taken by Government of India to combat Air Pollution

- **National Clean Air Programme (NCAP): Launched in 2019,** NCAP is a comprehensive initiative with the goal of reducing air pollution in identified cities and regions across India.
  - The program focuses on improving air quality monitoring, implementing stricter emission standards, and promoting public awareness.
- **Bharat Stage VI (BS-VI) Emission Standards:** The government implemented BS-VI emission standards for vehicles nationwide in **2020**.
- **Pradhan Mantri Ujjwala Yojana (PMUY):** The PMUY scheme aims to provide **clean cooking fuel** to households by promoting the use of liquefied petroleum gas (LPG) as an alternative to traditional biomass-based cooking methods.

- **FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) Scheme:** The FAME scheme promotes the adoption of electric and hybrid vehicles to reduce air pollution caused by vehicular emissions.
- **Green Initiatives for Sustainable Habitat (GRIHA):** GRIHA is an initiative **to promote sustainable and environmentally friendly** practices in the construction and operation of buildings.
- **Waste Management Programs** including the **Swachh Bharat Abhiyan,** aim to address solid waste issues and promote cleaner disposal methods.
- **Commission for Air Quality Management**: The Commission has been set up for Air Quality Management in the National Capital Region and Adjoining Areas for better coordination, research, identification, and resolution of problems surrounding the air quality index.
- **Graded Response Action Plan (GRAP):** It is a set of emergency measures that kick in to prevent further deterioration of air quality once it reaches a certain threshold in the Delhi-NCR region.
- **Promotion of Public Transportation:** Encouraging the use of public transportation, such as buses and metro systems, helps reduce the number of individual vehicles on the road, consequently lowering vehicular emissions.

RIGHT TO DEVELOPMENT

Context

The Supreme Court recently set aside the NGT order restraining the Auroville Foundation from proceeding with its township project in Puducherry.

Background:

- **Auroville** is an experimental township in **Tamil Nadu**.
- The **National Green Tribunal (NGT) and Madras High Court** stopped construction due to **environmental clearance issues**.
  - The **Auroville Foundation** challenged these orders in the **Supreme Court**.
  - The Foundation argued that the projects were part of the **approved Master Plan** and did **not require extra clearance**.

Key Points of the Supreme Court Judgment:

- The Supreme Court **set aside both the NGT's 2022 order** and the **Madras High Court's 2024 ruling** that halted development at Auroville.
- The Supreme Court said that the **NGT did not have the authority** to give such orders, and its decision was **not legally valid**.
- The judgment emphasized the need to maintain a **balance between environmental protection and developmental rights**, calling it a **"golden balance"**.

- The **right to a clean environment** is a **fundamental right** under **Articles 14 and 21**, but the **right to development** is also protected under **Articles 14, 19, and 21** of the Constitution.
- The Supreme Court recognized both the **precautionary principle and the polluter pays principle** as part of India's environmental law.

Precautionary Principle

- The precautionary principle enables decision-makers **to adopt precautionary measures when scientific evidence about an environmental or human health hazard is uncertain and the stakes are high.**
- It first emerged during the 1970s and has since been enshrined in a number of international treaties on the environment.
- The father of the precautionary approach is **Hippocrates**, who said "As to diseases make a habit of two things – to help, or at least, to do no harm"

Polluter Pays Principle

- The 'polluter pays' principle is the commonly accepted practice that **those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment.**
- For instance, a factory that produces a potentially poisonous substance as a by-product of its activities is usually held responsible for its safe disposal.
- The polluter pays principle is part of a set of broader principles to guide sustainable development worldwide (formally known as the 1992 Rio Declaration).

US WITHDRAWN FROM LOSS AND DAMAGE FUND

Context

The US has withdrawn from the board of the Loss and Damage Fund.

About

- It was established at the **2022 UNFCCC Conference (COP27)** in Egypt to provide financial support to regions suffering both economic and non-economic losses caused by climate change.
- These include **extreme weather events** and slow-onset processes, such as rising sea levels.
- The LDF is overseen by a Governing Board that determines how the Fund's resources are disbursed, with the World Bank serving as the interim trustee.

Objectives

➲ The purpose of the Fund is **to assist developing countries that are particularly vulnerable to the adverse effects of climate** **change** in responding to economic and non-economic loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events.

| COMPARISON BETWEEN MITIGATION, ADAPTATION AND LOSS AND DAMAGE		
Concept	**Description**	**Examples**
Mitigation	Actions aimed at limiting climate change by reducing greenhouse gas emissions.	Cutting greenhouse gas emissions.
Adaptation	Proactive measures taken by countries to cope with the impacts of climate change.	Great Green Wall Initiative in the Sahel and West Africa to combat global warming effects in Africa.
Loss and Damage	Refers to the irreversible impacts of climate change that cannot be avoided or mitigated through adaptation.	Floods in Pakistan or the risk of submergence of the Maldives due to rising sea levels.

WORLD'S LARGEST WHITE HYDROGEN DEPOSIT

Context

France has discovered a massive 46-million-ton white hydrogen reserve in the Moselle region.

About

➲ White hydrogen, a **naturally occurring gas in the Earth's crust**, is a relatively new discovery in the energy sector.

➲ Unlike other forms — **gray, brown, blue, and green hydrogen** — white hydrogen requires **no industrial production and emits no carbon**, making it an **environmentally superior energy source.**

➲ Its potential is enormous, with deposits found worldwide, including in the US, Russia, Australia, and Europe.
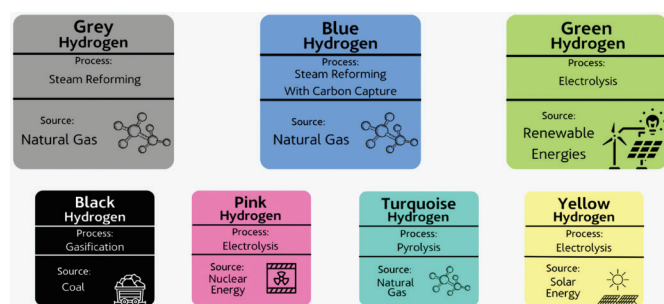
GLOBAL FOREST VISION (GFV) 2030

Context

According to the Global Forest Vision report, the world lost 6.37 million hectares of forests in 2023 alone, threatening global climate and biodiversity goals.

About

➲ The report is released by Forest Declaration Assessment (FDA).

➲ FDA was launched in **2015** as the **New York Declaration on Forests (NYDF) Progress Assessment.**

◆ The NYDF, is **a voluntary, non-binding declaration**, was adopted in **2014** at the UN Climate Summit.

➲ It sets **10 goals, including halting deforestation by 2030** and restoring 350 million hectares of degraded landscapes.

➲ India is **not yet a signatory to the NYDF.**

Key Findings

➲ **Alarming Forest Loss:** 6.37 million hectares of forest lost in 2023. Equivalent to 9 million soccer fields.

◆ **Major drivers:** Palm oil, soy, beef, timber.

◆ Affects regions like the Amazon, Southeast Asia, and Africa.

➲ **Cost to Biodiversity:**

◆ **Amazon:** Cattle ranching is the largest cause of deforestation, responsible for about 80 percent of deforestation across all Amazon countries.

◆ **Southeast Asia:** Palm oil expansion threatens orangutans, Sumatran tigers.

⬩ Palm oil alone contributes 5% to tropical deforestation.

Eight Priority Actions for 2030 GFV:

➲ **Ambition:** Integrate forest goals into national climate and biodiversity plans, as well as the outcomes of UNFCCC COP30.

➲ **Trade:** Collaborate to promote trade that is legal and free from deforestation, conversion, and degradation.

➲ **Finance:** Significantly increase funding for forests, in alignment with the Forest & Climate Leaders' Statement on Forest Carbon Results-Based Payments and Credits (2024).

➲ **Rights:** Ensure the land rights of Indigenous Peoples (IPs) and Local Communities (LCs) are protected.

➲ **Supervision:** Governments and financial supervisors must ensure that forest-related risks are properly assessed, managed, and mitigated by financial institutions.

- **Subsidies:** Repurpose harmful subsidies towards sustainable food systems, bioeconomy transitions, and sustainable forest management.
- **Governance:** Strengthen governance in the land-use sector to align with global commitments.
- **Debt:** Enhance fiscal flexibility in multilateral development finance by recognizing the value of forests' natural capital as assets in national debt management.

VANTARA

> **Context**
>
> *Prime Minister Narendra Modi inaugurated Vantara.*

About:

- It is a unique wildlife conservation, rescue, and rehabilitation initiative in **Jamnagar**, Gujarat.
- It is the **world's largest wildlife rehabilitation centre**.
- It is home to over 1.5 lakh rescued, endangered, and threatened animals, offering them a home away from home and a second chance at life.
- **Awards and Recognition:** The Central government awarded Vantara the prestigious '**Prani Mitra**' National Award under the 'Corporate' category, recognizing the exceptional contributions of the Radhe Krishna Temple Elephant Welfare Trust (RKTEWT) for elephant rescue, treatment, and care.

CARBON INTENSITY

> **Context**
>
> *Carbon intensity is a useful way to measure how much carbon a particular sector is emitting and how it has increased or decreased over time.*

About

- **Carbon intensity** measures how much **carbon dioxide (CO2)** is released to produce a unit of electricity or other activity.
  - The carbon intensity of electricity is measured in grams of CO2 per **kilowatt hour (kWh).**
  - **Example:** The carbon intensity of the steel sector can be measured as the number of tonnes produced per tonne of carbon dioxide emitted.
- An entire country's carbon intensity can be understood by **dividing the growth in GDP per capita** by the amount of carbon dioxide emitted.
- India's annual per capita carbon emission is only about one-third of the global average.

MISSION AMRIT SAROVAR

> **Context**
>
> *The Indian Railways will dig ponds as part of the Union government's Mission Amrit Sarovar that aims to address the critical issue of water scarcity in the country.*

About

- It was launched on **April 24, 2022,** to conserve water for the future by developing and rejuvenating ponds (Amrit Sarovars) across India.
- It aims to develop or **rejuvenate 75 Amrit Sarovars** in each district of India, totaling approximately 50,000 pounds nationwide.
- **Features:**
  - It is a "**Whole of Government" approach** with participation from multiple ministries:
    - Rural Development, Jal Shakti, Culture, Panchayati Raj, Environment, Forest & Climate Change, and technical organizations.
  - The works are being implemented by States and Districts with convergence from various ongoing schemes like:
    - Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), 15th Finance Commission Grants, Pradhan Mantri Krishi Sichayi Yojna sub-schemes like Watershed Development Component and Har Khetko Pani.
    - Public contributions such as crowdfunding and Corporate Social Responsibility (CSR) are allowed to support the initiative.
- **Importance:**
  - Amrit Sarovars will provide opportunities for **livelihood** through activities such as irrigation, fisheries, duckery, water chestnut cultivation, water tourism, and other related activities.
  - The ponds will act as social gathering points in the localities and serve as sites for flag hoisting on Independence Day.
- **Progress:** As of January 2025, over 68,000 Sarovars have been completed, improving surface and groundwater availability across various regions.

BHADRA WILDLIFE SANCTUARY

> **Context**
>
> *The Forest Department is working out a plan for the capture and rehabilitation of wild elephants involving releasing them in a phased manner in the Bhadra Wildlife Sanctuary.*

About

➲ Bhadra Wildlife Sanctuary is a prominent wildlife reserve located in the **Western Ghats of Karnataka.**

➲ It is part of the **larger Bhadra Tiger Reserve,** which was declared in **1998**. The sanctuary is named after the **Bhadra River,** which flows through it.

➲ It's also known as **Muthodi Wildlife Sanctuary**, located in Shimoga and Chikmagalur districts.

➲ **Wildlife:** Home to over 250 bird species (many endemic), mammals, reptiles, and the Jagara Giant, the largest teak tree in Karnataka.

GREEN GRABBING

Context

As India aggressively pursues its renewable energy goals, a troubling phenomenon known as "green grabbing" has emerged.

About

➲ Green grabbing involves the **coercive acquisition of land** under the **guise of environmental conservation** or sustainable development.

➲ Like in Assam's Karbi Anglong region, fertile lands are **scarce due to hilly terrains**. The government's initiative to establish solar parks has led to the acquisition of these limited fertile lands, adversely affecting indigenous communities like the Karbi and Naga.

RUELLIA ELEGANS

Context

A recent study has raised concerns about the threat posed by Ruellia Elegans, to the native biodiversity of Assam.

About

➲ It is commonly known as the **Brazilian petunia, Christmas pride, and wild petunia,** is a flowering plant native to **wet tropical biomes.**

   ◆ The species derives its name from its elegant appearance.

➲ It is **native to Brazil** with bright **red trumpet shaped flowers.**

➲ It belongs to the **Acanthaceae sub-family** and is one of the four invasive Ruellia species in India, alongside **Ruellia ciliatiflora, Ruellia simplex, and Ruellia tuberosa.**

➲ **India has six native species of Ruellia:** Ruellia beddomei, Ruellia ciliata, Ruellia malabarica, Ruellia patula, Ruellia sibua, and Ruellia sivarajanii.
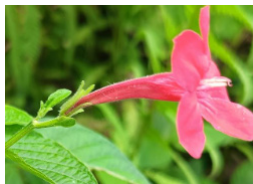
Invasive Species:

➲ Invasive plant species are **non-native plants** that spread aggressively and outcompete local flora for essential resources such as sunlight, water, and nutrients.

➲ **They disrupt ecosystems by;**
   ◆ **Altering biodiversity** and displacing **native species.**
   ◆ Contributing to the **decline or extinction of endemic plants**.

