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For UPSC | IAS | IPS & State Civil Services Aspirants

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US–Israel Attack on Iran and Its Impact on Global Oil Markets

1. Why in News?

- On **28 February 2026**, the **United States (US)** and **Israel** launched **aerial and missile attacks on Iran**.
- The strikes targeted **Iranian cities and military installations**, leading to the death of **Iran's Supreme Leader Ayatollah Ali Khamenei** and several senior officials.
- In response, **Iran launched missiles and drones** against **US allies in the Middle East**.
- The conflict has raised serious concerns about **regional security and global oil supply disruptions**.

2. Why Did the US and Israel Attack Iran?

- The attack followed **months of rising tensions** over **Iran's nuclear programme**.
- Key reasons cited by the **US and Israel**:
  - Iran allegedly continues efforts to develop **Nuclear Weapons**
  - Iran rejected diplomatic efforts to **limit its nuclear activities**
  - Growing concerns about **regional security threats**
- The **US administration** stated the attack was meant to stop Iran from gaining **nuclear weapons capability**.

3. Background of the Iran Nuclear Issue

- The conflict is linked to the long-standing dispute over **Iran's nuclear programme**.
- Important developments:
  - **Iranian Revolution (1979)** established the **Islamic Republic of Iran**
  - **2015 Iran Nuclear Deal (JCPOA)** attempted to restrict Iran's nuclear programme
  - The **US imposed sanctions on Iran's oil sector**
  - Negotiations between the **US and Iran** had been ongoing but failed to reach an agreement
- Israel has long viewed Iran as an **existential threat**.

4. Iran's Response

Iran retaliated with **missile and drone attacks** across the **Middle East**.

Targets included:

- **US military bases**
- **Oil and gas installations**
- **Civilian infrastructure**

Countries affected include:

- **Saudi Arabia**
- **Bahrain**
- **Qatar**
- **United Arab Emirates (UAE)**
- **Kuwait**
- **Jordan**
- **Iraq**
- **Cyprus**

The conflict also triggered violence involving **Hezbollah in Lebanon**.

5. Humanitarian Impact

- The conflict has caused **significant civilian casualties**.

- Reports indicate:
  - More than **750 people killed in Iran**
  - Around **175 children killed in a school attack**
- The **United Nations (UN)** and several international organisations have called for an **immediate ceasefire**.

6. Why Iran is Important for Global Oil Supply

- Iran is one of the **largest producers of oil and gas in the world**.
- Key facts:
  - Iran is among the **top five fossil fuel producers globally**
  - A large share of **Iranian oil exports goes to China**
  - Iranian oil accounts for **over 13% of China's seaborne oil imports**
- Despite **US sanctions**, Iran remains a major player in **global energy markets**.

7. Strategic Importance of the Strait of Hormuz

- Iran has threatened to block the **Strait of Hormuz**, a critical global shipping route.
- Important facts:
- The **Strait of Hormuz** is the **main route for oil exports from the Persian Gulf**
- Countries using this route include:
  - **Saudi Arabia**
  - **Iraq**
  - **Kuwait**
  - **Qatar**
  - **UAE**
  - **Oman**
- Together, these countries produce **over 20% of the world's fossil fuels**.
- Any disruption here can severely affect **global energy supply**.

8. Impact on Global Oil Prices

- The conflict has already disrupted **oil and gas infrastructure**.
- Immediate effects:
  - **Oil prices increased by about 10%**
  - **Natural gas prices increased by about 50%**
- Before the conflict, oil was around **$67 per barrel**.
- If the conflict continues, prices may rise **above $100 per barrel**.

9. Global Economic Impact

- Rising energy prices can lead to:
  - **Higher fuel costs**
  - **Inflation**
  - **Food price increases**
  - **Economic instability**
- The situation may resemble the **global energy crisis during the Russia–Ukraine war**.

Regions most affected could include:

- **Europe**
- **United States**
- **Asia**

10. Broader Geopolitical Implications

- The conflict increases tensions across **West Asia (Middle East)**.
- Possible consequences include:
  - Expansion of **regional conflict**
  - Greater **military involvement of global powers**
  - Increased **energy market instability**
- At the same time, **oil companies and defence industries** may gain economically due to rising demand.

Conclusion

The **US–Israel attack on Iran** and Iran's retaliation have created a serious **geopolitical crisis in West Asia**. Because the region produces a large share of the world's **oil and gas**, the conflict threatens **global energy security and economic stability**. If tensions continue and the **Strait of Hormuz** is disrupted, the world could face **sharp increases in oil prices and a new global energy crisis**.

Visit of Canadian PM Mark Carney to India: A Strategic Reset (2026)

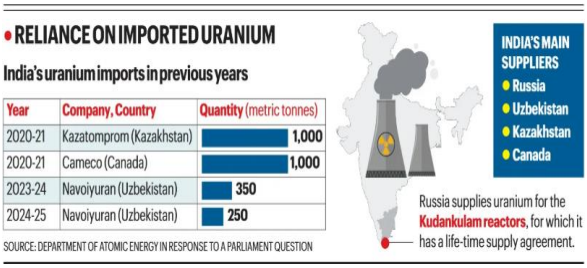
Why in News?

In **early 2026**, the Prime Minister of Canada, **Mark Carney**, paid an official visit to India, marking a significant **strategic reset** in bilateral relations. This visit follows a period of intense diplomatic friction in 2023–24. The engagement signals a mutual transition toward **pragmatic cooperation**, focusing on nuclear energy, critical minerals, and a "Viksit Bharat" aligned trade agenda.

1. Key Outcomes of the Visit

- **CEPA Trade Relaunch:** India and Canada signed the **Terms of Reference (ToR)** to resume negotiations for the **Comprehensive Economic Partnership Agreement (CEPA)**. The nations aim to double bilateral trade to **50 billion dollars by 2030**.
- **Landmark Uranium Deal:** A **2.6 billion dollar** long-term commercial contract was signed between India's Department of Atomic Energy and Canada's **Cameco**. This ensures a stable supply of Uranium Ore Concentrates to support India's goal of **100 GW nuclear capacity by 2047**.
- **Critical Minerals & Clean Energy:**
  - Signed an MoU for resilient **critical mineral supply chains**, aligning with G7 standards.
  - Canada officially joined the **International Solar Alliance (ISA)** and the **Global Biofuels Alliance (GBA)**.
- **Defense & Security:** Announced the establishment of the first-ever **India-Canada Defence Dialogue** to institutionalize strategic security discussions.
- **Innovation & Education:**
  - **300 fully-funded research internships** for Indian students via an MoU between AICTE and Canada's Mitacs.
  - Establishment of a **Joint Pulse Protein Centre of Excellence** at NIFTEM-K (Kundli) to address micronutrient deficiencies through food technology.
- **Diplomatic Soft Power:** India backed Canada's bid to join the **Indian Ocean Rim Association (IORA)** as a Dialogue Partner.

2. Importance of Canadian Uranium for India



- **Fuel Security:** Uranium is the primary fuel for India's nuclear expansion. While domestic ore is low-grade (**0.02%–0.45%**), Canadian mines offer grades as high as **15%**, making imports significantly more efficient and cost-effective.
- **Supply Gap:** Over **70%** of India's uranium needs are currently met through imports from countries like Kazakhstan, Uzbekistan, and Canada.
- **Strategic Act:** The **Sustainable Harnessing and Advancement of Nuclear Energy (SHANE) Act, 2025**, now facilitates deeper private sector and global collaboration in this sector.

3. Significance of the India-Canada Partnership

- **Economic Synergy:** Canada offers advanced technology and natural resources (potash, uranium), while India provides a massive market and skilled talent. Canadian Pension Funds have already invested over **75 billion dollars** in India.

- **The Diaspora Bridge:** With **1.8 million Indians** (4% of Canada's population), the diaspora remains the strongest link for people-to-people ties and remittances.
- **Indo-Pacific Alignment:** Both nations are committed to a free and open Indo-Pacific. Canada's Indo-Pacific Strategy explicitly identifies India as a **critical partner**.

4. Challenges and Way Forward

Challenges	Measures to Strengthen Relations
Khalistani Extremism: Concerns over anti-India activities and safety of consulates.	**Security Cooperation:** NSAs to implement a joint action plan against violent extremism.
Trade Barriers: Disputes over agricultural tariffs and intellectual property (IPR).	**Early Harvest Deal:** Pursue an interim trade agreement for less contentious sectors.
Visa Backlogs: Delays caused by the 2023–24 diplomatic staff reductions.	**Mobility Facilitation:** Expand academic programs and streamline consular processes for students.

Conclusion

The 2026 visit of PM Mark Carney represents a shift from "diplomacy of grievance" to "diplomacy of growth." By anchoring the relationship in **civil nuclear energy** and **defense dialogue**, both nations are insulating their strategic interests from domestic political fluctuations. A stable India-Canada partnership is now viewed as essential for a resilient global supply chain and a secure Indo-Pacific.

Israel's "Hexagon of Alliances": A New Strategic Architecture (2026)

Why in News?

In **February 2026**, Israeli Prime Minister Benjamin Netanyahu unveiled the **"Hexagon of Alliances,"** a transformative geopolitical framework designed to create a structured network of "moderate powers." Announced ahead of Indian Prime Minister Narendra Modi's state visit to Israel (**February 25–26, 2026**), the proposal aims to link the Indo-Pacific, the Mediterranean, and the Gulf into a singular strategic arc. This initiative is positioned as a direct counterweight to regional radicalization and shifting security dynamics in West Asia.

1. Objective: Countering the "Radical Axes"

The framework is conceptualized to consolidate a coalition of nations that share a similar perception of regional threats. It specifically targets:

- **The Radical Shia Axis:** Led by **Iran** and its "Axis of Resistance" (including Hezbollah, Hamas, and the Houthis), which Israel claims to have significantly degraded through military operations in 2025.
- **The Emerging Radical Sunni Axis:** Targeting remnants of **ISIS** and extremist groups affiliated with the **Muslim Brotherhood** (founded in 1928).
- **Strategic Balancing:** Supporters see it as a "Neo-Periphery Doctrine" to bypass hostile neighbors by building deep ties with reliable partners like India, Greece, and Ethiopia.

2. The Six-Sided Network: Key Partners

While termed a "Hexagon," the framework is designed as a flexible, multi-track system that could eventually involve up to **20 nations**.

- **Core Pillars: India** is identified as the central strategic pillar, linking Asia with the Mediterranean. **Israel, Greece, and Cyprus** form the Mediterranean core.
- **Regional Inclusion:** The vision encompasses "moderate" **Arab and African nations**. **Ethiopia** is a primary candidate due to its strategic location on the Red Sea, alongside Abraham Accords partners like the **UAE** and **Morocco**.
- **Asian Outreach:** Select (unnamed) Asian nations that share maritime security and counter-terrorism goals.

3. Focus Areas and Strategic Evolution

The alliance is more than a trade corridor; it is a **hard-security architecture** focusing on:

- **Defense & Intelligence:** Deepening cooperation in **AI-driven surveillance**, quantum computing, and intelligence sharing.
- **Joint Production:** Moving beyond a buyer-seller model to co-develop advanced

systems, such as the **Iron Beam** (100kW laser system).

- **Connectivity:** It complements the **India-Middle East-Europe Economic Corridor (IMEC)** but adds a "far-reaching security dimension" that IMEC lacks.