CARACAL

Context

Rajasthan's Forest Minister shared a photo to celebrate the "first photographic record" of a caracal in Mukundra Hills Tiger Reserve.

About

Appearance	Nocturnal cat species known for distinct, pointy ears. The name 'Caracal' comes from the Turkish word **karakulak**, meaning 'black ears'.
Distribution	Native to Africa, Middle East, Central Asia, and South Asia.
In India	Population has sharply declined, with an estimated fewer than 50 in India, primarily found in Rajasthan and Gujarat.
Conservation Status	Critically endangered in India, added to the list in 2021 by the National Board for Wildlife and the Ministry of Environment, Forest and Climate Change.
Threats	Habitat loss and hunting by humans.
IUCN Status	Least Concern (LC).
CITES Protection	Protected under CITES, in appendices I and II.

Mukundra Hills Tiger Reserve

➲ **Location:** It is the 3rd tiger reserve in Rajasthan, after Ranthambore & Sariska Tiger Reserves.
   ◆ Part of the Vindhya range, extending from the Chambal River to Kalisindh.
   ◆ **It was declared a tiger reserve in 2013.**

➲ **Area Includes:** Mukundra National Park, Dara Sanctuary, Jawahar Sagar Sanctuary, and part of Chambal Sanctuary (from Garadia Mahadev to Jawahar Sagar Dam).

GUM ARABIC (ACACIA GUM)

Context

Smuggling of Arabic gum from war-torn Sudan, which produces 80% of the world's supply, is disrupting global supply chains.

About

- It is a natural exudate obtained from **Acacia trees**, primarily **Acacia senegal and Acacia seyal**.
- It is a complex polysaccharide with excellent **emulsifying, stabilizing, and thickening properties.**
- **Uses:**
  - **Food Industry:** Acts as an emulsifier, stabilizer, and thickener in soft drinks, baked goods, and confectionery.
  - **Cosmetics:** Used in skincare products and lipsticks for texture and stability.
  - **Pharmaceuticals:** Found in syrups, capsules, and tablet coatings.

BUTTERFLIES HAVE BEEN DECLINING THE LAST 20 YEARS

Context

A new study has found that butterfly populations in the U.S. have declined by 22% since 2000, due to insecticides, climate change, and habitat loss.

About Butterflies:

- Butterflies belong to the superfamily Papilionoidea within the insect order Lepidoptera, which also includes moths and skippers.
- They are found worldwide.
- **Butterflies are cold blooded** which means that they cannot regulate their body temperature.
- The butterfly life cycle consists of **four stages**: egg, larva (caterpillar), pupa (chrysalis), and adult (imago).
- **Importance of Butterflies**
  - They are **bio indicators of a healthy environment and ecosystem** - highly sensitive to changes in climate, pollution levels and harmful chemicals in the air.
  - They are an **important part of the food chain** – butterflies are food for birds, bats and other insectivorous animals and parasites
  - They are **excellent pollinators** after bees, wasps and flies – without these wonderful insects, we would have a lot fewer plants
- **Threats:** Human encroachment, deforestation, and climate fluctuations threaten butterfly habitats.

Additional Information

- **Monarch butterflies** are known for their **remarkable migratory journey,** traveling between 1,200 and 2,800 miles from the northeast U.S. and southeast Canada to central Mexico.
- The **Marbled Map butterfly** is endemic to the **Eastern Ghats and Odisha.**
- The **Common Birdwing**, listed in CITES, is often found in wildlife trade.
- The Nymphalidae family was the most dominant, comprising 31.58% of the species, likely due to the availability of suitable host plants and favorable ecological conditions.

AFRICA'S GIANT GOLIATH BEETLE

Context

Recent research has highlighted that two species of Goliath beetles, Goliathus regius and Goliathus cacicus, are facing the threat of extinction.

About

- **The Goliath beetles (genus Goliathus)** are among the **largest insects** in the world, with five known species.
- They can grow up to **110 mm** long. Males possess **Y-shaped horns**, whereas females lack horns.
- They are native to the rainforests of **West and Central Africa**.
- Larvae (grubs) are **omnivorous** and consume both plant debris and animal matter, aiding in nutrient recycling in forests.

FIRST COMPREHENSIVE ESTIMATE OF RIVER DOLPHINS IN INDIA

Context

India's first comprehensive survey of river dolphins, conducted under Project Dolphin (launched in 2020), estimates a population of 6,327 dolphins, primarily in the Ganga, Brahmaputra, and Indus river basins.

Key Findings

- India is home to **two species of freshwater dolphins:** Ganges (Platanista gangetica) and Indus (Platanista minor).
- There are 6,324 Ganges river dolphins, and three Indus river dolphins.
- Highest populations **recorded in Uttar Pradesh, followed by Bihar, West Bengal, and Assam.**

COMPARISON BETWEEN INDUS & GANGES RIVER DOLPHIN

Feature	Ganges River Dolphin (Platanista Gangetica)	Indus River Dolphin (Platanista minor)
Common Name	Susu	Bhulan
Habitat	Ganga and Brahmaputra river basins in India, Nepal, and Bangladesh	Indus River system in Pakistan; small population in Beas River, India
Vision	Functionally blind; uses echolocation	Functionally blind; uses echolocation
Key Threats	Habitat destruction, pollution, hunting	Habitat fragmentation, restricted range, population isolation
Wildlife Protection Act (India)	Schedule I	Schedule I
CITES Status	Appendix I	Appendix I
IUCN Red List Status	Endangered	Endangered
National Recognition (India)	National Aquatic Animal (2009)	–

INDIAN LONG-BILLED VULTURE

Context

Recently, an Indian long-billed vulture was spotted with its chick at Ramadevara Betta in Karnataka, India's only vulture sanctuary.

About Indian Long-billed Vulture (Gyps Indicus)

- It is a medium-sized bird with pale brown body feathers, and a semi-bald head.
- Its **long bill and broad wings** are distinctive features.
- It primarily inhabits **cliffs, hilly crags, and open landscapes** in central and southern India. Vultures are **nature's most efficient scavengers**, and play a crucial role in **preventing the spread of diseases** by efficiently disposing of animal remains.

Concerns

- **Indian long-billed vulture** has experienced a **population decline of over 97% since the 1990s,** primarily because of **poisoning from the veterinary drug diclofenac**, associated with fatal kidney failure.
- **Declining vulture population** has led to an increase in feral dogs and other scavengers, which can **spread diseases like rabies and anthrax.**

BRING BACK THE VULTURES

WHAT IF THE VULTURES ARE GONE ?

Nine species of vultures are found in India, most of them threatened. They are the most effective scavengers, and play a vital role in keeping the environment healthy and stopping the spread of diseases from carcass by feeding on it quickly and efficiently. No other scavenger can replace this service.

With very low populations of vultures, free-ranging dog populations have also increased. Dogs are carriers of rabies and other diseases which can affect humans and animals.

WHAT CAN BE DONE TO SAVE VULTURES?

- Stop the use of drugs toxic to vultures.
- Prevent poisoning of animals and carcasses.
- Infrastructure, including for electricity, should be sensitively sited.
- Do not disturb their roosting and nesting sites.
- Gain knowledge about vulture species.

Red-headed Vulture CR

Egyptian Vulture EN

Slender-billed Vulture CR

White-rumped Vulture CR

Himalayan Griffon NT

Eurasian Griffon LC

Indian Long-billed Vulture CR

Cinereous Vulture NT

Bearded Vulture NT

CR Critically Endangered | EN Endangered | NT Near Threatened | LC Least Concern

GEORGE VI ICE SHELF

> **Context**
>
> *Scientists under the Challenger 150 programme uncovered thriving deep-sea ecosystems beneath the George VI Ice Shelf in Antarctica.*

About George VI Ice Shelf

- **Location:** Situated in **George VI Sound**, separating **Alexander Island** from **Palmer Land**, adjacent to the **Bellingshausen Sea** in the Southern Ocean.
- **Governance:** Falls under the **Antarctic Treaty System**, with active research led by countries like the **UK and USA.**
- **Geographical Features:**
  - **Length:** Extends from **Ronne Entrance** to **Niznik Island.**
  - Rich in **floating ice shelves**, **subglacial ecosystems**, and **complex underwater geography.**

Challenger 150 Programme:

- It is part of the **UN Decade of Ocean Science for Sustainable Development (2021–2030).**
- It underscores the role of **multilateral scientific collaboration** in exploring and conserving the deep ocean.
- Endorsed by **UNESCO/IOC**, the initiative aligns with global sustainable development goals, especially **SDG 14 (Life Below Water).**

Key Findings under Challenger 150 Programme

- **Flourishing Deep-Sea Ecosystems:**
  - Deep Sea Ecosystem means marine ecosystems occurring below **200 metres**, extending into the **aphotic zone**—which comprises **90% of Earth's marine habitat.**
  - Discovery of **large corals**, **sponges**, **icefish**, and **giant sea spiders.**
  - Ecosystems survived despite being **cut off from sunlight and surface nutrients for centuries.**
  - The presence of complex life in absence of known nutrient sources suggests **unknown nutrient transport pathways**, opening new avenues for research.
- **New Species Identified:**
  - Giant phantom jellyfish
  - Octopi, vase-shaped sponges (possibly centuries old), and sea spiders.

Significance of the Discovery

- **Scientific Relevance:** Overshadow previous assumptions that extreme, nutrient-deprived environments cannot support complex life. Opens new frontiers in **marine biology, ecology, and geosciences.**
- **Climate Change Insights:** As polar ice shelves melt due to global warming, these ecosystems may undergo dramatic shifts.
  - Studying them helps understand **ecosystem resilience** and **predict environmental responses** to climate change.
- **Marine Conservation Imperative:** Emphasizes the need for **international frameworks** to safeguard fragile marine biodiversity, particularly in the **Southern Ocean.**

> ### Bedmap3
>
> - It is the most comprehensive map of Antarctica's landscape beneath its ice sheet
> - It extends the previous Bedmap2 dataset.
> - **Coverage of Gaps:** It fills major gaps in knowledge, including information on mountain ranges, the deep interior of East Antarctica, and the coastlines of West Antarctica and the Antarctic Peninsula.

AVALANCHE

> **Context**
>
> *An Avalanche has struck the Border Roads Organisation (BRO) project at Mana in Uttarakhand's Chamoli.*

About

- **Definition:** A rapid descent of snow, rock, ice, and other materials down a mountainside. Snow avalanches, the most common type, can travel faster than **320 km/h (200 mph).**
- **Causes:** Avalanches occur when an unstable snowpack breaks apart, often due to weak bonds between layers, such as ice, fresh snow, or spring thaw. Added weight or vibration can trigger the slide.
- **Types of Avalanches:**
  - **Sluffs:** Small, less dangerous avalanches of dry, powdery snow.
  - **Slabs:** More dangerous, large snow masses where the weak layer is buried deeper.
- **Factors Influencing Avalanches:** Storms, temperature, wind, slope steepness, terrain, and snowpack conditions all influence the likelihood and type of avalanche.
  - Most avalanches are triggered by vibrations from people or external forces, such as earthquakes.

Implications of Avalanches

- **Loss of Lives and Livelihoods:** Avalanches can cause sudden deaths and disrupt local economies, especially in mountainous regions.
- **Infrastructure Damage:** Roads, bridges, and military installations in high-altitude areas can be severely damaged.
- **Hindrance to Rescue and Relief:** Harsh weather and blocked access routes delay emergency response efforts.
- **Environmental Impact:** Avalanches can alter local ecosystems, destroy vegetation, and trigger landslides or floods.

DIFFERENCE BETWEEN AVALANCHE AND LANDSLIDE		
Aspect	**Avalanche**	**Landslide**
Definition	Rapid flow of snow, ice, and debris down a slope.	Mass of rock, soil, or debris sliding down a hillside.
Speed	Can reach speeds up to 320 km/h (200 mph).	Varies, typically slower than avalanches.
Causes	Weak snowpack layers, weather, or human activity.	Heavy rainfall, earthquakes, or human activity.
Location	Snow-covered mountains or slopes.	Steep slopes in various terrains (forests, urban areas, hills).

WALLACE LINE

Context

The Wallace Line is a crucial concept in biogeography, explaining the striking differences in species distribution across continents.

About

- The Wallace Line, first identified by British naturalist **Alfred Russel Wallace** in the late 19th century, is an **imaginary boundary** that separates the distinct biogeographic regions of **Asia and Wallacea** (a transitional zone between Asia and Australia).
- On the **western side** of the line, species are primarily of **Asiatic origin,** whereas on the **eastern side**, species exhibit **characteristics of both Asian and Australian** descent.
  - This stark contrast in fauna occurs despite the relatively short distances around (35 kilometers) between these regions.

Geographic extent of the Wallace Line

- It runs through the **Lombok Strait** between Bali and Lombok.
- It runs through the **Makassar Strait** between Borneo and Sulawesi.
- It extends eastward, south of **Mindanao Island**, into the **Philippine Sea.**

Findings on Sulawesi Island

- In 1876, it was noted that the island had affinities with **Africa, India, Java, Maluku Islands, New Guinea, and the Philippines.**
  - Also there is a unique mix of species from both **Asia and Australia.**
- **Examples of Sulawesi's Unique Fauna**
  - **Asian species:** Tarsiers (family Tarsiidae), Lowland anoa (Bubalus depressicornis) and Mountain anoa (Bubalus quarlesi).
  - **Australian species:** Dwarf cuscus (Strigocuscus celebensis).

PLACES IN NEWS

Chagos Archipelago
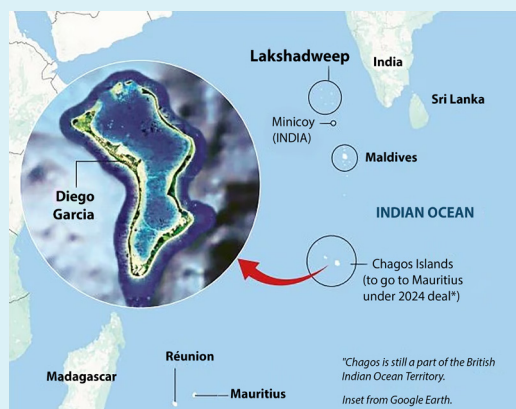
India has supported Mauritius' claims of sovereignty over Chagos Archipelago.

About Chagos Archipelago

➲ The **Chagos Archipelago** is a group of islands located about **500 km south of the Maldives** in the **Indian Ocean Region (IOR)**.

➲ The islands were **uninhabited until the 18th century**, after which they were **colonized by the French**.

➲ In **1814**, under the **Treaty of Paris**, the **French ceded the Chagos islands to the British**.

➲ In **1965**, the **United Kingdom created the British Indian Ocean Territory (BIOT)**, designating Chagos as its central part.

➲ Some islands under BIOT were later **transferred to Seychelles in 1976**.

➲ The **UK separated Chagos from Mauritius in 1965**, just **three years before Mauritius gained independence** in 1968.

➲ Its largest **atoll – Diego Garcia –** hosts a major **US military base.**

Zambia

India has secured a 9,000-sq-km exploration block to explore copper and cobalt in Zambia. Zambia is the 7th largest copper producer globally.

About:

➲ **Location**: Zambia is a **landlocked country** located in **south-central Africa**, situated on a **high plateau**.

➲ Bordering Countries: Democratic Republic of the Congo, Zimbabwe, Botswana,Tanzania Malawi, Mozambique, Angola and Namibia.

➲ **Geographical Features:**
  ◆ **Victoria Falls**, one of the world's largest waterfalls, is located on the **Zambezi River**, along the border with Zimbabwe.
  ◆ **Lake Kariba**, on the Zambezi River, is the **largest man-made reservoir in the world by volume**, formed by the construction of the **Kariba Dam**.

➲ **Economy:** Zambia's economy is **heavily reliant on mining**, especially the **extraction of copper**, which is a key export.

➲ **Capital City:** Lusaka.

Black Sea

Russia and Ukraine agreed to halt military strikes in the Black Sea and on energy sites during talks brokered by the United States.

About:

➲ The Black Sea is a **large inland body** of water located in **southeastern Europe, bordered by six countries:** Bulgaria, Romania, Ukraine, Russia, Georgia, and Turkey.

➲ It is connected to the **Mediterranean Sea through the Bosporus Strait**, **the Sea of Marmara, and the Dardanelles Strait.**

➲ **Bordering Countries:** Bulgaria, Romania, Ukraine, Russia, Georgia, Turkey.

➲ **Rivers:** Danube, Dniester, Dnieper, Don (via the Sea of Azov), Rioni, Southern Bug.

➲ **Major Sea Ports:** Constanta (Romania), Varna (Bulgaria), Burgas (Bulgaria), Odessa (Ukraine), Sevastopol (Crimea, disputed), Novorossiysk (Russia), Poti (Georgia), Batumi (Georgia), Samsun (Turkey).

ASTRA MK-III RENAMED 'GANDIVA'

Context

India's latest and most advanced beyond visual range (BVR) air-to-air missile, Astra MK-III, has been officially renamed Gandiva.

Key Features of the Missile:

- **Extended Range:** 340 km when targeting enemies at 20 km altitude. 190 km when engaging targets at 8 km altitude.
- **Advanced Propulsion System:**
  - Powered by a **dual-fuel ducted ramjet engine** (a **cutting-edge technology that utilizes atmospheric oxygen as an oxidizer**), ensuring sustained high-speed flight.
  - Launch speed between 0.8 to 2.2 Mach, capable of engaging targets moving at 2.0 to 3.6 Mach.
- **Enhanced Target Engagement Capabilities:** Can neutralize fighter jets, bombers, military transport aircraft.

EXERCISE DESERT HUNT 2025

Context

The Indian Air Force conducted Exercise Desert Hunt 2025, an integrated Tri-Service Special Forces exercise, at Air Force Station Jodhpur, Rajasthan.

About

- The exercise involved **Para (Special Forces)** of the Indian Army, **Marine Commandos (MARCOS)** of the Indian Navy, and **Garud (Special Forces)** of the Indian Air Force.
- It aimed to **enhance interoperability, coordination, and synergy** among the three Special Forces units for **swift and effective responses** to security challenges.
- **Key operations included:** airborne insertion, precision strikes, hostage rescue, counter-terrorism operations, combat free falls and urban warfare scenarios wherein the combat readiness of the forces was tested under realistic conditions.

EXERCISE KHANJAR-XII

Context

The 12th edition of Exercise Khanjar-XII is set to take place in Kyrgyzstan.

About

- It is a joint special forces exercise.
- It is held annually and conducted alternatively in both the countries.
- **Aim:** To exchange experiences and best practices in Counter Terrorism and Special Forces Operations in urban and mountainous high altitude terrain scenarios.

FOURTH CONFERENCE ON GLOBAL INTELLIGENCE

Context

The fourth conference of global intelligence and security chiefs, hosted by India's National Security Advisor (NSA).

About

- The conference was held for the first time in **2022.**
- The conference took place a day before the annual **Raisina Dialogue,**
  - **Raisina Dialogue:** India's flagship conference on "geopolitics and geo-strategy", organised by the **Ministry of External Affairs in collaboration with the Observer Research Foundation (ORF).**
- **Organized By:** India's external intelligence agency, RAW, and the National Security Council Secretariat (NSCS), reporting to NSA Mr. Doval.
- **Focus Areas:** Discussions covered counterterrorism, Indo-Pacific cooperation, global security, intelligence-sharing mechanisms, immigration and extradition, transnational crimes, narcotics, and terror funding.
- **Attendees:** Over 28 participants from around 20 countries, including the U.S., Canada, Australia, and Russia.

SIPRI REPORT (2020-24)

Context

According to the Sweden-based Stockholm International Peace Research Institute (SIPRI), Ukraine became the world's largest importer of major arms in the period 2020–24.

About

- **Top five arms importers:** Ukraine, India, Qatar, Saudi Arabia and Pakistan.

- These five countries accounted for **35 percent** of global arms imports.
- **Top five arms exporters:** The USA, France, Russia, China and Germany. These exporters contributed **72 percent** of total global arms exports.
- **The US increased** its share of global arms exports to **43 percent,** whereas **Russia's arms exports declined** by **64 percent.**
- **China** accounted for **5.9 percent** of global arms exports in 2020–24, a slight decline from its share in 2015–19.

Indian Scenario

- India was the world's **second largest** arms importer during 2020–24. However, its imports decreased by **9.3 percent** between 2015–19 and 2020–24.
- **The largest share** of Indian arms imports **(36 percent)** came from **Russia,** a significantly smaller share than in **2015–19 (55 percent)** and 2010–14 (**72 percent**).
  - India has contracted major military deals with France, including **36 Rafale jets & six Scorpene-class submarines.**

Stockholm International Peace Research Institute (SIPRI)

- SIPRI is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament. It is based in **Stockholm, Sweden.**
- **Established in 1966,** it provides data, analysis and recommendations to researchers, media and the interested public.

## ASHWINI RADAR

Context

The Ministry of Defence has signed a capital acquisition contract with Bharat Electronics Limited (BEL) for the procurement of the Low Level Transportable Radar (LLTR) 'Ashwini' for the Indian Air Force (IAF).

About

- It is an advanced electronically scanned phased array radar based on state-of-the-art solid-state technology.
- It is capable of tracking a wide range of aerial targets, from **high-speed fighter aircraft** to **slow-moving objects** like Unmanned Aerial Vehicles (UAVs) and helicopters.
- The radar has been **indigenously developed** by the **Defence Research and Development Organisation (DRDO)** in collaboration with **Bharat Electronics Limited (BEL)**.
- It features an **integrated Identification Friend or Foe (IFF) system** with **electronic scanning in azimuth and elevation**, enabling **4D surveillance**.

- Designed for **high mobility**, it is equipped with **advanced Electronic Counter-Countermeasures (ECCM)** for effective operation across **various terrains**.
- The radar system can **automatically detect and track** multiple airborne targets, ensuring enhanced surveillance and defense capabilities.

How Radar Works
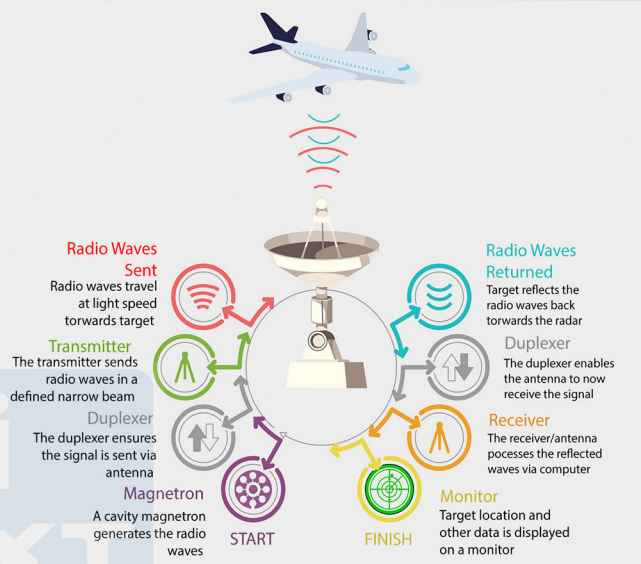
INS TAVASYA

Context

The Goa Shipyard Limited (GSL) launched Tavasya, the second frigate under Project 1135.6 Additional Follow-on Ships.

About

- **In 2016, India and Russia** signed an agreement for four additional **Krivak-class frigates,** with two imported and two built in India under technology transfer.
  - **The first frigate, Triput,** was launched in **2024**, with both ships set to be delivered to the Indian Navy by **2026 and 2027.**
- **Tavasya is the second** of the two follow-on **Krivak-class stealth frigates.**
  - 'Tavasya' named after **Bhima's mace,** symbolising naval strength
  - Designed to perform **surface, sub-surface, and air combat operations.**
- **Indigenous Contributions:** Triput and Tavasya feature indigenous equipment, weapons, and sensors.
- **End of License-Built Ships:** Tavasya marks the likely end of license-built warships in India, as the country is **moving towards designing and constructing its own warships.**

EXERCISE VARUNA 2025

Context

The 23rd edition of the annual naval 'Exercise VARUNA' between India and France has commenced in the Arabian Sea.

About

➲ It was started in **2001** to enhance **interoperability and operational synergy** between Navies of India & France.
➲ **VARUNA 2025** features a series of **drills and manoeuvres** involving underwater, surface, and air operations.

AIKEYME AND IOS SAGAR

Context

The Indian Navy is set to launch two maiden initiatives—AIKEYME and IOS Sagar—aimed at strengthening India's position as the 'Preferred Security Partner' and 'First Responder' in the Indian Ocean Region (IOR).

AIKEYME (Africa India Key Maritime Engagement)

➲ 'AIKEYME', which means 'Unity' in **Sanskrit**, is a large-scale multilateral maritime exercise with African nations.
➲ The first edition will be **co-hosted** by the **Indian Navy** and the Tanzania Peoples' Defence Force **(TPDF)**.
  ◆ It will take place **off the coast of Dar-es-Salaam, Tanzania**, over six days in mid-April 2025.

➲ Participating nations include **Comoros, Djibouti, Eritrea, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, and South Africa**, alongside the co-hosts.

About Indian Ocean Ship (IOS) Sagar

➲ As part of this initiative, the **Indian Naval Ship (INS Sunayna)** will be deployed to the **Southwest IOR** with a combined crew from **India** and **nine Friendly Foreign Countries (FFCs)**.
  ◆ Comoros, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Sri Lanka, and South Africa.

GOLDEN DOME

Context

The "Golden Dome" is an advanced missile defense system announced by U.S. President Donald Trump during his recent address to Congress.

About

➲ **Inspired by:** Israel's Iron Dome, which is effective against short-range rocket threats.
➲ **Objective:** To provide nationwide missile defense against:
  ◆ Ballistic Missiles
  ◆ Hypersonic Missiles
  ◆ Cruise Missiles
➲ **Components:** Space-based sensors for early threat detection.
  ◆ Advanced interceptors to neutralize missiles mid-flight.
  ◆ Multi-layered defense system integrating ground, naval, and space-based assets.

OTHER DEFENCE SYSTEMS OF THE WORLD				
Missile/System Name	Type	Maximum Range	Interception Altitude	Introduction Year
Prithvi Air Defence (India)	Exo-atmospheric Anti-ballistic Missile	300km- 2,000 km	50 km - 180 km	2006
Advanced Air Defence (India)	Endo-atmospheric Anti-ballistic Missile	150 km	15 km - 40 km	2007
Iron Dome (Israel)	Mobile all-weather air defense system	Up to 70 km	-	2011
S-400 (Russia)	Anti-aircraft weapon system	Up to 400 km	Up to 30 km	2007
THAAD (USA)	Anti-ballistic missile system	200 km	Up to 150 km	2008
Dongfeng 41 (China)	Intercontinental Ballistic Missile (ICBM)	12,000 - 15,000 km	-	2019

AMAZON UNVEILS 'OCELOT' QUANTUM COMPUTING PROTOTYPE CHIP

Context

Amazon Web Services (AWS) has unveiled 'Ocelot', its first prototype quantum computing chip with claims of reducing error correction costs by up to 90 per cent.