4. Geopolitical Implications and Pushback

- **Pakistan's Response:** On **February 24, 2026**, the **Pakistani Senate** unanimously passed a resolution condemning the Hexagon proposal. Islamabad labeled it an "anti-Muslim Ummah bloc" and a threat to regional stability, specifically fearing the "asymmetric advantage" India might gain through Israeli technology.
- **Regional Rivalries:** Nations like **Turkey** perceive the Greece-Cyprus-Israel-India alignment as a containment strategy.
- **India's Balancing Act:** While India participated in the **International Fleet Review 2026** and signed a "Special Strategic Partnership" with Israel, New Delhi maintains its "strategic autonomy," carefully balancing these ties with its energy interests in the Gulf and civilizational links with Iran.

Conclusion

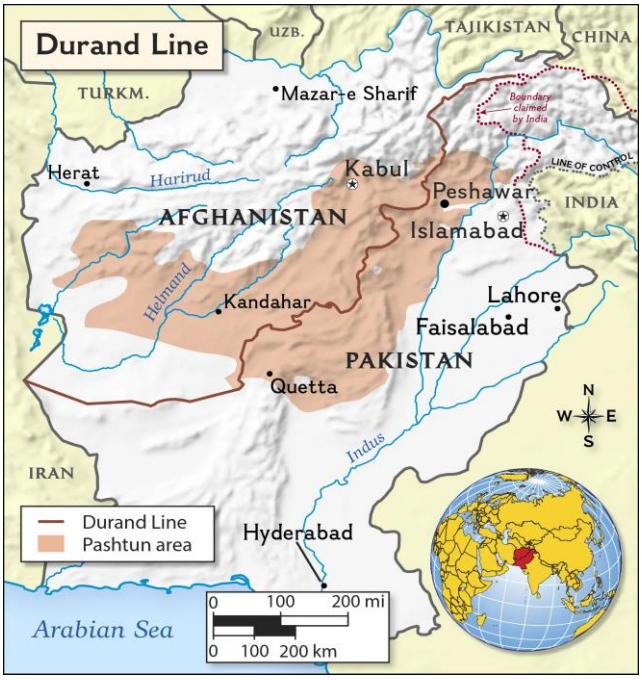
The "Hexagon of Alliances" represents a shift from bilateral "Bridges of Friendship" toward a **structured, minilateral security bloc**. By positioning India at the heart of this Mediterranean-to-Indo-Pacific arc, Israel is attempting to formalize a "Special Strategic Partnership" that protects maritime lifelines and counters radicalism. However, the viability of the Hexagon will depend on whether its members can align their diverse national interests without being trapped in a zero-sum regional conflict.

The Durand Line: Escalating Pakistan–Afghanistan Border Tensions (2026)

Why in News?

In **early 2026**, the historically disputed **Durand Line** became a flashpoint for direct military confrontation. Tensions escalated following a series of skirmishes over border fencing and the presence of **Tehrik-i-Taliban Pakistan (TTP)** militants. In response to cross-border attacks, Pakistan launched a retaliatory military operation titled **"Ghazab Lil Haq."** The conflict is further complicated by the mass deportation of Afghan refugees from Pakistan and the Afghan Taliban's continued refusal to recognize the line as a formal international boundary.

1. What is the Durand Line?



- **Geography:** A **2,640-kilometer (1,640-mile)** porous border stretching from the **Karakoram Range** in the northeast to the **Registan Desert** near Iran in the southwest.
- **Origin (1893):** Established via an agreement between **Sir Mortimer Durand** (British India) and **Emir Abdur Rahman Khan** (Afghanistan).
- **Historical Purpose:** It was created as a buffer zone to separate British and Russian spheres of influence during the **"Great Game."**
- **Inheritance:** Pakistan inherited the boundary after the 1947 partition, but Afghanistan has consistently viewed it as a colonial imposition that "expired" after 100 years.

2. Core Reasons for the 2026 Disputes

- **Non-Recognition & Pashtun Identity:** The line bisects the **Pashtun and Baloch** tribal heartlands. Kabul's refusal to recognize the border is rooted in the "Pashtunistan" sentiment—a call for a unified ethnic homeland.
- **Border Fencing:** Pakistan's unilateral project to fence the entire border (initiated in 2017) is viewed by the Taliban as an attempt to "permanently divide" the Pashtun people.

Afghan forces have frequently dismantled these fences.

- **The TTP Factor:** Islamabad accuses the Afghan Taliban of providing safe havens to the **TTP**, which has conducted over **300 attacks** inside Pakistan in the last year. The ideological bond between the two Taliban groups prevents Kabul from taking decisive action.
- **Trade Chokepoints:** Frequent closures of the **Torkham** and **Chaman** crossings serve as economic pressure tactics by Pakistan, severely impacting landlocked Afghanistan.

3. Implications for India

- **Strategic Depth Collapse:** The hostility between the Taliban and Pakistan signals the failure of Islamabad's "strategic depth" policy, which aimed to use Afghanistan as a friendly backyard against India.
- **Two-Front Pressure on Pakistan:** The need to deploy heavy military assets (up to **200,000 troops**) along the Western border reduces Pakistan's ability to concentrate resources on the Line of Control (LoC) with India.
- **Diplomatic Opportunity:** As Pakistan-Taliban ties sour, India has found more space for **humanitarian diplomacy** and technical engagement in Kabul, reinforcing its role as a stable regional partner.
- **Terrorism Risks:** Ongoing instability risks the resurgence of groups like **ISKP (Islamic State Khorasan Province)**, which threatens regional security beyond the immediate border.

Conclusion

The Durand Line dispute has evolved from a diplomatic disagreement into an active theater of war. The 2026 escalation proves that religious affinity (Taliban ideology) does not override nationalist and territorial friction. For India, while the diversion of Pakistan's military focus offers a strategic reprieve, the potential for a "power vacuum" or the expansion of transnational terror groups like ISKP remains a significant concern for regional connectivity and security.

International Law and the Use of Force: The 2026 US-Israel-Iran Conflict

Why in News?

The joint military offensive by the US and Israel against Iran has triggered a global legal debate. The **bombing of a girls' school in Minab** and the **torpedoing of the IRIS Dena** off the coast of Sri Lanka have brought into question the limits of "pre-emptive" self-defence. While the strikes were justified by the US and Israel as a response to an imminent threat, they face significant scrutiny under the **UN Charter**, **International Humanitarian Law (IHL)**, and **UNCLOS**.

1. Doctrine of Self-Defence and the UN Charter

The legality of initiating force is governed by *jus ad bellum*.

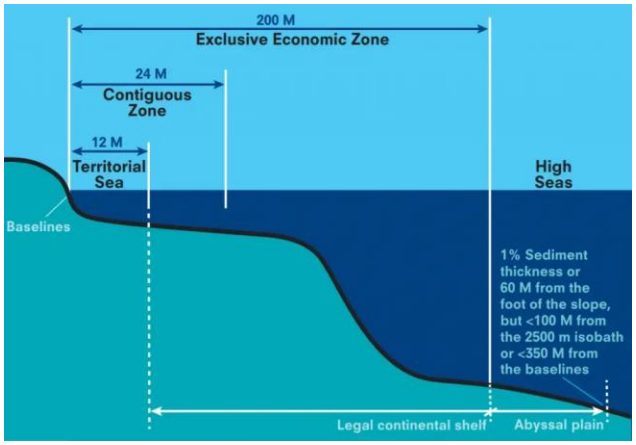
- **Article 2(4):** Prohibits the threat or use of force against the territorial integrity or political independence of any state.
- **Article 51:** Recognizes the inherent right of self-defence only in response to an **"actual armed attack."** Critics argue that since Iran had not launched a direct attack prior to the February 2026 strikes, the criteria for Article 51 were not strictly met.
- **Anticipatory Self-Defence:** The US and Israel rely on this controversial theory. For such a strike to be lawful, it must be proven that:
    1. Iran had a clear **intent** to attack.
    2. It possessed the immediate **capability**.
    3. The strike was the **"last window of opportunity"** to prevent a future disaster.
- **Diplomatic Context:** The strikes occurred while **Oman-mediated nuclear negotiations** were active in Geneva, challenging the claim that military force was a last resort.

2. International Humanitarian Law (IHL) and Protection of Schools

IHL governs *jus in bello* (conduct during war), regardless of how the conflict started.

- **Principle of Distinction:** Requires a clear separation between military targets and **civilian objects** (schools, hospitals). The Minab girls' school is a protected civilian object.
- **Loss of Protection:** A school only loses its protected status if it is being used for **military purposes**. To date, no evidence has surfaced that the Minab school was being used as a base or command post.
- **Legal Protections:** The **Convention on the Rights of the Child (1989)** and the **Rome Statute (1998)** define the intentional targeting of educational buildings as a **war crime**.
- **Proportionality and Collateral Damage:** If the school was hit "incidentally," the attack remains unlawful if the anticipated civilian harm is excessive relative to the direct military advantage gained.

3. UNCLOS and Naval Warfare



The sinking of the **IRIS Dena** in the Indian Ocean near Sri Lanka raises maritime legal concerns.

- **UNCLOS (1982):** Known as the "Constitution of the Oceans," it protects **freedom of navigation** on the high seas during peacetime. However, it does not explicitly regulate belligerent conduct during an active armed conflict.
- **Law of Naval Warfare:** Under this framework, a belligerent warship is generally a **legitimate military target**. However, some legal scholars contend that force used against a warship on the high seas is **"presumptively unlawful"** unless justified under Article 51.
- **Sanctions vs. Military Action:** While the IRIS Dena was under US sanctions for UAV supplies, sanctions only restrict **business activities** and do not provide a legal basis for a kinetic military attack. The ship was on a **peaceful passage** following the International Fleet Review 2026.

Legal Comparison of 2026 Military Actions

Legal Principle	Application to 2026 Incidents	Legal Standing
UN Charter Art. 51	Requires an "actual armed attack"	**Contested** (No prior attack)
Anticipatory Defence	Justification for pre-emptive strikes	**Controversial** (Scholar disagreement)
IHL Distinction	Mandatory protection for the Minab school	**Likely Violation** (Civilian target)
UNCLOS / Naval Law	Freedom of navigation vs. Legitimate target	**Challenged** (High seas attack)
Rome Statute	Prosecution for targeting educational sites	**Applicable** (Potential War Crimes)

7th Joint Committee Meeting : India–Japan CEPA

Why in News?

The **7th Joint Committee Meeting** under the **India–Japan Comprehensive Economic Partnership Agreement (CEPA)** was held in **Tokyo** in March 2026. The meeting focused on reviewing implementation issues, enhancing bilateral economic engagement, and coordinating preparations for the upcoming **14th WTO Ministerial Conference** in Yaoundé, Cameroon.

India–Japan CEPA: Overview

- **Effective Date:** The agreement came into effect in **August 2011**.

- **Scope:** A landmark bilateral trade pact covering trade in **goods, services, investment, intellectual property rights (IPR)**, and the movement of natural persons.
- **Tariff Elimination:** The pact envisaged the abolition of tariffs on **over 94%** of traded items over a 10-year period.

Current Economic Relations (2023–2026)

- **Bilateral Trade Volume (2023-24):** Total trade stood at **USD 22.85 billion**.
    - **Japanese Exports to India:** USD 17.69 billion.
    - **Indian Exports to Japan:** USD 5.15 billion.
- **Trade Balance:** India maintains a substantial **trade deficit** with Japan.
- **Trade Rankings:** * India is Japan's **18th** largest trading partner (1.4% share).
    - Japan is India's **17th** largest trading partner (2.1% share).