About Ocelot Chip

➲ The Ocelot chip features a **two-layer integrated silicon design**, with each microchip occupying roughly one square centimeter. Key components include:

  ◆ **Five data qubits (Cat qubits):** These store the quantum states necessary for computation.

  ◆ **Five buffer circuits:** Designed to stabilize the data qubits.

  ◆ **Four additional qubits:** Responsible for detecting errors in the data qubits.

  ◆ **Oscillators made from Tantalum:** This superconducting material enhances performance and stability.

About Quantum Error Correction

➲ Traditional computers operate on bits (0s and 1s), whereas **quantum computers use qubits**, which can exist in multiple states simultaneously due to quantum superposition.

➲ However, qubits are highly sensitive to external factors such as **heat, vibrations, and electromagnetic interference,** making them prone to errors.

➲ **Amazon's Cat qubits**, inspired by **Schrödinger's cat** thought experiment, help mitigate these errors intrinsically, significantly reducing the computational resources required for error correction.

ULTRA-CONSERVED ELEMENTS IN DNA

Context

Researchers have discovered ultra-conserved elements (UCEs) in the genome.

About

➲ UCEs are **DNA segments** that have **remained unchanged for over 80 million years** across species like humans, rats, mice, chickens, dogs, and fish.

➲ These elements are thought to have remained intact due to some biological constraint.

Function of UCEs

➲ They play a crucial role in **regulating protein production**.

➲ They do not code for proteins, but they influence gene expression by acting a**s "poison exons" within mRNA** (it is a type of single-stranded RNA involved in protein synthesis)

➲ In the **Tra2b gene**, the UCE helps prevent excessive production of the Tra2**β** protein by causing premature termination of protein synthesis.

➲ The **UCE in the Tra2b gene** is crucial for fertility, maintaining a delicate balance in protein production.

  ◆ Even a single change in the UCE could disrupt its function, explaining why it has been conserved over millions of years.

Research Breakthrough

➲ A study identified a **UCE in the mouse Tra2b gene** that plays a role in limiting protein production.

➲ Deleting this gene in mouse testes led to overproduction of the **Tra2β protein**, causing death of sperm-producing cells and infertility.

➲ Researchers used **Cre protein** to delete the UCE in the Tra2b gene in sperm-producing cells of mice.

DNA to Protein Conversion

➲ **DNA Structure**: Double-helix with four nitrogenous bases (Adenine (A) - Thymine (T) and Cytosine (C) - Guanine (G)).

➲ **Gene:** A small section of DNA that carries instructions for making a protein.

➲ **Transcription (DNA → mRNA):** DNA is copied into messenger RNA (mRNA).

  ◆ mRNA leaves the nucleus and goes to the ribosome.

➲ **Translation (mRNA → Protein):** Ribosome reads mRNA in codons (3-base sequences).

  ◆ Transfer RNA (tRNA) brings amino acids to build a protein.

  ◆ Stop codon signals the end of protein synthesis.

FERRIHYDRITE

Context

A study by NASA and ESA suggests that Mars' red color originates from ferrihydrite.

About

⮞ **Formation of Ferrihydrite:** Ferrihydrite requires cool water to form, indicating that Mars may have had liquid water in its past.

◆ Mars was thought to have turned red due to **slow oxidation in dry conditions over billions of years.**

Comparison of Martian Iron Oxides		
Iron Oxide Type	**Formation Process**	**Implications for Mars's History**
Haematite	Oxidation in dry conditions over billions of years	Mars rusted gradually, post-water era
Ferrihydrite	Rapid formation in cool water	Mars rusted much earlier during a wet period

⮞ **Implication for Habitability:** The presence of ferrihydrite implies that Mars could have been habitable in the past, with conditions that allowed liquid water.

HOW MARS TURNED RED

1. Iron on Mars's surface reacted with oxygen and water to create rust
2. The rust was washed into the rivers, lakes and seas that used to cover Mars
3. Over billions of years, rusty rock was broken down into dust
4. Wind blew the red dust all over the planet's surface

Mars four billion years ago
Grey, rocky and wet

Mars today
Red, dusty and dry

Significance of the Study

⮞ **Evidence of Water:** The presence of ferrihydrite indicates prolonged water activity.

⮞ **Past Habitability:** Suggests an environment more suitable for sustaining life.

⮞ **Climate Insights:** Helps reconstruct Mars' transition from a wet to a dry planet.

About Mars

⮞ Mars is the fourth planet from the sun and has a distinct rusty red appearance and two unusual moons.

◆ **Phobos:** ~6000 km above Mars; Deimos: ~20 000 km above Mars.

◆ It has a very thin atmosphere, but dusty.

⮞ **Gravity:** 3.711 m/s2 (about one third of Earth's gravity)

◆ Mars also has the largest volcanoes in the solar system, **Olympus Mons** being one of them.

⮞ **Atmosphere:** 95.32% carbon dioxide, 2.7% nitrogen, 1.6% argon, 0.13% oxygen.
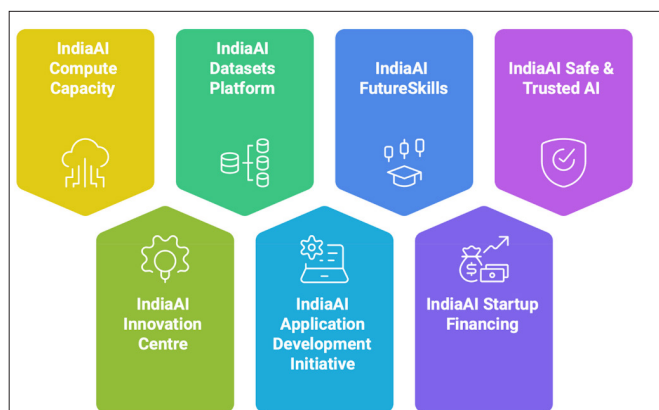
MEITY LAUNCHED AIKOSHA

Context

The Union Minister for Electronics & Information Technology unveiled a series of AI-driven initiatives under the IndiaAI Mission, marking a major step in strengthening India's artificial intelligence ecosystem.

About AIkosha

⮞ **AIKosha (IndiaAI Datasets Platform):** A secured AI repository designed to facilitate AI innovation by providing:

◆ 300+ datasets and 80+ AI models for diverse applications.

◆ An AI sandbox environment with an integrated development environment (IDE), tools, and tutorials.

◆ The **datasets on AI Kosha** include submissions from various sources, such as *2011 Census data, satellite imagery captured by Indian satellites, Open Governance Data platform, health data, and meteorological and pollution data.*

IndiaAI Mission

⮞ **About:** Launched in March 2024, it is a comprehensive initiative aimed at fostering AI research, development, and innovation in India.

⮞ **Funding:** 5-year public-private partnership model.

⮞ **Implementing Agency:** 'IndiaAI' Independent Business Division under Digital India Corporation.

⮞ **Objectives:** Strengthening public-private partnerships to accelerate AI research & development.

◆ Deployment of over 10,000 GPUs to enable high-performance AI computing.

◆ Establishing AI supercomputing facilities like AIRAWAT at C-DAC, Pune.

◆ Ensuring ethical AI practices, data transparency, and accessibility.

⮞ **Over the next five years, IndiaAI Mission will support the initiatives like:**

IndiaAI Compute Capacity

IndiaAI Datasets Platform

IndiaAI FutureSkills

IndiaAI Safe & Trusted AI

IndiaAI Innovation Centre

IndiaAI Application Development Initiative

IndiaAI Startup Financing

SOLAR MAXIMUM

Context

NASA has launched the Polarimeter to Unify the Corona and Heliosphere (PUNCH) Mission, aligning with the solar maximum phase of the Sun's cycle.

About

➲ The Sun, like a bar magnet, possesses a magnetic field with north and south poles.

➲ This magnetic field is generated by the movement of electrically charged particles within the Sun.

➲ Approximately every **11 years,** the **Sun's magnetic field completely flips**, switching its north and south poles—a phenomenon known as the **solar cycle**.

Meaning of Solar Maximum

➲ Solar maximum is the peak **phase of the Sun's 11-year cycle**, characterized by heightened solar activity.

➲ During this period, the Sun emits more **energy, radiation, and light** and experiences an increased number of **sunspots.**

◆ The transition occurs when the Sun's magnetic field undergoes a complete flip.

➲ **Duration:** Solar Maximum lasts between one and two years. The time between two solar maxima can vary from 9 to 13 years.

Impacts of Solar Maximum on Earth

➲ **Solar Flares and Coronal Mass Ejections (CMEs):**

◆ The release of magnetic energy leads to massive solar storms that send bursts of radiation and particles into space.

➲ **Damage to Power Grids:**

◆ Intense geomagnetic storms can disrupt electrical infrastructure, leading to power outages.

➲ **Satellite Malfunctions:**

◆ Increased solar radiation affects satellite operations, potentially causing communication and navigation failures.

PUNCH Mission

➲ PUNCH is a NASA Small Explorer (SMEX) mission to better understand how the mass and energy of the Sun's corona become the solar wind that fills the solar system.

➲ The mission consists of a constellation of four small satellites in Sun-synchronous, low Earth orbit that together will produce deep-field, continuous, 3D images of the solar corona.

VITILIGO DISEASE

Context

A study from Northwestern University discovered that a natural compound derived from gut-friendly bacteria may slow vitiligo progression.

About

➲ **Vitiligo** is a **chronic autoimmune disorder** where the body's immune system attacks pigment-producing cells (melanocytes), **causing white patches on the skin.**

◆ It can occur anywhere on the body, including the face, hands, and other exposed areas.

➲ **There are 2 main types of vitiligo:**

◆ **Non-segmental vitiligo** - Often appear on both sides of your body as symmetrical white patches.

◆ **Segmental vitiligo** - Only affects one area of your body.

◆ **In rare cases,** it's possible for vitiligo to affect the whole body.

◆ This is known as **universal vitiligo.**

➲ **The prevalence of vitiligo in India** has been invariably reported between 0.25% and 4%, and up to 8.8% in Gujarat and Rajasthan, as per a paper in the Indian Dermatology Online Journal.

➲ **Treatment options include** creams, light therapy, and sometimes surgery to help manage symptoms.

HANTAVIRUS

Context

According to the U.S. Centers for Disease Control and Prevention (CDC), hantaviruses are a family of viruses that can cause severe, potentially fatal illnesses.

About

➲ A family of viruses that cause **severe respiratory and renal illnesses.**

➲ It causes **Hantavirus Pulmonary Syndrome (HPS)**, which starts with flu-like symptoms such as fever, chills, and muscle aches. In severe cases, it leads to respiratory distress, fluid buildup in the lungs, and can be fatal.

➲ **Occurrence**

◆ Carried by rodents (deer mice, rice rats, white-footed mice, cotton rats).

◆ Transmission methods: Inhalation of virus particles from rodent droppings, or saliva. Touching contaminated materials and then the eyes, nose, or mouth.

➲ **Treatment & Prevention:** No specific antiviral treatment or cure.

# HYDROGEN-POWERED FUEL CELLS

Context

Recently the hydrogen-powered fuel cells have been successfully demonstrated as a reliable backup power solution for telecom towers.

Hydrogen Fuel Cells

➲ Hydrogen fuel cells produce electricity by combining **hydrogen and oxygen** atoms.

➲ A fuel cell consists of an **anode** (negative electrode) and **cathode** (positive electrode) sandwiched around an electrolyte.
  ◆ Hydrogen is fed to the anode and air is fed to the cathode.

Working of Fuel Cell

➲ **At the anode**, a catalyst separates the hydrogen molecules into protons and electrons and both **subatomic particles** take different paths to the cathode.

➲ The electrons go through an **external circuit**, creating a **flow of electricity** that can be used to power electric motors.

➲ **The protons**, on the other hand, move to the cathode through the **electrolyte.**
  ◆ Once there, they unite with oxygen and electrons to produce water and heat.

Heat -e -e Heat

Hydrogen in → Oxygen in

membrane

anode cathode

Water out

FUEL CELL
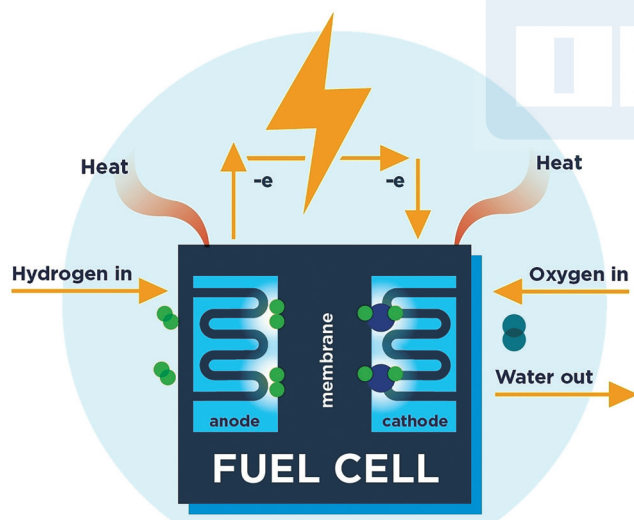
Hydrogen

➲ Hydrogen is the chemical element with the **symbol H** and **atomic number 1.**

➲ Hydrogen is the **lightest element** and the most abundant chemical substance in the universe, **constituting roughly 75%** of all normal matter.

➲ It is colorless, odorless, tasteless, non-toxic, and highly combustible gas.

BIREFRINGENCE

Context

A study reveals that Birefringent materials are used in LCD screens, medical microscopes, optical switches, waveplates, frequency converters, and high-power lasers.

About Birefringence (Aka Double Refraction)

➲ It is an optical phenomenon where a material splits a single light ray into two distinct rays, each traveling at different speeds and refracting in different directions.

➲ It arises due to the anisotropic nature of certain materials, meaning their optical properties vary depending on the direction of light propagation.

Science Behind Birefringence

➲ Birefringence occurs in materials that **lack isotropy,** such as **calcite, quartz, and certain polymers.** When unpolarized light enters a birefringent material, it splits into two rays:
  ◆ **Ordinary ray (o-ray):** It follows the standard laws of refraction; and,
  ◆ **Extraordinary ray (e-ray):** It deviates due to the material's directional dependence on refractive indices.

Types of Birefringence

➲ **Intrinsic Birefringence:** Found in materials with non-cubic crystal structures, such as calcite and quartz.

➲ **Stress-Induced Birefringence:** Occurs in isotropic materials like glass or plastics when subjected to mechanical stress.

➲ **Electric Field-Induced Birefringence:** Observed when an external electric field alters the optical properties of a material.

Applications of Birefringence

➲ **Optics and Photonics:** Used in polarizing filters, wave plates, and optical fibers.

➲ **Material Science:** Helps in stress analysis of transparent materials.

➲ **Biology:** Assists in studying the structural properties of biological specimens under polarized light microscopy.

MILLER-UREY HYPOTHESIS

Context

According to a new study, the process of Life could have been kicked off simply with crashing waterfalls and breaking waves that would have thrown up mists of water.

Findings of New Study:

➲ A recent study led by Stanford chemist Richard Zare proposed that **"microlightning" (tiny sparks from water droplets)** could generate organic compounds without external electricity.

⮕ The study found that water sprays interacting with gases like **nitrogen, methane, carbon dioxide, and ammonia** could produce organic molecules such as hydrogen cyanide, glycine, and uracil.

⮕ This suggests that crashing waves or waterfalls, rather than lightning, may have played a key role in the origin of life on Earth.

About the Miller-Urey hypothesis:

⮕ The Miller-Urey hypothesis suggests that organic molecules necessary for life could have formed on early Earth through chemical reactions triggered by lightning.

⮕ In **1952, Stanley Miller** and **Harold Urey** conducted an experiment simulating early Earth conditions, demonstrating that amino acids could form when electricity interacted with water and inorganic gases (methane, ammonia, and hydrogen).

⮕ The experiment was a landmark discovery, offering a possible explanation for the origin of life.

⮕ **Later studies questioned the hypothesis,** arguing that real lightning strikes were too infrequent and would mostly disperse organic compounds in the ocean.

ARTIFICIAL INTELLIGENCE (AI) WASHING

Context

With the rapid proliferation of Artificial Intelligence, several companies are misrepresenting their products as AI-powered to gain a competitive edge and attract investors — a deceptive practice termed as 'AI washing'.

About

⮕ AI washing is a **term derived from greenwashing,** where companies exaggerate their environmental friendliness to appeal to customers.

⮕ Similarly, businesses that claim to have integrated AI into their products, when they're **actually using less sophisticated technology,** can be accused of AI washing.

⮕ When it comes to AI washing, there are several types.

◆ Some companies claim to use AI when they're actually using less-sophisticated computing, while others overstate the efficacy of their AI over existing techniques, or suggest that their AI solutions are fully operational when they are not.

⮕ **Concerns:** AI washing can have concerning impacts for businesses, from overpaying for technology and services to failing to meet operational objectives the AI was expected to help them achieve.

◆ For investors it can make it harder to identify genuinely innovative companies.

MICROPROCESSORS VIKRAM AND KALPANA

Context

The Indian Space Research Organisation (ISRO) and the Semiconductor Laboratory (SCL) in Chandigarh have jointly developed two cutting-edge 32-bit microprocessors, Vikram 3201 and Kalpana 3201.

About

⮕ They are optimised **for efficiency and performance,** specifically designed for **space applications.**

⮕ **Vikram 3201** is **India's first fully indigenous 32-bit microprocessor** qualified for use in the **harsh conditions** of launch vehicles and it can **process 32 bits of data at a time.**

◆ It supports **floating-point computations** and offers **high-level language compatibility.**

⮕ **Kalpana 3201** is also a 32-bit SPARC V8 RISC microprocessor based on the IEEE 1754 Instruction Set Architecture.

◆ It is designed to be **compatible with open-source software toolsets** and has been tested with flight software, making it **versatile for various applications.**

NASA'S ASTRONAUTS STRANDED IN SPACE FOR 9 MONTHS RETURNED TO EARTH

Context

NASA astronauts Sunita Williams and Butch Wilmore have finally returned to Earth using Elon Musk's SpaceX Dragon capsule after a prolonged nine-month stay aboard the International Space Station (ISS).

About

⮕ **Starliner Spacecraft:**

◆ Developed by **Boeing** in collaboration with **NASA's Commercial Crew Program (CCP)** to transport astronauts to and from **low Earth orbit (LEO)**.

◆ **In 2024**, Boeing's **Starliner** carried **Williams and Wilmore** to the **International Space Station (ISS)**.

◆ Their return was delayed due to **propulsion issues**.

⮕ **SpaceX's Crew Dragon:**

◆ **Crew Dragon** is one of the **two variants** of **SpaceX's Dragon 2 spacecraft**, featuring a **reusable capsule** that launches atop a **Falcon 9 rocket**.

◆ Developed under **NASA's CCP**, it is primarily used to **transport astronauts to the ISS**.

◆ The other variant, **Cargo Dragon**, is designed for **cargo transport** to the ISS.

- **NASA's SpaceX Crew-9 mission** brought **Williams and Wilmore** back from the ISS aboard the **Crew Dragon spacecraft named Freedom**.

Sunita Williams and Wilmore

- **Sunita Williams** is the **current commander of the ISS** and a retired United States Navy officer, **joined NASA in 1998.**
- Over her career, she has **spent 322 days in space** and completed nine spacewalks.
  - She previously held the record for the most spacewalks by a female astronaut, **until 2017** when the title went to **Peggy Whitson,** who completed 10.
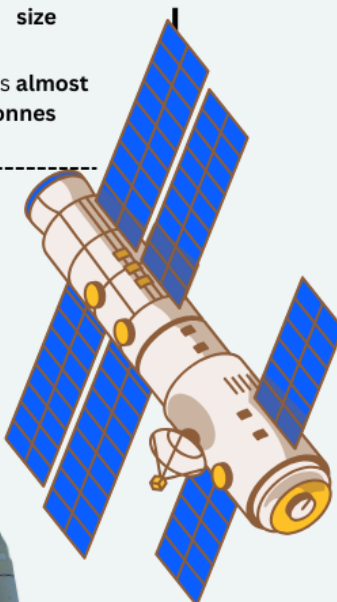- **Wilmore** first flew to space in **2009** on board the Space Shuttle Atlantis. Before the Boeing Starliner mission, he had logged **178 days in space.**
  - He has served as a flight engineer and commander on previous ISS missions, conducting research in space.

International Space Station

Largest modular space station in low Earth orbit also the largest human made structure in space

Launched on
20 November, 1988 from Kazakhstan

Mission life
It is expected to **operate till 2030.**

Orbit
It orbits LEO of earth at an average **altitude of 400 km** and **circles the globe every 90-93 minutes**

size
Weighs **almost 450 tonnes**

Agencies involved
- **USA-** NASA
- **EUROPE -**ESA
- **JAPAN -** JAXA
- **CANADA-** CSA
- **RUSSIA-** ROSCOSMOS

Components
Station is divided into two sections:
The Russian Orbital Segment (ROS), operated by Russia.
The United States Orbital Segment (USOS), run by the United States and other countries.

Significance
It serves as a **microgravity and space environment research laboratory**
More than 3,000 experiments have been conducted aboard ISS.

India's mission
India plans **to have own space station by 2035** which would weigh 20 tonnes.
Would orbit an altitude of 400 km above earth, where astronauts could stay for 15–20 days.
NASA and ISRO to launch a joint mission to ISS in 2024.

Notable success
Medical discovery– Advancements in osteoporosis treatments and understanding muscle atrophy.
Dark matter– Alpha Magnetic Spectrometer (AMS), which is intended to detect dark matter

EXPANSION OF INDIA'S SOCIAL SECURITY NET

Context

Recently, the Union Labour Minister highlighted that India has made remarkable strides in expanding its social security net, ensuring that a larger segment of the population benefits from welfare programs.

About Social Security

- **As per the International Labour Organisation:** Social security is society's protection through public measures against economic and social distress caused by loss or reduction of income due to sickness, maternity, employment injury, unemployment, disability, old age, or death.
- **The legal framework governing social security includes:**
  - The Employees' Provident Funds and Miscellaneous Provisions Act, 1952;
  - The Employees' State Insurance Act, 1948;
  - The Maternity Benefit Act, 1961;
  - The Unorganized Workers' Social Security Act, 2008;
  - The Code on Social Security, 2020.
- These laws and policies cover organized and unorganized sector workers, providing them with financial security and welfare benefits.

Additional Information

- Social protection is a recognized **human right**, essential for achieving the Sustainable Development Goals (SDGs).
  - **Goal 1 of the SDGs** aims **to end poverty by 2030** through national social protection systems, ensuring the coverage of vulnerable groups.
- **Article 22** of the **Universal Declaration of Human Rights** emphasizes **social security as a fundamental right**, which is reaffirmed in the **Social Protection Floors Recommendation** by the **ILO.**

Key Social Security Schemes in India

- **Pension and Provident Fund Schemes:**
  - **Employees' Provident Fund (EPF):** Managed by the EPFO under the Ministry of Labour and Employment, EPF is a **mandatory savings scheme** for employees in organizations with 20 or more workers.
  - Both employer and employee contribute 12% of the employee's salary towards this fund.

- **National Pension System (NPS):**
  - A voluntary retirement scheme regulated by the Pension Fund Regulatory and Development Authority (PFRDA).
  - Available to both public and private sector employees.
  - Provides tax benefits under Section 80CCD of the Income Tax Act.
- **Social Security for Unorganized Workers:**
  - **Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM):**
    - A pension scheme for unorganized sector workers earning less than ₹15,000 per month.
    - Requires a small monthly contribution (₹55 - ₹200), with a matching contribution from the government.
  - **Pradhan Mantri Kisan Maandhan Yojana (PM-KMY):** A pension scheme for small and marginal farmers aged 18-40 years.
  - **Building and Other Construction Workers' Welfare Scheme (BOCW):** Provides health, education, and insurance benefits to construction workers.
  - **Atal Pension Yojana (APY):** A guaranteed pension scheme for low-income workers, encouraging financial security in old age.
  - **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY):** Life insurance coverage of ₹2 lakh for individuals aged 18-50 at an annual premium of ₹436.
  - **Pradhan Mantri Suraksha Bima Yojana (PMSBY):** An accident insurance scheme covering ₹2 lakh for accidental death and disability.
- **Health and Insurance Schemes:**
  - **Employees' State Insurance Scheme (ESI):** Provides medical and disability benefits to employees earning up to ₹21,000 per month.
    - Covers expenses related to sickness, maternity, disablement, and death due to employment injury.
  - **Rashtriya Swasthya Bima Yojana (RSBY):** A government-funded health insurance scheme for BPL (Below Poverty Line) families.
  - **Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (PM-JAY):** The world's largest health assurance scheme providing free medical coverage of up to ₹5 lakh per family per year for economically disadvantaged groups.
- **Maternity and Disability Benefits:**
  - **Maternity Benefit Act, 1961:** Provides paid maternity leave of 26 weeks for women working in establishments with 10 or more employees.

- **Indira Gandhi National Disability Pension Scheme (IGNDPS):** Provides financial assistance of ₹300 - ₹500 per month to disabled individuals below the poverty line.
➲ **Employment and Labor Welfare:**
  - **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA):** Guarantees 100 days of wage employment to rural households, strengthening income security.
  - **e-Shram Portal:** A national database for unorganized workers, enabling targeted delivery of social security benefits.

Recent Expansions in Social Security

➲ **Extending Benefits to Gig and Platform Workers:** With the rise of the gig economy, the government has proposed bringing gig workers (such as food delivery agents and cab drivers) under the social security umbrella through platforms like e-Shram and the Social Security Code.
➲ **Digital and Financial Inclusion:** The **Jan Dhan-Aadhaar-Mobile (JAM) Trinity** has strengthened the delivery of welfare benefits, ensuring Direct Benefit Transfers (DBT) to beneficiaries, reducing leakages, and improving transparency.
➲ **Ration Card Portability under 'One Nation, One Ration Card' (ONORC):** It enables migrant workers to access subsidized food grains anywhere in India.
➲ **Strengthening Healthcare and Insurance for Informal Workers:** The government has been pushing for the inclusion of informal workers in health schemes, ensuring access to PM-JAY and ESIC facilities.

SC SETS UP TASK FORCE TO ADDRESS STUDENT SUICIDES

Context

The Supreme Court has set up a national task force to address students' mental health concerns and prevent suicides in higher educational institutions.