Foreign Direct Investment (FDI)

- **Cumulative Inflows:** From 2000 to December 2024, Japanese FDI into India reached approximately **USD 43.2 billion**.
- **Global Rank:** Japan is the **5th largest source** of FDI for India.
- **Key Sectors:** Investment is primarily concentrated in:
    - Automobile and Electrical Equipment
    - Telecommunications and Chemicals
    - Financial Services (Insurance) and Pharmaceuticals

Strategic Discussions

- **Business Environment:** Both nations discussed streamlining customs procedures and improving the ease of doing business to bridge the trade gap.
- **Global Cooperation:** Coordination on multilateral trade issues ahead of the **WTO Ministerial Conference** to ensure a balanced global trade narrative.

11th Raisina Dialogue 2026

Why in News?

The **11th edition** of the **Raisina Dialogue** concluded in New Delhi (March 5–7, 2026), marking the landmark launch of the **Raisina Science Diplomacy Initiative (SDI)**. This initiative aims to integrate technological innovation directly with global foreign policy, focusing on the strategic governance of emerging technologies.

Major Takeaways from Raisina Dialogue 2026

Raisina Science Diplomacy Initiative (SDI)

- **Objective:** A new framework launched to weave science and technology into the fabric of international relations.
- **Key Focus:** AI governance, securing semiconductor supply chains, and sharing **India's Digital Public Infrastructure (DPI)** with developing nations to promote digital inclusion.

Shift to a Multipolar World

- **Role of Global South:** The dialogue acknowledged the rising influence of the **Global South** in shaping the future international system.
- **Plurilateralism:** Emerging "South-South" partnerships and flexible groupings are increasingly replacing traditional, slow-moving multilateral institutions.
- **India's Strategy:** Engagement through **BRICS**, the **India-Middle East-Europe Economic Corridor (IMEC)**, and the **India-France-UAE (UFI) Trilateral** positions India as a vital "Vishwa Mitra" (friend to the world).

Reformed Multilateralism

- **UNSC Reform:** Participants made strong calls to reform the **United Nations Security**

Council to better reflect 21st-century realities.

- **India's Role:** There was growing international support for India's permanent membership in the UNSC, with Chief Guest **Alexander Stubb (President of Finland)** explicitly backing India's seat.

Maritime and Economic Security

- **Supply Chains:** Emphasis was placed on protecting global supply chains and undersea communication cables.
- **Strategic Routes:** Discussions focused on securing maritime routes amid rising tensions in the **Indian Ocean, Red Sea, and Indo-Pacific**.

Raisina Dialogue: Overview

- **About:** Launched in **2016**, it is India's premier conference on geopolitics and geo-economics.
- **Organizers:** The **Ministry of External Affairs (MEA)** in collaboration with the **Observer Research Foundation (ORF)**.
- **Global Standing:** It is comparable to the **Munich Security Conference** (Germany) and the **Shangri-La Dialogue** (Singapore).
- **2026 Theme: "Samskara – Assertion, Accommodation, Advancement."**
    - **Assertion:** Nations defining their identity and interests.
    - **Accommodation:** Embracing diversity and managing differences.
    - **Advancement:** Progress through innovation and collective growth.

The Six Pillars of 2026

1. **Contested Frontiers:** Power, Polarity, and Periphery.
2. **Repairing the Commons:** New Groups, New Guardians, New Avenues.
3. **White Whale:** The Pursuit of Agenda 2030.
4. **The Eleventh Hour:** Climate, Conflict, and the Cost of Delay.
5. **Tomorrowland:** Towards a Tech-topia.
6. **Trade in the Time of Tariffs:** Recovery, Resilience, Reinvention.

India–Finland Strategic Partnership : Visit of President Alexander Stubb

Why in News?

The **President of Finland, Alexander Stubb**, visited India as the **Chief Guest** at the **11th Raisina Dialogue (2026)**. During this state visit, bilateral relations were formally elevated to a **"Strategic Partnership in Digitalization and Sustainability,"** marking a new era of high-tech and green cooperation between the two nations.

Note :

The visit resulted in key agreements across migration, green energy, and cutting-edge technologies like **6G and AI**. Both nations are committed to doubling trade by **2030** and will co-host the **World Circular Economy Forum (WCEF) 2026** in India. While the partnership is thriving in technology, challenges remain regarding trade imbalances and differing geopolitical stances on Russia.

Key Outcomes of the Presidential Visit

- **Elevation of Ties:** Upgraded to a **Strategic Partnership** focused on a digital and green future.
- **Consular Dialogue:** Established a dedicated mechanism between Foreign Ministries to handle mobility, visas, and citizen welfare.
- **Migration and Mobility Partnership:** An MoU to streamline the movement of skilled Indian tech professionals to Finland.
- **Environmental Renewal:** A renewed pact covering **bioenergy, green hydrogen, and waste-to-energy** solutions.

Digitalization, Technology, and Innovation

- **6G Research:** A Joint Task Force was formed linking the **University of Oulu** with the **Bharat 6G Alliance**.

- **Emerging Tech Group:** A new working group will focus on **High-Performance Computing (HPC), Quantum Computing, and AI**.
- **Startup Corridor:** Connectivity between India's **Startup Mahakumbh** and Finland's **Slush** event to foster entrepreneurial exchange.
- **Engineering Marvels:** Finnish expertise contributed to India's **Chenab Bridge** (world's highest railway bridge) and the **Assam bamboo-to-bioethanol refinery**.

Trade and Economic Relations

- **Current Trade (2023-24):** India face a **trade deficit of USD 330.83 million**, with imports (industrial machinery, paper) outweighing exports (pharma, textiles).
- **Export Shift:** A surge in **heterocyclic compounds** (used in specialty chemicals) saw them rise to **28%** of India's exports to Finland by 2025.
- **2030 Target:** Aiming to **double bilateral trade** by leveraging the **India–EU Free Trade Agreement**.

Challenges and Strategic Differences

- **Logistical Gaps:** Weak direct connectivity between Delhi and Helsinki increases freight costs and hinders B2B integration.
- **The Russia Factor:** Finland's **2023 entry into NATO** and its support for sanctions contrast with India's policy of **Strategic Autonomy** and its continued ties with Moscow.
- **Land Rights:** In agriculture, the lack of land titles for women (who form 70% of the workforce) limits their access to formal credit.

Key Facts About Finland

- **Geography:** Known as the **"Land of a Thousand Lakes"** (over 188,000 lakes); 70% of the country is covered by **Taiga forests**.
- **Governance:** Ranked the **world's happiest country** for eight consecutive years (2018–2025).
- **Arctic Role:** A permanent member of the **Arctic Council** and a leader in circular economy practices (first to adopt a national roadmap in 2016).
- **Sustainability:** Target to achieve **carbon neutrality by 2035**.

India's Stance on IEA's Strategic Petroleum Reserve (SPR) Release

Why in News?

India has decided **not to participate** in a coordinated release of **Strategic Petroleum Reserves (SPR)** proposed by the **International Energy Agency (IEA)**. While the IEA aims to stabilize global oil markets amid the escalating Middle East conflict, India has prioritized its domestic energy security over international market intervention.

Background and Context

- **Price Surge:** Global crude prices surpassed **USD 119 per barrel** in March 2026, driven by supply cuts and fears of shipping disruptions in the Persian Gulf.
- **India's Rationale:** Adopting an **"India First"** policy, the government stated that its reserves are a safeguard against actual physical supply disruptions at home, rather than a tool to manage global price volatility.
- **Shift in Strategy:** This marks a departure from **2021**, when India joined a US-led initiative by releasing 5 million barrels of crude to calm international markets.

India and the IEA

- **Membership Status:** India is an **Associate Member** (not a full member) of the IEA.
- **Obligations:** Unlike full members, India has **no binding mandate** to comply with IEA calls for coordinated emergency stock releases.

Strategic Petroleum Reserves (SPR): Overview

- **Definition:** Emergency crude oil stockpiles maintained by nations to mitigate sudden supply shocks.
- **IEA Requirement:** Full member countries are required to hold oil stocks equivalent to at least **90 days of net imports**.

- **Management:** In India, these are managed by the **Indian Strategic Petroleum Reserves Limited (ISPRL)** under the Ministry of Petroleum and Natural Gas.

India's Current Storage Capacity

India is the **world's 3rd-largest** oil importer and consumer. Its current operational capacity stands at **5.33 Million Metric Tonnes (MMT)** across three underground rock cavern sites:

1. **Visakhapatnam, Andhra Pradesh:** 1.33 MMT
2. **Mangaluru, Karnataka:** 1.5 MMT
3. **Padur, Karnataka:** 2.5 MMT

- **Current Coverage:** These caverns provide approximately **9.5 days** of crude oil requirements.

Expansion Plans and Total Buffer

- **Phase II Expansion:** The government has approved an additional **6.5 MMT** of storage:
  - **Chandikhole, Odisha:** 4 MMT
  - **Padur, Karnataka (Expansion):** 2.5 MMT
- **Future Sites:** Planning is underway for new facilities in **Bikaner** (Rajasthan), **Rajkot** (Gujarat), and **Bina** (Madhya Pradesh).
- **Combined Buffer:** When adding commercial inventories held by oil companies to the SPRs, India currently possesses a total energy buffer of approximately **74 days**.

Russia's 'Dark Fleet' and the Aqua Titan Diversion (2026)

Why in News?

In **March 2026**, a sanctioned Russian oil tanker, the **Aqua Titan** (formerly *Lang Ya*), made a sudden mid-route U-turn in Southeast Asian waters. Originally destined for Rizhao, China, the vessel redirected to India and docked at the **New Mangalore Port** on March 22, 2026. This diversion occurred after the U.S. administration granted India a **30-day temporary waiver** to purchase Russian energy to stabilize global supplies amid the escalating conflict in West Asia and the blockade of the Strait of Hormuz.

Note

The **Aqua Titan** is a prominent member of the global **"Dark Fleet"** (or shadow fleet)—an armada of aging, often uninsured vessels used to bypass international sanctions. Its arrival in India highlights the complex geopolitical tightrope New Delhi is walking. While India had reduced Russian crude imports to **19.3% in January 2026** (the lowest since 2022) to comply with international pressure, the recent Middle East crisis has forced a temporary shift back to Russian supplies to prevent a domestic energy shock.

Understanding the 'Dark Fleet'

The dark fleet refers to a growing network of commercial vessels (estimated at over 600 globally) that operate outside standard maritime norms to transport sanctioned oil from Russia, Iran, and Venezuela.

- **Modus Operandi:**
  - **AIS Manipulation:** Ships "go dark" by disabling their **Automatic Identification System** transponders to evade satellite tracking.
  - **Ship-to-Ship (STS) Transfers:** Engaging in risky "bunkering" in international waters to mix sanctioned oil with non-sanctioned crude, masking its origin.
  - **Flags of Convenience:** Registering in countries with lax oversight (e.g., Cameroon, Panama) and using complex web of **shell companies** to hide ownership.
- **The "Genuine Link" Gap:** Under **UNCLOS (United Nations Convention on the Law of the Sea)**, a ship must have a "genuine link" to its flag state. However, shadow fleets exploit regulatory grey zones in the high seas where enforcement is limited.

Concerns and Strategic Risks

- **Environmental Hazard:** Most dark fleet vessels are **over 15 years old** and lack standard Protection and Indemnity (P&I)

insurance. A spill in the Indian Ocean would leave the coastal state (India) with no clear path for financial compensation.

- **Geopolitical Compliance:** While the U.S. granted a temporary waiver in March 2026, consistent reliance on the shadow fleet exposes Indian refiners like **MRPL** and **Reliance** to future secondary sanctions.
- **Transparency Deficit:** Data from **S&P Global** and **CREA** shows that in 2025, sanctioned "shadow" tankers carried **56% to 65%** of all Russian crude exports, with India remaining a top-three buyer.