About

➲ The Supreme Court noted that student suicides in higher educational institutions, including IITs, have increased, **surpassing the number of farmer suicides due to agrarian distress.**
➲ The recurring incidents highlight the **institutional frameworks** in addressing student mental health, emphasizing the **need for better mechanisms to prevent suicides.**

Mandate of the Task Force

➲ **10-Member Task Force:** Formed to investigate causes of student suicides, including ragging, caste-based discrimination, academic pressure, financial stress, and mental health stigma.

➲ **Assessment of Current Frameworks:** The task force will evaluate the effectiveness of existing laws, policies, and frameworks in higher education and suggest improvements.
➲ **Authority for Surprise Inspections:** The task force has the authority to conduct surprise inspections at higher education institutions.
➲ **Flexible Mandate:** The task force can make recommendations beyond its specified mandate if necessary.
➲ **Reporting Timeline:** The court has ordered the task force to present an interim report within four months and a final report within eight months.

Student's Suicide in India

➲ As per the Report of the National Crime Records Bureau 2022, over 13,000 students having lost their lives by committing suicide in the country.
➲ **Surge in Student Suicides:** Student suicides in India have risen at an alarming annual rate of 4%, double the national average.
➲ **Gender Trends:** Between 2021-2022, male suicides decreased by 6%, while female suicides increased by 7%.
➲ **States:** Maharashtra, Tamil Nadu, and Madhya Pradesh account for one-third of student suicides.

Reasons for the Rise in Student's Suicide

➲ **Academic Pressure:** Intense competition and high expectations in educational institutions, particularly in coaching hubs like Kota.
➲ **Mental Health Issues:** Increasing rates of depression, anxiety, and stress among students, with inadequate mental health support systems.
➲ **Social Stigma:** Stigma surrounding mental health, discouraging students from seeking help.
➲ **Caste and Gender Discrimination:** Discrimination based on caste, gender, and other social factors within academic institutions.
➲ **Family and Financial Strain:** Pressure from families to perform well academically, often combined with financial difficulties.
➲ **Failure and Academic Setbacks:** Struggles with failing exams, academic underachievement, and fear of failure leading to despair.
➲ **Lack of Support Systems:** Insufficient counseling services and mental health infrastructure in educational institutions.
➲ **Social Media and Peer Pressure:** The impact of social media on self-esteem, comparison with peers, and bullying.

Government Initiatives

➲ **Manodarpan Initiative:** The Union Education Ministry launched 'Manodarpan,' a program providing psychological support to students through a national toll-free helpline and website.
➲ **Rajasthan Government Actions:** Issued mental health guidelines in 2022 and 2023, enforced by district administrations.

- ◆ Appointed 90 psychological counselors to support students.
- ◆ Introduced a toll-free helpline for student assistance.
- ◆ 10,000 hostel gatekeepers have been trained to identify signs of mental distress among students.
- ⮞ **Dinner with DM Initiative in Kota:** A program where students in distress can meet district administration officials for support and counselling.
- ⮞ **Helpline for Support:** Students facing distress or suicidal tendencies can call the helpline at 104 for assistance.
- ⮞ **National Mental Health Policy:** Focused on improving mental health infrastructure and awareness in educational institutions.

WOMEN'S ROLE IN INDIA'S INCLUSIVE GROWTH

Context

Recently NITI Aayog launched the report titled "From Borrowers to Builders: Women's Role in India's Financial Growth Story."

Key Findings of the Report:

- ⮞ **Steady Rise in Women Borrowers:** Women seeking credit grew three times between 2019 and 2024, reflecting increased demand among female borrowers.
- ⮞ **Women Borrower Demographics:** About 60% of women borrowers availing credit are from semi-urban or rural areas.
  - ◆ Women under **30 years** of age account for only **27%** of retail credit uptake by women, compared to **40%** for men.
- ⮞ **Credit Supply Trends:** Women's participation in credit origination has seen notable growth in recent years. Since 2019, the share of Women in Business Loans and Gold Loans has increased by **14% and 6%** respectively.
  - ◆ By 2024, **42%** of loans availed by women were for personal finance, a slight increase from 39% in 2019.
    - ◦ The majority of loans availed by women continue to be against gold – **36%** of all loans availed by women in **2024** were gold loans vs. 19% of loans availed in 2019.
- ⮞ **Rise in Credit Monitoring and Awareness:** As of December 2024, **27 million** women borrowers in India have monitored their credit information report and score with CIBIL.

Significance of Women's Participation

- ⮞ **Economic Growth:** Women constitute nearly half of India's population but contribute only **18%** to the GDP.
  - ◆ Encouraging women entrepreneurs can increase India's GDP by **27%**, as per IMF estimates.
- ⮞ **Employment Generation:** MSMEs owned by women play a crucial role in job creation and skill development at local levels.

- ⮞ **Social Empowerment:** It promotes gender equality by demonstrating women's ability to lead and manage enterprises successfully.

INTERNATIONAL WOMEN'S DAY

Context

Prime Minister reiterates commitment for Women Empowerment on International Women's Day.

About

- ⮞ **Background:** Every Year International Women's Day is celebrated on the **8th March.**
  - ◆ **Vladimir Lenin** declared March 8 as International Women's Day in **1922** to recognise the **women's role in the 1917 Russian Revolution.**
  - ◆ It was officially recognized by the **United Nations in 1977.**
- ⮞ **The themes for 2025 include:**
  - ◆ **United Nations (UN) Theme:** "For All Women and Girls: Rights. Equality. Empowerment,".
  - ◆ **Official IWD Theme:** "Accelerate Action."
- ⮞ **The year 2025 commemorates 30 years** since the adoption of the **Beijing Declaration and Platform for Action.**
  - ◆ This agreement remains one of the most comprehensive frameworks for advancing women's and girls' rights globally.

Challenges Faced by Women

- ⮞ **Gender Discrimination:** Persistent patriarchal norms and stereotypes restrict women's roles to domestic spheres, limiting their access to education, employment, and leadership positions across sectors.
- ⮞ **Lack of Access to Education:** Many girls, especially in rural and marginalized communities, face barriers such as poverty, early marriage, and poor infrastructure, leading to low literacy and dropout rates.
- ⮞ **Economic Inequality:** Women in India face a gender wage gap, are underrepresented in formal employment, and often lack asset ownership and financial autonomy, perpetuating economic dependence.
- ⮞ **Safety and Security:** High rates of gender-based violence—including domestic abuse, sexual assault, and human trafficking—undermine women's freedom, dignity, and participation in public life.
- ⮞ **Health and Reproductive Rights:** Women face limited access to maternal health services, contraceptives, and reproductive rights, especially in rural areas, leading to high MMR and unmet health needs.
- ⮞ **Child Marriage:** Despite legal restrictions, child marriage remains prevalent, particularly in rural areas, adversely affecting girls' education, health, and decision-making autonomy.

- **Political Representation:** Women are underrepresented in Parliament, state assemblies, and local governance, with barriers including party bias, social stigma, and lack of political support.
- **Social Norms and Expectations:** Rigid societal norms define women's roles as caregivers and homemakers, limiting their freedom of choice, career aspirations, and ability to challenge inequality.
- **Workplace Harassment:** Gender-based harassment, lack of grievance redressal mechanisms, and unsupportive work environments discourage women from entering and staying in the workforce.

India is a Signatory to International Treaties such as:
- Universal Declaration of Human Rights (1948) and International Covenant on Civil and Political Rights (ICCPR, 1966).
- Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW, 1979).
- Beijing Declaration and Platform for Action (1995).
- United Nations Convention Against Corruption (2003).
- Agenda 2030 for Sustainable Development.

Achievements in India:
- **Nari Shakti Vandan Adhiniyam, 2023,** seeks to **reserve one-third of the total number of seats** for women in Lok Sabha, State Legislative Assemblies and Delhi Assembly.
- **The National Sex Ratio** improved to **1020** for the first time (National Family Health Survey -5).
- **72% women ownership** under PM Awas Yojana Gramin.
- **MMR to 97/lakh live births in 2018-20** from 130/lakh live births in 2014-16.
- **Abolition of Triple Talaq** empowering Muslim women.
- **Permanent commission** granted to **Women Officers in 12 Arms and Services.**
- **Entry of women as Agniveers** commenced in all the three Services.
- **43% of STEM graduates** in India are women which is highest in the world.

Government Initiatives
- **Mission Shakti** is a women empowerment programme launched by the Ministry of Women and Child Development (MWCD) for the period 2021-2025.
  - It aims to strengthen interventions for women's welfare, safety, and empowerment, making women equal partners in nation-building.
- **Initiatives like Beti Bachao, Beti Padhao, Sukanya Samriddhi Yojana, Janani Shishu Suraksha Karyakram, and PM Matru Vandana Yojana** have also contributed to significant improvements in the welfare and empowerment of women and girls.

- **The Mission Saksham Anganwadi and Poshan 2.0 programmes** focus on improving women's health beyond just calorie intake and improving overall health and immunity with proper micronutrients.
- **The Women in Science and Engineering-KIRAN (WISE KIRAN) program** has supported nearly 1,962 women scientists from 2018 to 2023.
- **Nari Shakti Puraskar:** Recognizes the contributions of women in various fields, celebrating achievements and inspiring others.
- **Maternity Benefit (Amendment) Act, 2017:** Provides for 26 weeks of paid maternity leave for women working in the private sector and government.

UNICEF'S KINSHIP AND COMMUNITY-BASED CARE PROGRAMME (KCBCP)

Context

India is moving away from institutional child care to family-based solutions like kinship care, foster care, and community support.

About KCBCP
- Seasonal migration forces families to leave children behind or take them to work, disrupting education and exposing them to child labor.
- **UNICEF's Kinship and Community-Based Care Programme** aims to keep children with relatives instead of institutions, with initiatives like **Mission Vatsalya**, which has increased non-institutional care fourfold since 2021-22.
- The focus is on preventing family separation, strengthening care systems, and ensuring mental health support for children and caregivers.

Significance
- **Promotes family-based care:** Ensures children grow up in a safe, nurturing family environment, rather than in institutional settings.
- **Strengthens community ties:** Empowers local communities to support vulnerable children through kinship and community networks.
- **Preserves cultural identity:** Helps children stay connected to their roots, traditions, and familiar surroundings.
- **Reduces reliance on institutional care:** Supports alternatives that are more cost-effective and emotionally beneficial for children.
- **Enhances child protection systems:** Builds capacity at the community level to identify and respond to child protection risks.
- **Encourages resilience:** Fosters self-reliance among families and caregivers through training, resources, and support services.

MEGALITHIC MENHIR IN TELANGANA

Context

Telangana's Mudumal Megalithic Menhirs included in India's tentative list for UNESCO World Heritage status.

About

➲ Menhirs are upright, man-made, large stones, typically tapered at the top.

➲ The largest known menhir is the Grand Menhir Brisé in France, once 20.6 meters tall.

➲ **Historical Linkages:** The word "menhir" comes from the Brittonic words "maen" (stone) and "hîr" (long).
  ◆ It was first used by French military officer and Celticist antiquarian Théophile Corret de la Tour d'Auvergne.

➲ **Culture Reference:** Menhirs are popularly known through the **character Obelix from the Asterix comics**, who carries them due to his superhuman strength.

➲ **Age of Menhirs:**
  ◆ European menhirs date back to the late Neolithic and early Bronze Age (4,800 to 3,800 years ago).
  ◆ The Mudumal menhirs are about 3,500 to 4,000 years old, making them the oldest in India.

➲ **Purpose:**
  ◆ Menhirs may have had ceremonial functions, acted as grave markers, or served astronomical purposes, such as tracking solstices.
  ◆ The Mudumal menhirs are aligned with the sun's rising and setting during solstices, suggesting they were used as an ancient observatory.

➲ **Significance:** The Mudumal menhirs are associated with local legends, such as the worship of one menhir as Goddess Yellamma.

Megalithic Culture in India

➲ It is associated with **Neolithic and Iron Age** societies that thrived between 1500 BCE and 500 CE, especially in the **Deccan Plateau.**

➲ The standing stones in Mudumal align with similar megalithic traditions found in other parts of South India, such as in Karnataka and Kerala.

Other Similar Sites in India

➲ **Hire Benekallu in Karnataka:** It is notable for its extensive collection of menhirs, dolmens, and cave paintings, earning a place on the **UNESCO Tentative List in 2021.**

➲ **Vibhutihalli in Karnataka:** It showcases a large rectangular field of boulders arranged in avenues, demonstrating solar alignments.

➲ **Nilgiri Dolmens in Tamil Nadu:** These comprise dolmens, stone circles, cists, and petroglyphs.

Importance of UNESCO Recognition

➲ Menhirs show early human understanding of physics and astronomy.

➲ They help us understand ancient cultures that left no written records, reflecting the cultural significance to the people who built them.

WORLD PUPPETRY DAY

Context

Every year on March 21st, World Puppetry Day seeks to recognize puppetry as a global art form.

About

➲ **The art of puppetry** includes the making and manipulation of puppets for use in some kind of theatrical performance, for stage, television, or film.

➲ **A puppet** is a figure—human, animal, or abstract in form—that is moved by human effort, not mechanical aid.

Puppetry in India

➲ **Ancient Origins of Puppetry:** Puppetry in India is believed to be as old as civilization itself.
  ◆ Some historians trace its roots to the **Harappan and Mohenjo-daro** cultures, where terracotta figures like a **bull with a detachable head** and a **sliding monkey** suggest early forms of animated toys.