The 2026 Energy Context

- **Hormuz Blockade:** With the **Strait of Hormuz** currently a conflict zone, India has been forced to diversify. In March 2026, nearly **70%** of India's crude imports were sourced from outside the Gulf to mitigate supply risks.
- **Tariff Fluctuations:** India was slapped with **25% U.S. tariffs** in late 2025 for buying Russian crude, which were only revoked in February 2026 after an interim trade agreement and India's commitment to "good actor" status.
- **Economic Advantage:** Despite the risks, Russian Urals crude remains attractive due to significant discounts, helping cushion Indian consumers from the global price surge (currently **$125+ per barrel**).

Conclusion

The arrival of the **Aqua Titan** in Mangaluru is a symbol of the "energy pragmatism" India is forced to employ. While the dark fleet poses significant environmental and legal risks, it currently serves as a critical safety valve against the total paralysis of India's energy security during the West Asian war. However, for long-term stability, India's push for **supply chain diversification** and legal oversight of maritime "flags of convenience" remains the only sustainable path forward.

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EDITORIALS

Crux of The Hindu & Indian Express

International Issues

India Assumes BRICS Presidency 2026: STI and the Global South

Why in News?

India has officially assumed the **BRICS Presidency for 2026** under the theme **"Building for Resilience, Innovation, Cooperation and Sustainability."** This tenure marks a pivotal moment as the bloc transitions into **BRICS+**, integrating new members like Egypt, Ethiopia, Iran, the UAE, and Indonesia. India's chairmanship is set to prioritize **Science, Technology, and Innovation (STI)**, specifically focusing on Artificial Intelligence (AI) governance and the sharing of **Digital Public Infrastructure (DPI)**.

Note

BRICS (originally Brazil, Russia, India, China, and South Africa) has evolved from an economic catch-phrase into a formidable geopolitical bloc representing **40% of global GDP**. The 2026 Indian presidency aims to shift the focus from traditional diplomatic cooperation to **deep-tech collaboration**. By leveraging its "India Stack" (UPI, Aadhaar), New Delhi seeks to position BRICS as a leader in **techno-multipolarity**, offering the Global South an alternative to Western-centric technological frameworks.

Evolution of STI Cooperation in BRICS

- **The Foundation (2011–2015):** Formally recognized in the **Sanya Declaration (2011)**; the **Young Scientist Forum (2015)** was established to build a grassroots research network.

- **Technology Transfer (2017–2020):** The **BRICS Technology Transfer Centre (TTC)** was created to link startups and science parks across borders.
- **Space & Satellites (2021):** India spearheaded the **Remote Sensing Satellite Constellation** agreement, allowing members to share earth observation data independently of Western agencies.
- **Frontier Tech (2025–2026):** The **Rio Declaration (2025)** elevated AI to a central pillar, moving toward unified ethical standards and development-oriented AI.

India's Vision for 2026: Key Strategic Pillars

1. **Digital Public Infrastructure (DPI):** India plans to offer its modular DPI architectures (for digital ID and payments) as **open-source repositories** for newer members to adopt without massive R&D costs.
2. **BRICS Mega-Science Consortium:** Advocating for shared large-scale research facilities (modeled after CERN) to prevent "brain drain" from the Global South to the West.
3. **Climate Tech & Green Hydrogen:** Leveraging the **Global Biofuels Alliance** to create a BRICS Clean Energy R&D wing, focusing on battery storage and electrolyzers.
4. **Health Grid:** Proposing a **BRICS Digital Health Grid** for interoperable health records and telemedicine, utilizing India's experience with the **Ayushman Bharat Digital Mission**.
5. **AI Governance:** Establishing a joint working group to ensure BRICS acts as a **rule-maker** in AI ethics and data sovereignty.

Challenges to Deeper Collaboration

- **R&D Asymmetry:** China's massive R&D expenditure dwarfs other members, creating a risk of technological dependence rather than mutual co-creation.
- **Geopolitical Friction:** Strategic tensions, particularly between **India and China**, limit deep cooperation in sensitive dual-use areas like 5G/6G and semiconductors.
- **Institutional Voids:** BRICS lacks a permanent secretariat; the rotating presidency model often leads to a "loss of momentum" for multi-year projects.
- **Funding Gaps:** The **New Development Bank (NDB)** remains focused on physical infrastructure (roads/bridges) rather than high-risk deep-tech or scientific research.

Proposed Reforms

- **Permanent STI Secretariat:** To ensure continuity and manage long-term joint missions.
- **Dedicated Innovation Fund:** A specific window within the NDB or a new fund to pool resources for joint patents and deep-tech incubation.
- **Private Sector Integration:** Moving beyond state-to-state MoUs to involve venture capital and "Big Tech" players from within the BRICS nations.
- **iBRICS Platform:** A B2B tech corridor to help startups in one BRICS nation scale in another.

Conclusion

India's 2026 presidency is a unique window of opportunity to transform BRICS from a political talk-shop into a **technological powerhouse**. By focusing on DPI and "Paired Linkages" between advanced and emerging innovators, India can lead the bloc toward a future where the Global South is no longer a "rule-taker" but a primary architect of the global digital order.

Israel-Hezbollah Conflict : Strategic Importance of the Litani River and Tyre

Why in News?

The **Israel–Hezbollah escalation** has intensified in early **2026**, with Israeli military operations focusing heavily on **Southern Lebanon**. A primary strategic objective for Israel is the establishment of a **security**

buffer zone extending up to the **Litani River**. Simultaneously, heavy bombardment in the region has raised global alarms over the potential destruction of **Tyre**, an ancient Phoenician city and a UNESCO World Heritage site.

Note

The conflict is centered on the enforcement of **UNSC Resolution 1701**, which mandates that no armed groups (specifically Hezbollah) should operate between the **Blue Line** and the **Litani River**. While Israel views this 30-km stretch as essential to stop rocket fire, the humanitarian and cultural cost is rising. **Tyre**, once the maritime hub of the Phoenician Empire, now sits in the crosshairs, threatening millennia of Mediterranean history.

The Litani River: A Strategic Boundary

- **Geography:** The longest river entirely within Lebanon, originating in the **Beqaa Valley** and draining into the **Mediterranean Sea** near Tyre.
- **The "Blue Line" Buffer:** The river runs roughly parallel to the UN-recognized border. Israel seeks to push Hezbollah forces north of this line to prevent cross-border incursions.
- **UNSC Resolution 1701 (2006):** Following the 2006 war, this resolution demanded that the area south of the Litani be restricted to the **Lebanese Armed Forces** and **UNIFIL** (UN Interim Force in Lebanon) only.
- **Water Security:** Beyond military strategy, the Litani is Lebanon's most vital source for **hydroelectric power** and irrigation, making its control a matter of national survival.

The City of Tyre: A UNESCO Heritage at Risk

- **Historical Significance:** Known as **Sour** in Arabic, Tyre was the premier **Phoenician maritime power** (1500–300 BCE) and the birthplace of the alphabet's spread across the Mediterranean.
- **The Tyrian Purple:** The city was world-famous in antiquity for its **purple dye**, extracted from **Murex sea snails**, which became a symbol of royalty and wealth.
- **Alexander's Legacy:** In 332 BCE, **Alexander the Great** famously built a massive mole (causeway) to conquer the island city, permanently transforming it into a **peninsula**.
- **Archaeological Wealth:** As a UNESCO site since 1984, it houses remarkably preserved **Roman hippodromes**, triumphal arches, and colonnaded roads that are currently threatened by airstrikes.

Key Geopolitical Terms

- **Blue Line:** The 120-km border fence established by the UN in 2000 to confirm the withdrawal of Israeli forces from Lebanon.
- **UNIFIL:** The UN peacekeeping mission tasked with monitoring the cessation of hostilities and assisting the Lebanese Army in the south.
- **Buffer Zone:** A neutral area created between hostile forces to serve as a security shield.

Conclusion

The battle for the **Litani River** is not just a territorial dispute but a struggle over the implementation of international law (Resolution 1701). However, the inclusion of **Tyre** in the combat zone adds a layer of "cultural catastrophe" to the ongoing war. In 2026, the challenge for the international community is to ensure that the search for a **security zone** does not lead to the permanent erasure of one of humanity's oldest urban civilizations.

India's WTO Standoff : The China-Backed Investment Facilitation (IFD) Agreement (2026)

Why in News?

In **early 2026**, India, supported by **South Africa, Türkiye**, and approximately 37 other nations, reiterated its firm opposition at the **World Trade Organization (WTO)** against the **Investment Facilitation for Development (IFD) Agreement**. Despite the agreement being backed by over 120

members (nearly **75% of WTO membership**), India has used its "veto" power to block the deal from being formally integrated into the WTO legal framework, sparking a debate on the future of multilateralism.

Note :

The IFD is a China-led **plurilateral initiative** aimed at streamlining global FDI procedures by cutting red tape. India opposes it on the grounds that the WTO's mandate is restricted to **trade**, not **investment**. New Delhi views the IFD as a "non-trade issue" being pushed through the back door, which could erode the policy sovereignty of developing nations and indirectly strengthen China's **Belt and Road Initiative (BRI)**. Strategically, India is using its opposition as a bargaining chip to secure a **Permanent Solution for Public Stockholding (PSH)** for its food security programs.

What is the Investment Facilitation for Development (IFD)?

- **Origin:** Launched in 2017 by a coalition of developing and least-developed countries (LDCs) led by **China**.
- **Objective:** To create a global, transparent, and predictable environment for **Foreign Direct Investment (FDI)** by simplifying bureaucratic hurdles.
- **Plurilateral Nature:** Unlike "multilateral" deals that apply to all, this is a **"coalition of the willing."** It is legally binding only on those who sign it, but proponents want it housed under the WTO umbrella (Annex 4 of the Marrakesh Agreement).
- **Exclusions:** It specifically excludes high-conflict areas like **Market Access** (opening sectors), **Investment Protection**, and the controversial **Investor-State Dispute Settlement (ISDS)**.

India's Core Concerns

- **Mandate Overreach:** India argues that the WTO was created to regulate the trade of **goods and services**, not to govern how a sovereign nation manages its investment inflows.
- **Erosion of Consensus:** The WTO operates on the principle of **"One Member, One Vote"** and consensus. India fears that "plurilateralism" allows a group of countries to bypass the collective voice of the Global South, creating a **"two-tier" WTO**.
- **Policy Sovereignty:** The IFD proposes independent screening bodies for FDI. India is concerned this will limit its ability to regulate sensitive sectors like **Atomic Energy and Defense** or implement local development requirements.
- **The "China Angle":** Out of the 128 supporters, **98 are BRI members**. India suspects the IFD will standardize regulations in a way that favors China's massive overseas infrastructure investments, particularly in the **Indian Ocean Region**.

Strategic Linkage: The PSH Issue

India's opposition is widely seen as a **tactical lever**. New Delhi has signaled that it will not allow "new issues" like IFD or E-commerce into the WTO until "old issues" are resolved:

- **Public Stockholding (PSH):** India demands a permanent legal shield for its **Minimum Support Price (MSP)** and food subsidy schemes (like **PMGKAY**).
- **The Peace Clause:** While the 2013 Bali "Peace Clause" protects India from being sued for exceeding subsidy limits, it is temporary and laden with heavy notification requirements. India wants a **Permanent Solution** as a prerequisite for any discussion on IFD.

Comparison: Multilateral vs. Plurilateral

Feature	Multilateral Agreement	Plurilateral (IFD Model)
Applicability	All WTO Members.	Only signatories.
Consensus	Requires 100% agreement for adoption.	Pushed by a "Coalition of the Willing."
India's View	Maintains the "Global South" voice.	Risks sidelining developing nations.