Some of the popular versions of puppetry from all over India

NO STRINGS ATTACHED

RAJASTHAN
Kathputli
(Technique: String)

UTTAR PRADESH
Glove puppets

ASSAM
Putala Natch
(String)

MAHARASHTRA
Kalasutri Bahulya
(String)
Chamadyache
Bahulya (Shadow)

MANIPUR
Laithibi Jagoi
(String)

WEST BENGAL
Putul Nautch
(Rod)

KARNATAKA
Gombeyatta (String)
Togalu Gombeyatta
(Shadow)

BIHAR
Yampuri
(Rod)

ANDHRA PRADESH
Keelu bommalatam
(String) Tholu
Bommalata (Shadow)

TAMIL NADU
Bommalattam (Rod+String)

KERALA
Nool Pavakoothu (String)
Pavakoothu (Glove)

ODISHA
Gopalila Kundhei (String)
Ravanachhaya (Shadow)
Kathi Kandhe (Rod)

PUPPETRY TECHNIQUES

String Puppets	Rod Puppets	Shadow Puppets	Glove Puppets
Jointed limbs controlled by strings	Large glove puppets supported by rods	Operated against a white cloth screen	Worn on hands

- **Mentions in Epics and Religious Texts:** The **Mahabharata** refers to puppetry and shadow theatre as a form of popular entertainment.
  - In the **Srimad Bhagavata**, the universe is metaphorically described as being controlled by God through three strings—**Satta, Raja, and Tama**—like a marionette.
- **References in Ancient Inscriptions and Grammar:** The **Ashokan rock edicts** (3rd century BCE) allude to India as a puppet theatre.
  - **Panini**, the renowned grammarian, used puppets to illustrate grammatical rules, and **Patanjali** also referred to puppetry in his **Mahabhashya**, highlighting its role in **dance drama, storytelling, and puppet theatre.**
- **Evidence in Buddhist and Classical Texts:** The **Therigatha**, an early **Buddhist text**, mentions wooden string puppets with detachable limbs.

- The **Natyashastra** by **Bharata** speaks of a **Sutradhar** who controlled dolls using strings, further indicating the long-standing tradition of puppetry.
- **Mentions in Other Literary Works:** Texts like **Shilappadikaram**, **Kamasutra**, **Kathasaritsagar**, and Sanskrit plays like **Panchala Anuyanam** reference **puppet shows, dancing dolls**, and **mechanized wooden figures**, reflecting their cultural significance in ancient India.
- **Modern Relevance of Puppetry:**
  - In contemporary times, **educators and institutions** recognize puppetry as a **valuable medium for communication and learning.**
  - It is increasingly being used in **schools and educational programs** to teach concepts in an engaging and creative manner.

TYPE OF PUPPETRY	DESCRIPTION	EXAMPLES / REGIONS
String Puppets (Marionettes)	Puppets controlled by strings attached to limbs, allowing intricate movement and expression	Kathputli (Rajasthan), Bommalattam (Tamil Nadu), Gombeyatta (Karnataka), Putul Nach (West Bengal, Assam, Odisha)
Shadow Puppets	Flat figures made of leather or paper, used behind a lit screen to project shadows	Tholu Bommalata (Andhra Pradesh), Togalu Gombeyaata (Karnataka), Ravana Chhaya (Odisha)
Rod Puppets	Larger puppets mounted on rods, combining features of glove and string puppets	Putul Nach (West Bengal), Yampuri (Bihar)
Glove Puppets (Hand Puppets)	Puppets worn on the hand, manipulated by fingers to control head and arms	Pavakoothu (Kerala)

PROJECT PARI

Context

The Ministry of Culture is committed to preserving public art installations created under the Public Art of India (PARI) project.

About Project PARI (Public Art of India):

- **Launched by:** The **Ministry of Culture** to celebrate and enhance the public art scene in India.
- **Implementation by:** The Lalit Kala Akademi and the National Gallery of Modern Art.
- **Purpose:** It aims to stimulate dialogue and reflection through public art that blends India's rich cultural heritage with contemporary themes.
  - It showcases India's diverse regional art forms, such as Phad, Thangka, Gond, and Warli, through over 200 artists.
  - At present, the 'Public Art of India' (PARI) project has been implemented only in Delhi.
- It is a part of continuous effort of the Government in blending India's rich cultural history with contemporary themes in public art by providing incentives to the talented artists.

KALIYATTAM FESTIVAL

Context

The Kaliyattam festival takes place in the Malayalam month of Kumbham (February-March).

About

- Also known as **Theyyam**, this festival showcases ritual dance performances held to honour and worship **Goddess Kali.**
- Recognized as an essential part of **Kerala's intangible heritage**, it is celebrated in **Kavus** (sacred groves) and **tharavadus** (ancestral households). During the festival, performers are believed to become **channels of deities**, earning it the title **"dance of gods"** or **"dance of the divine".**

THIRD BATTLE OF PANIPAT (1761)

Context

Maharashtra CM Devendra Fadnavis stated that the Third Battle of Panipat (1761) should be remembered as a symbol of Maratha courage rather than just a defeat.

Background of the Third Battle of Panipat:

- **Mughal-Maratha War (1680–1707):** The Marathas lost significant territories to **Mughal Emperor Aurangzeb.**
- **Maratha Expansion:** Under **Peshwa Baji Rao**, they gained control over **Gujarat, Malwa, and Rajputana.**
- **Victory Near Delhi (1737):** Baji Rao defeated the Mughals, securing lands **south of Agra.**
- **Punjab Invasion (1758):** Raghunath Rao **removed Timur Shah (Abdali's son)** and took control of **Peshawar**. The Marathas **drove out Najib-ud-Daula** and seized **Punjab**, directly challenging **Abdali.**
- **Abdali's Return:** He launched a counterattack and **defeated the Marathas in the Third Battle of Panipat (1761).**

Outcomes of the Battle:

- **Maratha Defeat:** Ahmad Shah Abdali's forces broke through **Maratha flanks** and secured victory.
- **Impact on Marathas:** Their **northern expansion stopped**, and their power weakened for **about a decade.**
- Following the Third Battle of Panipat, Ahmad Shah Abdali appointed **Shah Alam II as the emperor of Delhi.**

Significance of the Third Battle of Panipat:

- **Weakened Maratha Power:** The defeat **diminished their military strength** and reduced territorial control.
- **Rise of British Influence:** The battle paved the way for **British dominance in India.**
- **Regional Shifts:** The decline of the Marathas allowed **Sikhs, Rajputs, and Jats** to gain power, increasing political diversity.
- **Maratha Revival (1771): Mahadji Shinde** led a campaign to **reclaim lost territories** and punish those who opposed the Marathas.
- **Cultural Impact:** The battle became a significant theme in **Indian literature, folklore, and historical narratives.**

BATTLE OF KARNAL

Context

The Battle of Karnal on February 24, 1739 marked a pivotal moment in Indian history, signaling the beginning of the end for the Mughal Empire.

About

- **Nadir Shah's army (Afsharid dynasty of Iran)** defeated **Mughal Emperor Muhammad Shah 'Rangila**'.
- The Mughal army, 300,000 strong, was outclassed by Nadir Shah's smaller but more disciplined force of 55,000.

- Nadir Shah's modern tactics and weaponry, including mounted musketeers, decisively defeated the Mughal cavalry.
- Nadir Shah captured and plundered Delhi, taking the Peacock Throne and the Koh-i-noor diamond.

Impact on the Mughal Empire

- Nadir Shah spared Muhammad Shah's life and restored most of his territory.
- Despite this, the Mughal Empire was left severely weakened, and its power declined over the next century.
- Nadir Shah left Delhi with almost empty coffers, weakening the Mughal's control over their empire.
- Over the next century, the Mughal Empire ceded more territory and power, eventually leading to British rule by 1857.

Reasons for Mughal Decline

- **Structural issues**, such as excessive taxation on peasants (leading to revolts) and corruption within the nobility, contributed to the decline.
- The **oppressive religious policies of Aurangzeb** also alienated Hindus and other religious minorities.

Additional Information

- Nadir Shah was the founder of the Afsharid dynasty of Iran.
- Nadir Shah was a military genius, who had already defeated multiple powers before turning his attention to India.
- After conquering Kandahar, he crossed the Khyber Pass and swiftly took control of Mughal vassal states, heading towards Delhi.

GOMIRA DANCE

Context

Artists performed the 'Gomira' dance during the Chanchala Kali Mata Puja in West Bengal.

About

- The Gomira **masked dance** is a traditional folk performance primarily practiced by the **Rajbongshi and Polia** communities of North Bengal.
- It is influenced by **Mahayana Buddhism, Tantric Buddhism, and Shaivite and Shakta** traditions. The dance emerged from a fusion of these spiritual influences.
- **Masks:** The masks used in the dance are made from various materials like papier mache, sholapith, bamboo, wood, sponge wood, clay, and paper.
- **Performance Style:** The Gomira dance is performed to the rhythmic beats of traditional percussion instruments like **Dhak and Kansar.**

10 MISCELLANEOUS

OSCAR AWARDS

Context

Recently, the 97th Oscar/Academy Awards were announced.

About:
- The Oscars, officially known as the Academy Awards, is an annual event which has recognized excellence in c**inematic achievements.**
- It was **first established in 1929 by the Academy of Motion Picture Arts and Sciences**
- **Categories:** The Oscars feature a variety of categories, with Best Picture being the most coveted.
  - Other major awards include Best Director, Best Actor, Best Actress, and Best Original Screenplay.

OSCAR AWARD 2025 WINNERS	
Best Picture	Anora
Best Actor	Adrien Brody (The Brutalist)
Best Actress	Mikey Madison (Anora)
Most Nominations	Emilia Pérez (13 nominations)
Biggest Winner	Anora (5 Oscars)
Best Director	Sean Baker (Anora)
Best International Feature Film	I'm Still Here
Best Animated Feature Film	Flow

MISSION 300

Context

In 2024, the World Bank Group and the African Development Bank together launched Mission 300.

About
- **Mission 300:** Aims to connect 300 million people to electricity in Sub-Saharan Africa by 2030.
  - The ambitious initiative builds on years of groundwork, much of it led by the **Energy Sector Management Assistance Program (ESMAP).**
- **Goal:** Accelerate electrification while ensuring cleaner, diversified energy sources, economic growth, and job creation.

- **Current Challenge:** Nearly 600 million people in Sub-Saharan Africa lack electricity, making up **83% of the global unelectrified population.**
- **Key Focus Areas:**
  - Investment in generation, transmission, distribution, and regional interconnection.
  - Sector reform to ensure reliable, affordable, and quality power.

'HONORARY ORDER OF FREEDOM OF BARBADOS' AWARD

Context

The Prime Minister, Narendra Modi has received the 'Honorary Order of Freedom of Barbados' Award.

About
- It was in recognition of his **"strategic leadership" and "valuable assistance"** during the Covid-19 pandemic.
- It is one of the **highest national honors awarded** by the government of Barbados.
  - It is given to individuals or organizations that have made significant contributions to the country, its development, or to international relations in a meaningful and impactful way.

Vaccine Maitri Initiative
- **Launched:** The initiative began in 2021, during the global COVID-19 pandemic.
- **Aim:** To provide COVID-19 vaccines to countries around the world, especially to developing nations, to combat the spread of the virus.
- **Scope:** India supplied vaccines to over 90 countries in Africa, Asia, the Caribbean, and Latin America, among others.

COMPASSION IN HEALTH CARE

Context

Recently, the WHO released a landmark report titled "Compassion and Primary Health Care," recognizing compassion as a transformative force in health care.

About

➲ **Meaning: Compassion** is the deep awareness of someone else's suffering, accompanied by a strong desire to help or alleviate their pain.

➲ **Compassion in healthcare** refers to the practice of providing medical care with kindness, empathy, and a deep understanding of a patient's physical, emotional, and psychological needs.

➲ It goes beyond treating illnesses and involves actively listening, showing respect, and addressing patients' concerns with sensitivity.

Benefits of Compassionate Health Care:

➲ **Improved Patient Outcomes** – Compassionate care helps reduce stress and anxiety in patients, leading to faster recovery and better overall health outcomes.

➲ **Enhanced Patient Satisfaction** – Patients feel valued, respected, and heard, which improves their trust in healthcare providers and increases satisfaction with their treatment.

➲ **Better Mental Health** – Acts of compassion from healthcare professionals can alleviate fear, depression, and loneliness in patients, promoting emotional well-being.

➲ **Stronger Patient-Provider Relationship** – A compassionate approach fosters open communication, making patients more likely to share their concerns, leading to accurate diagnoses and effective treatment.

➲ **Reduced Burnout in Healthcare Providers** – When healthcare workers practice compassion, they experience a greater sense of fulfillment, reducing stress and burnout in high-pressure medical environments.

➲ **Increased Treatment Adherence** – Patients who feel cared for are more likely to follow medical advice, take prescribed medications, and adhere to treatment plans, leading to better long-term health.

➲ **Encourages a Healing Environment** – Compassionate care creates a supportive and positive atmosphere that benefits both patients and healthcare staff, fostering a sense of community and well-being.

Global Perspectives and Best Practices

➲ **United Kingdom (NHS):** Emphasizes "**compassionate leadership**" in public health care.

➲ **Japan's Universal Health Care System:** Integrates **holistic healing and compassionate patient care**.

➲ **Scandinavian Countries:** Have **patient-first health-care policies** that incorporate **mental well-being as a fundamental health-care principle**.

➲ India can **adopt and customize these best practices** within its **Ayushman Bharat and AIIMS-led training programs**.

59TH JNANPITH AWARD

Context

Vinod Kumar Shukla, poet-writer from Raipur, was announced as the recipient of the 59th Jnanpith Award for 2024.