The Path Forward (2026–27)

1. **Doha Agenda First:** India insists that the WTO must fix **agricultural subsidies** and restore the **Dispute Settlement Appellate Body** before adopting non-mandated treaties.
2. **Bilateral Alternatives:** Instead of a rigid global IFD, India prefers negotiating **Bilateral Investment Treaties (BITs)** tailored to its specific security and economic needs.

3. **Coalition Building:** India is actively engaging the **African Union** to prevent the "fragmentation" of the WTO into exclusive clubs of wealthy or China-aligned nations.

Conclusion

India's stance on the IFD Agreement is a calculated move to protect the **multilateral ethos** of the WTO. By blocking a China-led initiative, New Delhi is not just defending its regulatory autonomy but also championing the cause of the **Doha Development Agenda**. In 2026, the IFD remains a symbol of the shifting power dynamics at the WTO, where the battle for a "Permanent Solution" on food security remains the ultimate priority for the Indian government.

World Bank : Crisis Response and Global Financial Architecture (2026)

Why in News?

In **April 2026**, the **World Bank** announced an emergency fast-track aid package for developing nations struggling with the fallout of the **Middle East conflict**. The Bank warned that surging **commodity prices** (oil and grain) and maritime logistical delays are severely straining emerging markets. To mitigate this, the World Bank is deploying its **Crisis Toolkit**, combining immediate financial relief with private sector support to protect jobs and stabilize regional growth.

Note

The World Bank is a pillar of the global financial system, providing loans, grants, and technical expertise to low- and middle-income nations. Established in **1944** at the **Bretton Woods Conference**, it has evolved from post-war reconstruction to a mission of **eradicating extreme poverty** and promoting shared prosperity. As of 2026, the Bank is increasingly focused on "intertwined challenges," such as climate resilience and pandemic preparedness, while managing a diverse portfolio across **189 member countries**.

The World Bank Group (WBG): 5 Specialized Institutions

The Group consists of five organizations that work together to provide a comprehensive suite of financial and advisory services:

- **IBRD (International Bank for Reconstruction and Development):** Lends to creditworthy **middle-income** and low-income countries.
- **IDA (International Development Association):** Provides interest-free loans (credits) and grants to the **poorest nations**.
    - *Note:* The IBRD and IDA together are formally known as the **"World Bank."**
- **IFC (International Finance Corporation):** The largest global development institution focused exclusively on the **private sector**.
- **MIGA (Multilateral Investment Guarantee Agency):** Offers political risk insurance to encourage **Foreign Direct Investment (FDI)** in developing states.
- **ICSID (International Centre for Settlement of Investment Disputes):** An arbitration body for investment disputes.
    - *Strategic Fact:* **India** is a member of four of these institutions but is **not a member of ICSID**.

Key Functions and Indian Context

- **Project Financing:** Funding for critical infrastructure and social programs. For example, the World Bank recently provided an **USD 830 million** loan for India's **PM-SETU Program** to modernize ITIs and boost youth employability.
- **Research and Data:** It is the primary author of influential global reports, including the **World Development Report** and **Global Economic Prospects (GEP)**.
- **Policy Advice:** Assisting governments in fiscal reforms, public administration, and digital transformation.
- **Membership Rule:** A country must be a member of the **International Monetary Fund (IMF)** before it can join the World Bank. India is a founding member of both.

Comparison: World Bank vs. IMF

Feature	World Bank	IMF
Primary Goal	Long-term **development** and poverty reduction.	Global **financial stability** and monetary cooperation.
Core Activity	Financing schools, roads, and green energy.	Stabilizing currencies and fixing **Balance of Payments (BoP)**.
Loan Tenure	Long-term (**15 to 40 years**).	Short to Medium-term (**3 to 5 years**).
Funding Source	Sells **bonds** to private investors on global markets.	Funded by **quotas/subscriptions** from member nations.
Leadership	Historically led by a **US citizen**.	Historically led by a **European**.
Voting Power	Based on **Capital Shares** (US holds ~15.85%).	Based on **Quotas** (US holds ~16.5%).

Rising Challenges in 2026

1. **The Debt Trap:** Many low-income countries are facing "debt distress" due to high global interest rates, complicating the World Bank's lending capacity.
2. **Climate Finance:** There is growing pressure for the Bank to pivot more aggressively toward **Climate Adaptation**, requiring an estimated USD 2.4 trillion annually for developing nations.
3. **Geopolitical Friction:** The "Middle East Crisis" has forced the Bank to activate its **Pre-arranged Financing Facilities** to prevent a total economic collapse in neighboring vulnerable economies.

Conclusion

The **World Bank** in 2026 remains the "Lender of Last Resort" for global development. While its roots are in 20th-century reconstruction, its future is defined by its ability to manage 21st-century "polycrisis"—from war-driven inflation to climate-induced disasters. For India, the World Bank remains a vital partner in large-scale structural programs like **PM-SETU**, ensuring that economic growth translates into tangible human development.

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Indian Polity & Governance

Allahabad High Court and the Scrutiny of "Bulldozer Justice"

Why in News?

The **Allahabad High Court** has raised **constitutional concerns** over the growing practice of **"bulldozer justice"** in Uttar Pradesh. This refers to the demolition of properties linked to accused persons shortly after a **First Information Report (FIR)** is filed, often bypassing established legal procedures.

1. Core Concerns Regarding "Bulldozer Justice"

- **Violation of Rule of Law:** Punitive demolitions subvert the constitutional sequence of **Allegation, Investigation, Adjudication, and Punishment**. The executive cannot act as judge, jury, and executioner.
- **Infringement of Article 21:** The **Right to Life** includes the right to a dignified shelter. Sudden evictions destroy a family's socioeconomic security.
- **Infringement of Article 300A:** No person shall be deprived of their property **except by the authority of law**, requiring a fair and reasonable procedure.
- **Collective Punishment:** Demolishing shared homes punishes innocent family members for an individual's alleged crime, violating the principle of individual liability and the **Geneva Convention 1949**.
- **Presumption of Innocence:** Destroying property immediately after an accusation effectively eliminates the necessity of a trial and denies the right to a fair hearing.

2. Supreme Court Guidelines (November 2024)

Invoking **Article 142**, the Supreme Court issued mandatory safeguards to be followed before any property demolition:

- **Mandatory Notice:** Authorities must serve a prior written notice of at least **15 days** via registered post.
- **Right to be Heard:** The affected party must be granted a personal hearing to contest the action.
- **Reasoned Order:** Authorities must issue a written order explaining why demolition is the **only viable option**.
- **Accountability:** Proceedings must be **video-recorded**. Officials violating these rules face **contempt of court** and personal financial liability for restitution.
- **Exceptions:** These directions do not apply to unauthorized structures in **public places** (roads, footpaths, water bodies) or cases with a specific court order for demolition.

3. Judicial Pronouncements and Rights

- **Maneka Gandhi Case (1978):** Established that the "procedure established by law" must be **just, fair, and reasonable**.
- **Olga Tellis Case (1985):** Affirmed that **Article 21** includes the right to livelihood and shelter.
- **KT Plantation Case (2011):** Ruled that deprivation of property under **Article 300A** must follow a fair and reasonable legislation.

4. Measures to Curb the Practice

- **Independent Property Tribunals:** Establishing quasi-judicial bodies to vet demolition orders before execution to ensure objective review.
- **Proportionality Doctrine:** Demolition should be the **absolute last resort**, used only when a structure poses a public hazard and cannot be regularized through penalties.
- **UN Guidelines:** Statutory adoption of the **UN Basic Principles (2007)**, which prohibit forced evictions as a punitive measure.
- **Electoral Reforms:** Amending the **Representation of the People Act, 1951** to classify the ordering of extrajudicial demolitions by elected representatives as a **"corrupt practice."**

Summary of Constitutional Impacts

Right / Principle	Constitutional Basis	Impact of "Bulldozer Justice"
Due Process	Article 21	Subverted by executive-led punishment
Right to Property	Article 300A	Violated by arbitrary deprivation
Equality	Article 14	Selective targeting of specific groups
Separation of Powers	Basic Structure	Executive encroaches on Judicial domain

Conclusion

Upholding the **Rule of Law** requires that criminal justice remains the exclusive domain of the courts. By enforcing professional penalties on errant officials and ensuring strict adherence to notice and hearing requirements, the state can prevent the misuse of demolition powers and preserve the nation's democratic fabric.

Governors : New Appointments and Constitutional Framework

Governor selection in Indian Constitution	Origin	1. **Draft constitution** Proposed **Direct Election** 2. Based on **Universal Adult Franchise**
	Final Decision	1. Adoption of the appointment system by the President 2. Election Incompatible with parliamentary system in states 3. May lead to Potential conflict with chief minister
	Reasons against Direct Election	1. The Governor's role is **nominal**. **Direct election** is **unnecessary**. 2. Election will be based on **personal issue, not in national interest** 3. Elected governor **might not** remain **politically neutral** 4. Possible rise in separatist tendencies, not good for national unity 5. Presidential nomination **maintains central control** over states 6. Complications during general election in states 7. Likely election of **sub-optimal candidates** as political compromise
	Final Model adopted	1. **Rejection of American model** with direct election 2. **Adoption of Canadian Model** with central appointment

Why in News?

In **March 2026**, President Droupadi Murmu announced a major reshuffle of **Governors and Lieutenant Governors** across several states and Union Territories. Key changes include:

- **West Bengal: R.N. Ravi** (formerly Governor of Tamil Nadu) was sworn in as the 22nd Governor on **March 12, 2026**, succeeding C.V. Ananda Bose.
- **Tamil Nadu:** Kerala Governor **Rajendra Vishwanath Arlekar** assumed additional charge on **March 12, 2026**, to discharge the functions of the Governor of Tamil Nadu.
- **Delhi:** Former diplomat **Taranjit Singh Sandhu** was sworn in as the **23rd Lieutenant**

Governor (LG) of Delhi on **March 11, 2026**, replacing Vinai Kumar Saxena (who was moved to Ladakh).

1. Appointment and Tenure of the Governor

The office of the Governor is a vital constitutional link between the Union and the States.

- **Constitutional Basis:** * **Article 153:** Mandates a Governor for each state. The **7th Amendment (1956)** allows one person to serve multiple states.
    - **Article 155:** The Governor is appointed by the **President** by warrant under hand and seal.
- **Tenure (Article 156):** The Governor holds office during the **"pleasure of the President."** While the standard term is **5 years**, they can be removed or transferred at any time without specified grounds.
- **Qualifications (Article 157):** Must be an Indian citizen and at least **35 years old**.
- **Oath (Article 159):** Administered by the **Chief Justice of the concerned High Court** (e.g., Chief Justice Sujoy Paul for R.N. Ravi in West Bengal).

Governor	Lieutenant Governor
Governors are appointed for states	Lieutenant Governors are appointed for Union Territories.
Governors have authority over states with more autonomy	Lieutenant Governors oversee Union Territories under more central control.
Governors generally have more ceremonial roles	Lieutenant Governors, especially in Delhi, play a more active administrative role.
Governors act mostly on state cabinet advice	Lieutenant Governors have more extensive discretionary powers.
Governors' roles are defined under Articles 153 to Article 162 of the COI.	Lieutenant Governors roles under Articles 239 to Article 239AA of the COI.

2. Lieutenant Governors (LGs) and Administrators

The governance of Union Territories (UTs) is managed under **Part VIII** of the Constitution.

- **Article 239:** UTs are administered by the President through an **"Administrator."**
- **Designations:** * **LG:** Used in Delhi, Puducherry, J&K, Ladakh, and Andaman & Nicobar Islands.
    - **Administrator:** Used in Chandigarh, Lakshadweep, and Dadra & Nagar Haveli and Daman & Diu.
- **Delhi (Article 239AA):** Specifically designates the administrator as the **Lieutenant Governor**. Taranjit Singh Sandhu's 2026 appointment follows the standard procedure of Central Government recommendation.

3. Rationale for Appointment vs. Election

The Constituent Assembly chose the **Canadian model** (appointment) over the American model (election) for several reasons:

- **Stability:** To prevent power clashes between an elected Governor and an elected Chief Minister.
- **Neutrality:** An appointed head is better suited to act as a "neutral umpire" during political crises or hung assemblies.
- **National Unity:** Ensures the Centre has a representative to maintain the integrity and integration of the nation.

4. Key Commissions and Recommendations

Over decades, several commissions have suggested reforms to reduce friction between Governors and State Governments:

- **Sarkaria Commission (1983):** Recommended that the Governor should be an **eminent person from outside the state** and that the Chief Minister must be consulted before appointment.
- **Punchhi Commission (2007):** Proposed a formal **impeachment process** by the state legislature to remove the "pleasure of the President" doctrine and provide security of tenure.
- **Venkatachaliah Commission (2002):** Emphasized that Governors should normally complete their 5-year term to ensure administrative continuity.

Conclusion

The 2026 reshuffle underscores the President's power to reposition experienced administrators to meet shifting political and governance needs. While the appointment of **Taranjit Singh Sandhu** brings a seasoned diplomatic perspective to Delhi, the transfer of **R.N. Ravi** to West Bengal highlights the continuing strategic movement of constitutional heads in high-stakes states. These changes reinforce the role of the Governor as the "linchpin" of Indian federalism.

Lok Sabha Committee of Privileges: Reconstitution and Framework (2026)

Why in News?

In **March 2026**, Lok Sabha Speaker Om Birla officially reconstituted the **Committee of Privileges**, nearly two years into the tenure of the 18th Lok Sabha. The committee, which became effective on **March 3, 2026**, is chaired by senior BJP leader and former Union Law Minister **Ravi Shankar Prasad**. Its reconstitution follows significant parliamentary friction, including a breach of privilege notice against the Leader of the Opposition (LoP) concerning remarks made during the Budget Session.

1. Parliamentary Privileges: Constitutional Basis

Parliamentary privileges are the collective and individual rights that allow legislators to function without fear or external pressure.

- **Article 105:** Grants specific privileges to the **Parliament**, its members, and committees. This includes absolute freedom of speech and immunity from court proceedings for any statement or vote given in the House.
- **Article 194:** Provides identical privileges to **State Legislatures**, their members, and committees.
- **Uncodified Nature:** While some privileges are codified, many remain based on the conventions of the British House of Commons as they existed in 1950.

2. The Committee of Privileges

The committee acts as a semi-judicial body tasked with maintaining the dignity and authority of the House.

- **Composition:**
  - **Lok Sabha:** Consists of **15 members** nominated by the Speaker.
  - **Rajya Sabha:** Consists of **10 members** nominated by the Chairman (usually headed by the Deputy Chairman).
- **2026 Membership:** The current 15-member Lok Sabha panel includes **Ravi Shankar Prasad (Chairperson)**, Manish Tewari (INC), Manickam Tagore (INC), Jagdambika Pal (BJP), Kalyan Banerjee (TMC), and T.R. Baalu (DMK), among others.
- **Key Functions:**
  - Examines cases of **breach of privilege** or **contempt of the House** referred by the Speaker.
  - Has the power to summon witnesses, examine documents, and conduct formal inquiries.
  - Submits a report with recommendations for punitive action (e.g., warning, reprimand, or suspension).

3. Role in Defection and Disqualification

Beyond privilege matters, the committee plays a role in internal party discipline:

- **Tenth Schedule:** Under the anti-defection law, the Speaker may refer petitions for the disqualification of an MP to this committee for a **preliminary inquiry**.
- **Procedural Step:** The committee's findings are advisory; the final decision on disqualification rests solely with the Speaker/Chairman.

4. Rationale and Significance

- **Independence:** Ensures that the legislature remains independent from the executive and judiciary in its internal functioning.
- **Discipline:** Acts as a check against members who might obstruct parliamentary proceedings or cast reflections on the dignity of the House.
- **Accountability:** Provides a mechanism to hold external individuals (e.g., officials or citizens) accountable for actions that interfere with a member's duties.

Conclusion

The 2026 reconstitution of the Committee of Privileges restores a vital oversight mechanism that had been absent for nearly two years. As the 18th Lok Sabha navigates a highly polarized political environment, the committee's role in adjudicating "breach of privilege" claims will be central to maintaining parliamentary decorum. Its ability to act as a neutral arbiter will be tested as it takes up sensitive cases involving senior leadership from both the treasury and opposition benches.

Social Media Ban for Minors : State vs. Union Jurisdiction

Why in News?

The recent announcements by **Karnataka** and **Andhra Pradesh** to ban social media for minors have sparked a constitutional debate. While the states aim to address the mental health crisis among children, the authority to regulate the internet falls under the **exclusive jurisdiction** of the Union Government, leading to potential legal conflicts.

State Initiatives (March 2026)

- **Karnataka:** Announced a ban for all children **under 16** years of age during the 2026-27 state budget.
- **Andhra Pradesh:** Set a **90-day deadline** to implement a ban for children **under 13**, with a proposed "graded" approach for those aged 13 to 16.
- **Motivation:** Increasing concerns over digital addiction, cyberbullying, and negative psychological impacts on child development.

Constitutional Framework: The 7th Schedule

- **Union List (List I, Entry 31):** Exclusive power over "Posts and telegraphs, telephones, wireless, broadcasting and other like forms of communication" lies with the **Union Government**.
- **Governing Law:** The digital space in India is primarily governed by the Central **Information Technology Act, 2000**.
- **State Justification:** States may attempt to defend these bans by invoking subjects from the **State List** (List II) or **Concurrent List** (List III), such as:
    - Public Order
    - Public Health
    - Child Welfare

Key Challenges

- **Enforcement:** Since the Union Government controls the gateways and **Internet Service Providers (ISPs)**, a state-specific ban is technically difficult to enforce without Central cooperation.
- **Fundamental Rights:** Critics argue blanket bans may violate a child's **Freedom of Speech and Expression (Article 19(1)(a))** and the **Right to Information**.
- **Proportionality:** Any restriction must be "reasonable" under **Article 19(2)** and proportionate to the goal of protecting minors.

Global Precedents

The debate in India reflects an accelerating global trend toward digital containment for minors:

- **Australia:** Enacted a landmark nationwide ban for children **under 16** in late 2025.
- **Indonesia:** Imposed a nationwide ban for users **under 16** starting March 28, 2026.
- **Malaysia:** Announced plans to implement a similar ban for those **under 16** by the end of 2026.
- **Europe:** Countries like **France** (under 15) and **Norway** (considering 15) are moving toward stricter age limits.

Conclusion

The simultaneous moves by Karnataka and Andhra Pradesh mark a turning point in Indian federalism regarding digital rights. The resolution of this jurisdictional overlap will likely require intervention by the **Supreme Court** or a unified policy framework from the Central Government.

Protocol for Receiving the President of India

Why in News?

A political controversy has surfaced following the **President's** expressed displeasure regarding the absence of the **Chief Minister** and state ministers during a reception in West Bengal. The incident has led to allegations of **protocol breaches** and sparked a debate over the traditional conventions governing the reception of the Head of State.

Precedence and the 'Blue Book'

- **National Table of Precedence:** The **President of India** holds the **first rank** in the country. All visits are governed by the highest level of security and logistical rigor.
- **The Blue Book:** A **confidential document** authored by the **Union Ministry of Home Affairs**. It serves as the definitive manual for managing the visits of the President, Vice-President, and Prime Minister.
- **Custodians:** The manual is maintained by the **District Magistrate (DM)** and the **District Police Chief**, who ensure all security and ceremonial mandates are met.

Established Conventions for Reception

- **Arrival and Departure:** Standard protocol dictates that the **Governor** and the **Chief Minister** should personally welcome the President upon arrival (at airports, stations, or entry points) and be present to see them off at departure.
- **Delegation:** If the Chief Minister is personally unavailable, they may **designate a senior minister** to represent the state government and receive the dignitary.
- **Advance Approval:** The President's office must approve a formal list of all individuals scheduled to meet or receive the visiting dignitary in advance.

Protocol Breach

- **Definition:** Any unauthorized deviation from the **Blue Book** procedures or the pre-approved list of attendees is officially categorized as a **breach of protocol**.
- **Sensitivity:** Because the President represents the sovereignty of the nation, adherence to these ceremonies is viewed as a matter of constitutional respect rather than mere administrative routine.

Removal Process of the Chief Election Commissioner (CEC)

Why in News?

As of **March 2026**, opposition parties within the **INDIA bloc** are reportedly considering a removal motion against the **Chief Election Commissioner (CEC), Gyanesh Kumar**. The allegations center on "biased conduct" and perceived irregularities during the **Special Intensive Revision (SIR)** of electoral rolls, particularly in states like West Bengal and Uttar Pradesh.

How Can the CEC Be Removed?

To preserve the independence of the **Election Commission of India (ECI)**, the Constitution provides the CEC with a level of protection nearly identical to that of the higher judiciary.

- **Constitutional Basis (Article 324):** The CEC can only be removed from office in the **same manner and on the same grounds** as a **Judge of the Supreme Court**.

- **Grounds for Removal:** The only two constitutionally valid grounds for removal are:
    1. **Proved misbehaviour**
    2. **Incapacity**
- **Legal Framework:** The process is governed by the **Judges Inquiry Act, 1968**, and reiterated in the **CEC and Other ECs (Appointment and Service) Act, 2023**.

Note on Terminology: While often called "impeachment" in news headlines, the Constitution technically reserves that term for the **President** (Article 61). For the CEC and Judges, the correct term is **Removal**.

Step-by-Step Removal Procedure

The removal of a CEC is a **quasi-judicial process** involving several stringent hurdles:

1. **Initiation of the Motion:**
    - A notice must be signed by **100 members** of the **Lok Sabha** OR **50 members** of the **Rajya Sabha**.
    - This notice is submitted to the **Speaker** (Lok Sabha) or **Chairman** (Rajya Sabha).
2. **Investigation Stage:**
    - The Presiding Officer may admit or refuse the motion.
    - If admitted, a **three-member committee** is formed to investigate the charges. This committee includes:
        - A Supreme Court Judge.
        - A Chief Justice of a High Court.
        - A distinguished jurist.
    - The CEC has the right to appear and defend themselves during this inquiry.
3. **Voting with Special Majority:**
    - If the committee finds the CEC guilty, the motion is taken up for voting.
    - To pass, it requires a **Special Majority** in **both Houses** during the same session:
        - Majority of the **total membership** of the House.
        - **Two-thirds majority** of members **present and voting**.
4. **Presidential Order:**
    - If both Houses pass the motion, an address is presented to the **President of India**, who then issues the final order for removal.