About Vinod Kumar Shukla:

➲ **Vinod Kumar Shukla**, aged **88**, is an **eminent Hindi writer**, poet, short story writer, and essayist.

➲ He is known for his **unique linguistic style** and the **emotional depth** in his works.

➲ Shukla is the **12th Hindi writer** to receive the **Jnanpith Award** and the **first-ever writer from Chhattisgarh** to be honored.

➲ **His famous works include:**
  ◆ **"Deewar Mein Ek Khirkee Rahati Thi"** – won the **Sahitya Akademi Award** in **1999.**
  ◆ **"Naukar Ki Kameez"** (1979) – later adapted into a film by **Mani Kaul.**
  ◆ **"Sab Kuch Hona Bacha Rahega"** (1992) – a well-known poetry collection.

About Jnanpith Award:

➲ **The Jnanpith Award** is **India's highest literary honor**, instituted in **1961** by the **Bharatiya Jnanpith.**

➲ It is awarded annually to **Indian authors** for their **outstanding contributions** to **literature** in any of the **languages** listed in the **Eighth Schedule** of the **Indian Constitution and English Language.**

➲ The first award was conferred in **1965** to **Malayalam poet G. Sankara Kurup** for his anthology **"Odakkuzhal".**

➲ Not conferred posthumously.

➲ **The award includes:**
  ◆ **₹11 lakh cash prize.**
  ◆ **Bronze statue** of **Saraswati** (Hindu goddess of learning).
  ◆ **Citation.**

VIKRAMSHILA UNIVERSITY

Context

A decade after the modern Nalanda University was re-established near its historical site in Rajgir, efforts are now underway to revive Vikramshila University.

About

➲ It was founded by **King Dharmapala of the Pala Dynasty** in late 8th to early 9th century AD.

➲ It is present at **Bhagalpur district, Bihar, India.**

- Vikramshila was one of the most important **Buddhist learning centres of medieval India**, second only to Nalanda University.
- It was especially **renowned for Tantric studies,** which were popular during the Pala period in both Buddhist and Hindu traditions.
- Destroyed in the late 12th century by Bakhtiyar Khalji, a military commander under **Qutb-ud-din Aibak.**
- **Atisa Dipankara** was a renowned Buddhist master and scholar who played a significant role in the revival and reform of Buddhism in Tibet during the 11th century.

- The government assures confidentiality; information is shared only for educational purposes.
- **Status of APAAR ID:**
  - **It is optional not mandatory** (as confirmed by the government in Dec 2024).
  - However, some schools (like CBSE and in Uttar Pradesh) are pushing for **100% student registration.**
  - Many parents **don't know it's voluntary** due to unclear communication.
  - **Parents can refuse joining Apaar** by informing schools in writing.

APAAR ID

Context

Activists and parents are worried about the rapid push by schools to generate an APAAR ID.

About:

- APAAR stands for '**Automated Permanent Academic Account Registry'.**
- It's a unique ID system for students across India, initiated from childhood.
- The project is part of India's **National Education Policy 2020.**
- **Purpose of APAAR ID:**
  - APAAR aims to provide each student with a lifelong ID.
  - This ID helps track academic progress from early education to higher studies.
  - APAAR is also linked to Digilocker, enabling digital storage of academic documents.
- **Benefits of Introducing APAAR ID:**
  - Simplifies educational processes, reducing dependency on physical documents.
  - Facilitates tracking of key educational metrics like literacy and dropout rates.
  - Aims to curb fraud and duplication in educational certificates.
- **Functioning of APAAR ID:**
  - Links to the Academic Bank Credit (ABC) for storing educational credits and achievements.
  - Eases transfer of academic records across schools and states with the unique APAAR ID.
  - Digital certification of achievements and course completions are stored securely.
- **Concerns and Safeguards:**
  - Concerns exist about the privacy and security of Aadhar details.
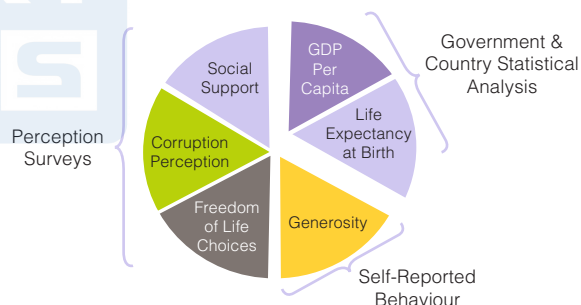
WORLD HAPPINESS REPORT 2025

Context

The Wellbeing Research Centre has released the World Happiness Report 2025.

About

- **Published by:** University of Oxford's Wellbeing Research Centre in partnership with Gallup, the UN Sustainable Development Solutions Network.

World Happiness Index

- **Ranking:** Finland emerged as the 'happiest' country again, followed by Denmark and Iceland.
  - **Afghanistan** ranked the lowest followed by Sierra Leone and Lebanon.
  - **India ranked 118 out of 147** countries, India's lowest ranking was 144 on the list in 2012, while its scores peaked in 2022 at 94.

Additional Information

- The **UN declared March 20** as the **International Day of Happiness in 2012.**
- The concept of World Happiness Day was **first proposed by Bhutan** in the **1970s**, a country known for prioritizing **Gross National Happiness** over Gross Domestic Product.

POSHAN Abhiyaan & Malnutrition

➲ **Aims to reduce:**
- Stunting & undernutrition by 2% per year.
- Anaemia by 3% per year.
- Low birth weight by 2% per year.

➲ **60:40** Centre-State funding ratio for general States; 90:10 for Northeastern/Himalayan States.

➲ **35.5%** of children under 5 are stunted.

➲ **32.1%** are underweight.

➲ **67.1%** of children (6–59 months) are anaemic.

➲ Focuses on the first 1,000 days of a child's life for intervention.

Tribunals

➲ 18,829 pending cases in Armed Forces Tribunal (AFT) as of 2021.

➲ **Tribunal members:** Tenure – 4 years, Minimum age – 50 years, Maximum – 67/70 years.

➲ 9 appellate tribunals were abolished under the Tribunal Reforms Act, 2021.

Electoral Reforms

➲ The 61st Constitutional Amendment (1988) reduced voting age from 21 to 18 years.

➲ 46% of MPs have pending criminal cases.

➲ 31% of MPs face serious charges (murder, rape, etc.).

➲ Over ₹1,00,000 crore spent in the 2024 Lok Sabha elections.

UN Peacekeeping

➲ India has deployed 2,90,000+ personnel in over 50 missions.

➲ 5,000+ Indian peacekeepers currently serve in 9 active missions.

➲ 180 Indian peacekeepers have died in service.

➲ 12,000 troops trained annually by CUNPK.

➲ Women constitute 7.9% of global uniformed peacekeepers.

India-New Zealand Trade

➲ Bilateral trade: USD 2.29 billion (2022–23).

➲ Current trade (2023–24): USD 1.75 billion.

➲ Indian diaspora in New Zealand: 6% of total population.

India-Mauritius Relations

➲ USD 851.13 million bilateral trade in FY 2023–24.

➲ USD 175 billion FDI from Mauritius since 2000.

➲ USD 500 million Line of Credit for infrastructure projects.

Sea Level Rise

➲ Global sea level rising at 0.59 cm/year in 2024 (up from 0.43 cm).

➲ **India's coastline:** 32% erosion between 1990–2018.

➲ **32%** of India's coastline is eroding (NCCR data).

➲ 3.6 million people are at risk from rising sea levels.

➲ By 2040, more than 10% of Mumbai, Yanam, and Thoothukudi could be submerged.

➲ 5–10% submergence expected in areas like Panaji and Chennai.

➲ MISHTI targets restoration of 540 sq. km of mangroves over 5 years.

Cryosphere & Glaciers

➲ 70% of Earth's freshwater is locked in snow or ice.

➲ Glaciers cover 10% of Earth's land surface.

➲ Hindu Kush Himalaya (HKH) region spans 3,500 km across 8 countries.

➲ HKH provides water to 240 million people.

➲ Since 1975, glaciers have lost 9,000 billion tonnes of ice.

➲ Global snow cover has declined by 7.79%.

➲ The UN declared 2025 as the International Year of Glaciers' Preservation.

COVID-19 & Welfare Schemes

➲ 75 million job losses during the 2020 lockdown (CMIE data).

➲ PMGKY provided relief to 80 million people via food and financial assistance.

➲ Swachh Bharat Mission led to a 60% reduction in rural open defecation (UNICEF, 2021).

Agricultural Infrastructure Fund (AIF)

➲ Punjab utilized 100% of ₹4,713 crore allocated under AIF.

➲ ₹47,575 crore sanctioned for 74,508 projects till August 2024.

➲ The scheme generated 8.19 lakh rural employment opportunities.

➲ AIF aims to disburse ₹1 lakh crore till FY 2025–26.

Trade & Economy

➲ **India's trade deficit in Feb 2025:** USD 14.05 billion (42-month low).

➲ **Crude oil imports:** USD 11.89 billion (30% YoY fall).

➲ **Total imports:** USD 50.9 billion, lowest in 22 months.

India's Tea Exports

➲ India became the 2nd-largest tea exporter in 2024.

➲ Exported 255 million kg, value rose from ₹6,161 crore (2023) to ₹7,111 crore (2024).

National Technical Textiles Mission

➲ India ranks **6th globally** in textile exports with **3.9%** share.

➲ The sector contributes 2% of GDP, to grow to USD 350 billion by 2030.

➲ Projected to create 3.5 crore jobs.

Test Yourself

Objective Questions

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

Mains Questions

GS PAPER-I

1. Mass coral bleaching events have intensified due to rising sea temperatures and ocean acidification. Analyze the ecological and economic consequences and suggest conservation strategies. *(10 Marks, 150 Words)*

2. Despite several government initiatives, malnutrition continues to persist in India. Examine the effectiveness of POSHAN Abhiyaan and Mission POSHAN 2.0 in addressing the nutritional challenges and suggest measures to strengthen its implementation. *(15 Marks, 250 Words)*

3. Reservation has increased women's representation in PRIs, yet challenges like proxy leadership and limited autonomy persist. Discuss the barriers and measures needed to empower women leaders at the grassroots. *(15 Marks, 250 Words)*

4. The melting of glaciers, especially in the Hindu Kush Himalaya, poses serious threats to water security and global climate stability. Examine the significance of the cryosphere and the challenges it faces. *(15 Marks, 250 Words)*

GS PAPER-II

5. The Tribunal Reforms Act, 2021 has drawn criticism for undermining judicial independence and efficiency. Critically analyze the challenges affecting the tribunal system in India and suggest comprehensive reforms for their revitalization. *(10 Marks, 150 Words)*

6. India–Mauritius relations are rooted in historical, cultural, and strategic ties. Analyze the growing geo-economic and maritime significance of Mauritius in India's Indian Ocean strategy. *(10 Marks, 150 Words)*

7. Despite several reforms, Indian elections continue to face issues of money power, criminalization, and lack of transparency. Critically evaluate the need for comprehensive electoral reforms. *(15 Marks, 250 Words)*

8. The growing trend of emotion-driven politics is shifting democracies into "emocracies". Critically evaluate this shift and its implications for democratic governance, policy-making, and institutional integrity. *(15 Marks, 250 Words)*

9. India has been a consistent contributor to UN peacekeeping missions, reflecting its commitment to global peace and multilateralism. Evaluate India's role in peacekeeping and the challenges it faces in strengthening its contributions. *(15 Marks, 250 Words)*

10. India and China marked 75 years of diplomatic relations in 2025 amid ongoing geopolitical tensions. Examine the evolution of bilateral ties and identify key challenges and opportunities in redefining the relationship. *(15 Marks, 250 Words)*

11. India–New Zealand relations, while friendly, have remained underexplored. Discuss the significance of this partnership in the Indo-Pacific context and suggest steps to deepen strategic and economic ties. *(15 Marks, 250 Words)*

GS PAPER-III

12. The revised investment and turnover thresholds for MSME classification aim to expand benefits and improve competitiveness. Examine the implications of this reform on formalization and growth. *(10 Marks, 150 Words)*

13. India's creative economy has immense potential to boost inclusive growth, innovation, and cultural preservation. Discuss its significance and highlight the key challenges in unlocking its full value. *(10 Marks, 150 Words)*

14. India's growing bioeconomy offers solutions for economic growth, climate action, and energy security. Discuss the major drivers and opportunities in this sector. *(10 Marks, 150 Words)*

15. Sea level rise is a key indicator of climate change with wide-ranging implications for coastal communities. Discuss its causes, impacts, and India's response strategy. *(10 Marks, 150 Words)*

16. The Disaster Management (Amendment) Bill 2024 seeks to modernize disaster governance in India. Critically evaluate its provisions, challenges, and the need for decentralization and local empowerment. *(10 Marks, 150 Words)*

17. Space debris is emerging as a serious threat to future space exploration and sustainability. Discuss the causes, implications, and global initiatives for space debris mitigation. Suggest steps India should take to address this challenge. *(15 Marks, 250 Words)*

18. MSMEs are the backbone of India's industrial economy, contributing significantly to employment, exports, and innovation. Analyze their role and evaluate the effectiveness of government support. *(15 Marks, 250 Words)*

19. Satellite internet services like Starlink offer opportunities to bridge the digital divide in India. Analyze its potential benefits and associated challenges in the Indian context. *(15 Marks, 250 Words)*

20. The ocean floor has emerged as a strategic frontier in modern conflicts due to growing dependence on undersea infrastructure. Examine the challenges and India's preparedness in countering seabed warfare. *(15 Marks, 250 Words)*