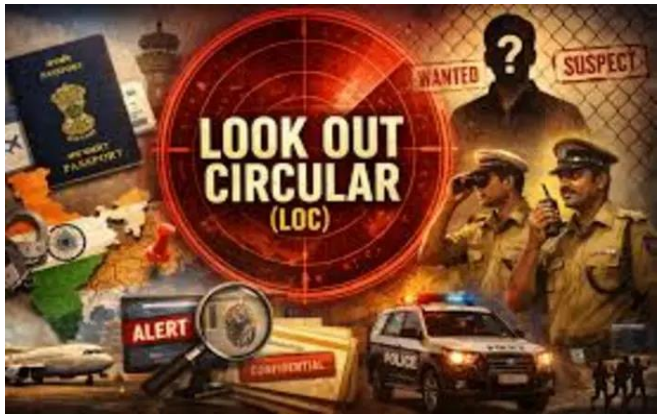
Comparison: CEC vs. Other Election Commissioners

Unlike the CEC, the other two **Election Commissioners (ECs)** do not enjoy the same level of protection. They can be removed by the President simply on the **recommendation of the CEC**. This distinction has been a point of debate, with many advocates suggesting that all three members should have equal constitutional safeguards.

Institutional Status (2026)

- **Current CEC:** Shri Gyanesh Kumar (Assumed office Feb 2025).
- **Rank:** The CEC holds a high rank in the **Table of Precedence**, equivalent to a Supreme Court Judge (or Cabinet Secretary for salary purposes under the 2023 Act).
- **Recent Controversy:** The current dispute involves the **Special Intensive Revision** exercise, with opposition leaders alleging that millions of names were unfairly removed from voter lists in West Bengal.

MHA Guidelines : Look Out Circulars (LOC) Revision 2026



Why in News?

The **Ministry of Home Affairs (MHA)** has officially modified the guidelines for the issuance of **Look Out**

Circulars (LOCs) as of **March 2026**. The revision tightens the protocol for blocking a person's departure, specifically stripping various statutory bodies of their power to directly instruct the **Bureau of Immigration (BoI)**.

Note

The 2026 update aims to prevent the "draconian" misuse of travel bans in civil or non-criminal disputes. By mandating that all LOC requests be routed through law enforcement agencies, the MHA is ensuring that such coercive measures are backed by criminal jurisdiction. Additionally, the new rules introduce **standardized action codes** and **strict custody timelines** to enhance transparency and protect personal liberty.

Key Changes in the 2026 Guidelines

Restriction on Statutory Bodies

- **Direct Bar:** Statutory bodies such as the **NCW** (Women), **NHRC** (Human Rights), **NCPCR** (Child Rights), and **NCLT** (Company Law) can no longer directly request an LOC from the BoI.
- **Mandatory Routing:** These bodies must now forward their findings to a **Law Enforcement Agency (LEA)** with criminal jurisdiction (e.g., local Police, CBI, or ED). The LEA will then assess if a "cognizable offense" exists before initiating the LOC.

Standardized Action Codes

To remove ambiguity at immigration counters, the LOC proforma now offers only **three standardized options**:

1. **Detain and Inform:** The individual is taken into custody, and the originating agency is notified.
2. **Prevent Departure and Inform:** The individual is barred from boarding, but not necessarily arrested.
3. **See Remarks for Action:** A flexible category reserved **strictly for counter-terrorism** purposes by intelligence agencies like the **IB, R&AW, and NIA**.

Strict Custody Timelines

To prevent indefinite harassment at airports:

- **Initial Custody:** If a person is detained, the originating agency must take custody within **3 hours**.
- **Failure to Comply:** If the agency fails to show up within 3 hours, the individual must be handed over to the **local police**.
- **Formal Custody:** The originator then has a maximum of **24 hours** to assume formal legal custody.

Handling Judicial Orders

- **Communication:** Upon receiving a court order to quash or stay an LOC, the BoI must immediately notify the originating agency.
- **Update Window:** The originating agency is mandated to respond and update the LOC status within **7 working days**.

Understanding the Look Out Circular (LOC)

- **Definition:** A coercive administrative notice used to ensure that individuals wanted by the law or considered a "flight risk" do not leave the country.
- **Enforcement:** Managed by the **Bureau of Immigration (BoI)** under the MHA, primarily at international airports and seaports.
- **Criteria:** Typically issued for **cognizable offenses** where the accused is deliberately evading arrest or trial.

Significance of the Reform

- **Due Process:** Responds to judicial criticism that LOCs were being used as a "shortcut" in civil or commercial disputes (e.g., bankruptcy cases).
- **Liberty vs. Security:** Balances the state's need to catch economic offenders and terrorists with an individual's **Fundamental Right to Travel** under Article 21.
- **Administrative Clarity:** Standardizes responses across 117 immigration posts nationwide, reducing the risk of "mistaken identity" or arbitrary detentions.

Garo Hills Autonomous District Council (GHADC) Election Postponement

Why in News?

Elections to the **Garo Hills Autonomous District Council (GHADC)** in Meghalaya have been postponed following widespread unrest. The conflict stems from a **February 2026 notification** issued by the GHADC, which mandates that all candidates must possess a **Scheduled Tribe (ST) certificate** to contest. This rule has sparked intense legal and social debate over political rights in the region's diverse constituencies.

The Conflict: Tribal vs. Non-Tribal Rights

- **The Notification:** The GHADC moved to restrict candidacy exclusively to ST individuals to preserve the tribal character of the council.
- **Opposition:** Non-tribal residents (primarily from the plains belt and Muslim-dominated areas) have challenged the move as **unconstitutional**.
- **Key Arguments:** * Opponents argue the rule violates the right to political participation in five specific Muslim-dominated constituencies.
    - Legal experts contend that only **Parliament**, not the District Council itself, has the authority to amend such fundamental provisions under the **Sixth Schedule**.

ADCs in Meghalaya

Meghalaya is home to three distinct Autonomous District Councils:

1. **Garo Hills ADC**
2. **Khasi Hills ADC**
3. **Jaintia Hills ADC**

- **Composition:** Each council typically consists of **30 members** (29 elected by the people and one nominated by the Governor).
- **Governance:** The **District Council Affairs Department** of the Meghalaya government serves as the essential bridge between the councils and the state administration.

Understanding Autonomous District Councils (ADCs)

ADCs are specialized administrative units created under the **Sixth Schedule** of the Indian Constitution to protect tribal culture and land in **Assam, Meghalaya, Tripura, and Mizoram**.

- **Administrative Structure:** These areas are organized into **Autonomous Districts and Regions**. The **Governor** holds the power to create, re-organize, or alter the boundaries of these units.
- **Legislative Powers:** Councils have the authority to make laws concerning:
    - Land and Forest management (excluding reserved forests).
    - Inheritance, Marriage, and Social Customs.
    - Regulation of moneylending and trade by non-tribals.
    - *Note:* All such laws require the **Governor's assent** to become valid.
- **Legal Shield:** Central and State laws do not automatically apply to these regions. Their application is subject to specific notifications by the **Governor** (for Meghalaya) or the **President** (for other states).

Current Status

- **Election Delay:** The state government has put the democratic process on hold to prevent further communal escalation.
- **Judicial Oversight:** The matter is expected to be reviewed by the **Meghalaya High Court** to determine if the GHADC overstepped its legislative jurisdiction.

Passive Euthanasia: Harish Rana Vs. Union of India (2026)

Why in News?

In a landmark judgment in the **Harish Rana vs. Union of India Case (2026)**, the Supreme Court permitted **passive euthanasia** for a 32-year-old man who had been in a **Permanent Vegetative State (PVS)** for over 13 years. This ruling marks the first actual court-approved implementation of the guidelines established in the **2018 Common Cause judgment**, which recognized the **Right to Die with Dignity** under Article 21.

Note

Harish Rana suffered catastrophic brain injuries in 2013, leaving him with **100% quadriplegia**. The Supreme Court accepted the medical board's recommendation to withdraw life-sustaining treatment, specifically **Clinically Assisted Nutrition and Hydration (CANH)**. The court emphasized that such a withdrawal must be managed through a robust **palliative care plan** to ensure a humane end, rather than an "abandonment" of the patient.

Key Observations of the Supreme Court (2026)

- **CANH as Medical Treatment:** The SC clarified that nutrition administered via **PEG tubes** constitutes "medical treatment" rather than basic care, making its withdrawal a legally valid part of passive euthanasia.
- **Immediate Implementation:** To prevent further suffering, the court **waived the 30-day reconsideration period** usually required for such medical board decisions.
- **Palliative Care Mandate:** Directed **AIIMS, Delhi** to admit the patient to its palliative care department to manage pain and symptoms during the withdrawal process.
- **Call for Legislation:** The SC urged the Union Government to enact a **comprehensive law on end-of-life care** to protect decisions from being influenced by financial distress or socio-economic vulnerability.

Understanding Euthanasia in India

Type	Legal Status	Definition
Active Euthanasia	**Illegal**	Using lethal substances (e.g., injection) to end life. Treated as murder/culpable homicide under **BNS, 2023**.
Passive Euthanasia	**Legal**	Withdrawing/withholding life-sustaining treatment (ventilators, feeding tubes) to allow natural death.
Living Will	**Legal**	An **Advance Medical Directive** where a person specifies in writing that they do not wish to be kept on life support if terminally ill.

Judicial Evolution of the "Right to Die"

1. **Gian Kaur Case (1996):** SC held that the Right to Life does **not** include the right to die.
2. **Aruna Shanbaug Case (2011):** SC permitted passive euthanasia under strict judicial and medical supervision for the first time.
3. **Common Cause Case (2018):** SC recognized the **Right to Die with Dignity** as a Fundamental Right under **Article 21** and validated Living Wills.
4. **Harish Rana Case (2026):** Streamlined the process by allowing immediate implementation and emphasizing palliative care integration.

Current Legal Process for Passive Euthanasia

The process follows a **two-stage medical review** (as modified in 2023):

- **Primary Medical Board:** Comprising the treating physician and two specialists with at least 5 years of experience.
- **Secondary Medical Board:** Three independent doctors from a district-level panel who review the primary board's findings.
- **Judicial Oversight:** The final decision must be communicated to the **Judicial Magistrate First Class (JMFC)**.

Building a Support System for Terminally Ill Patients

- **National Palliative Care Mission:** Training healthcare workers and ensuring the availability of essential pain-relief drugs like **oral morphine** in every district.
- **Financial Protection:** Incorporating hospice and home-based palliative care into **Ayushman Bharat (PM-JAY)** to reduce the financial burden on families.
- **Community-Based Care:** Scaling models like Kerala's **Neighbourhood Network in Palliative Care** to provide home-based support through trained volunteers.
- **Legal Literacy:** Launching mass awareness campaigns regarding **Living Wills** so citizens can exercise their autonomy before losing the ability to consent.

Conclusion

The 2026 ruling represents a compassionate shift in Indian law, balancing the sanctity of life with the necessity of a dignified death. However, without a formal **statutory framework**, end-of-life decisions remain a complex judicial hurdle for thousands of families across the country.

OBC Creamy Layer Determination: Supreme Court Ruling 2026

Why in News?

In a landmark judgment (2026), the **Supreme Court of India** clarified the criteria for determining the **"creamy layer"** status of **Other Backward Classes (OBC)** candidates. The Court ruled that parental income alone cannot be the sole deciding factor, effectively quashing decades of contradictory administrative guidelines that led to the wrongful exclusion of many candidates from civil services and other government appointments.

Note

The ruling resolves a long-standing conflict between the **1993 DoPT Office Memorandum** and a **2004 clarificatory letter**. The Court held that the "creamy layer" test is primarily **status-based**, not income-based. This ensures that children of employees in Public Sector Undertakings (PSUs) and the private sector are treated at par with children of government employees, preventing "hostile discrimination" based on salary figures alone.

Key Observations of the Supreme Court

Quashing the 2004 Clarification

- **The Conflict:** The original **1993 OM** stated that income from salaries and agricultural land should be excluded from the "Income/Wealth Test." However, a **2004 DoPT letter** incorrectly directed the inclusion of salary income for PSU and private sector employees.
- **The Result:** This created an unfair divide where children of government employees retained reservation benefits based on their parents' post (Status), while PSU/private sector wards were disqualified because their parents' salaries crossed the **Rs 8 lakh** threshold.

Status over Income

- **Primary Test:** The Court reaffirmed that determination must consider the **parent's employment category** (Group A, B, C, or D) rather than just the gross salary.
- **Constitutional Validity:** By denying benefits to PSU/private sector wards solely on income, the government violated **Articles 14, 15, and 16** (Right to Equality and Opportunity), as it treated "equals unequally."

Relief and Supernumerary Posts

- **Retroactive Justice:** The Court directed the government to accommodate candidates who were wrongly excluded due to the 2004 rule.
- **Supernumerary Posts:** If no vacancies exist, the government must create **special temporary posts** to ensure these candidates receive the positions they were originally entitled to.

Understanding the "Creamy Layer"

The concept was introduced in the **Indra Sawhney vs. Union of India (1992)** case to ensure that reservation benefits reach the truly backward sections of OBCs.

Category	Exclusion Criteria (Creamy Layer)
Government Employees	Children of **Group A/Class I** officers or **Group B/Class II** officers (if both parents are Group B or one is promoted to Group A before age 40).
Non-Government	For those in the private sector or self-employed, the income limit is **Rs 8 lakh per annum** (current limit since 2017).
Constitutional Posts	Children of persons holding constitutional posts (President, VP, Judges, etc.) are automatically excluded.

Significance of the Verdict

- **Parity for PSUs:** Children of employees in Public Sector Banks (PSBs) and PSUs (like ONGC, SAIL) will now be evaluated based on the **equivalence of their parents' posts** to government ranks, rather than a simple salary check.
- **Expanded Eligibility:** This is expected to significantly expand the pool of eligible OBC candidates who were previously disqualified due to rising private-sector salaries despite their "status" being equivalent to Group C or D government staff.

Conclusion

This judgment restores the original intent of the 1993 reservation policy, moving away from a narrow "salary-counting" approach toward a more nuanced "social status" evaluation. It reinforces the principle that reservation is a tool for social upliftment, not a purely economic subsidy.

EDITORIALS

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Protests in Ladakh : Demand for Statehood and Sixth Schedule (2026)

Why in News?

In early **2026**, massive protests resurfaced in **Leh** and **Kargil**, led by the **Leh Apex Body (LAB)** and the **Kargil Democratic Alliance (KDA)**. The protesters are demanding four key points: **Full Statehood for Ladakh**, inclusion in the **Sixth Schedule** of the Constitution, a dedicated **Public Service Commission (PSC)**, and **two Parliamentary seats** (one each for Leh and Kargil).

Note :

Since its transition to a Union Territory (UT) without a legislature in 2019, Ladakh has faced a perceived "representation deficit." With a **97% tribal population** and a fragile "cold desert" ecology, locals fear that the lack of legislative power leaves their land, culture, and jobs vulnerable to outside industrial influence. While the Union Government cites **strategic security** at the LAC and LoC as reasons for direct central control, the local demand for democratic self-governance continues to intensify.

Rationale Behind the Demands

1. Restoration of Democratic Representation

- **The Shift:** Before 2019, Ladakh had **4 MLAs** in the J&K Assembly. Currently, it is governed by unelected bureaucrats under a Lieutenant Governor.
- **Council Limitations:** Although **Ladakh Autonomous Hill Development Councils (LAHDCs)** exist, they lack the legislative "teeth" to make laws on land or environment, leading to a sense of being sidelined.

2. Safeguarding Tribal Identity & Ecology

- **Demographics:** Over 97% of Ladakhis are tribal. The abrogation of Article 370 removed the "special status" that once protected their land from being purchased by non-locals.
- **Environmental Risk:** Without **Autonomous District Councils (ADCs)**, locals cannot legally block "mega-projects" that might threaten their vital glaciers and water resources.

3. Economic Autonomy & Jobs

- **Unemployment:** Graduate unemployment in the region is reported at **26.5%**, nearly double the national average.
- **Recruitment Gap:** Without a local PSC, high-level gazetted posts remain unfilled or are filled by candidates from outside the region, leading to a demand for **domicile-based reservations**.

What is the Sixth Schedule?

Under **Article 244(2)**, the Sixth Schedule provides for **Autonomous District Councils (ADCs)** in tribal areas (currently in Assam, Meghalaya, Tripura, and Mizoram).

- **Composition:** 30 members (26 elected, 4 nominated).
- **Powers:** ADCs can make laws on **land, forests, water, marriage, and social customs** (subject to the Governor's assent).
- **Judicial Authority:** They can establish village courts to settle tribal disputes.
- **Taxation:** They have the power to collect land revenue and regulate local markets.

Government Concerns & Challenges

- **Strategic Buffer Zone:** Ladakh is a critical "tri-junction" sharing disputed borders with **China (LAC)** and **Pakistan (LoC)**. Direct UT

status ensures a unified command for military-civilian coordination during stand-offs.

- **Constitutional Hurdles:** The Sixth Schedule is historically specific to the Northeast. Extending it to Ladakh would require a **Constitutional Amendment** and could trigger similar demands in regions like Gorkhaland.
- **Administrative Viability:** With a population of only ~3 lakh, maintaining a full state bureaucracy (High Court, PSC, etc.) is seen by some as economically unviable.
- **Intra-Regional Divide:** There are fears that statehood might sharpen the political divide between **Buddhist-majority Leh** and **Muslim-majority Kargil**.

Current Protections (2025–26)

To address some grievances, the government introduced the **Ladakh Reservation (Amendment) Regulation, 2025**:

- **Jobs: 85% reservation** for local residents in government jobs.
- **Domicile:** Defined as having 15 years of residency in the UT.
- **Languages:** English, Hindi, Urdu, **Bhoti, and Purgi** are now official languages.
- **Gender Parity:** One-third rotating reservation for women in LAHDC Leh and Kargil.

The Path Forward

1. **Empowering Hill Councils:** Granting LAHDCs legislative powers over land and local culture without the immediate need for full statehood.
2. **Article 371-like Framework:** A "middle path" involving a special constitutional provision tailored for Ladakh's unique demographic and environmental needs.
3. **Carrying Capacity Limits:** Enacting strict environmental laws to protect the ecosystem from unregulated tourism and industrial influx.

Conclusion

The Ladakh movement highlights the tension between **national security** and **local democratic aspirations**. A sustainable solution requires a consensus-based model that empowers the local tribal population while maintaining the strategic integrity of India's northern frontiers.

Transgender Persons (Protection of Rights) Amendment Bill, 2026

Why in News?

The Ministry of Social Justice and Empowerment has introduced the **Transgender Persons (Protection of Rights) Amendment Bill, 2026**, proposing fundamental changes to the 2019 Act. Transgender activists and legal experts have raised alarms, stating that the amendments could override the **Supreme Court's landmark NALSA v. Union of India (2014)** judgment, which established the right to self-identification as a core component of gender identity.

Note :

The 2026 Bill seeks to replace the current **right to self-identification** with a mandatory **medical certification process** conducted by a District Medical Board. While the government argues this will prevent the misuse of welfare schemes and clarify "vague" definitions, critics view it as a return to "clinical gatekeeping." The Bill also introduces significantly stricter penalties for crimes against transgender persons, including life imprisonment for kidnapping children.

Key Changes Proposed in the 2026 Bill

- **Abolition of Self-Identification:** The Bill removes the provision that allowed individuals to receive an identity certificate based on their self-perceived gender.
- **Medical Board Requirement:** A Medical Board, headed by a **Chief Medical Officer (CMO)**, must now provide a "recommendation" before a District Magistrate can issue a transgender identity certificate.

- **Narrowed Definition:** The term "transgender person" is redefined to focus primarily on specific socio-cultural groups (e.g., *Kinners, Hijras, Aravanis*) or individuals with documented biological/chromosomal variations, excluding those with "gender-fluid" identities.
- **Stringent Penalties for Coercion:** A new criminal category targets "forced identity," penalizing those who compel others into procedures like emasculation through deceit or force.
- **Increased Oversight:** State representatives on the National Council for Transgender Persons must now be of **Director rank** or above, increasing bureaucratic control.

Comparative Analysis: 2019 Act vs. 2026 Proposed Bill

Feature	Transgender Persons Act, 2019	Amendment Bill, 2026 (Proposed)
Self-Identification	Enshrined as a legal right.	Abolished; replaced by medical proof.
Identity Certificate	Purely administrative process.	Requires Medical Board recommendation.
Definition	Inclusive of all self-perceived identities.	Narrowed to biological or cultural groups.
Punishment (General)	6 months to 2 years for abuse.	5 to 14 years for forced labor/begging.
Kidnapping (Child)	Covered under general IPC/BNS.	**Life Imprisonment** with min. ₹5 lakh fine.

Major Concerns and Fears

- **Contradiction of NALSA (2014):** The Supreme Court explicitly ruled that gender identity is a personal autonomy matter that does not require medical or physical proof. The 2026 Bill is seen as a direct judicial reversal through legislation.
- **Clinical Gatekeeping:** Requiring a board of doctors to "verify" one's gender is criticized as a regressive and humiliating process that treats identity as a medical pathology.
- **Exclusion of the "Invisible" Community:** By removing "self-perceived" identity, the Bill may exclude thousands of trans-men and non-binary individuals who do not belong to traditional socio-cultural groups like the *Hijra* community.
- **Uncertainty for Existing ID Holders:** With over **32,000 ID cards** already issued under the 2019 Act, it remains unclear if these individuals will have to undergo "re-certification" under the new medical criteria.

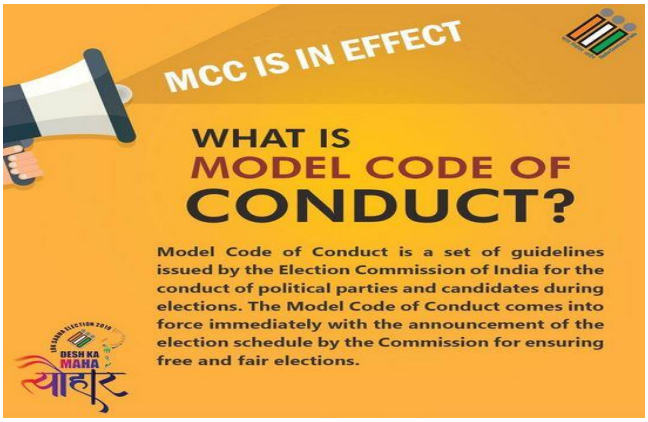
The Way Forward: Towards True Empowerment

- **Restoring Autonomy:** Aligning the Bill with the NALSA verdict to ensure that gender identity remains a matter of personal choice rather than medical scrutiny.
- **Inclusive Healthcare:** Moving beyond certification to focus on making **Gender Reassignment Surgery (GRS)** and hormone therapy safe and affordable under schemes like **Ayushman Bharat**.
- **Economic Integration:** Expanding job reservations (similar to the **Karnataka model**) to integrate transgender persons into the formal economy. A World Bank report suggests this could boost India's GDP by **1.7%**.
- **Sensitivity Training:** Sensitizing District Magistrates, police, and healthcare workers to interact with the community without prejudice or transphobia.

Conclusion

The 2026 Amendment Bill represents a critical crossroads for transgender rights in India. While the push for stricter criminal penalties is a welcome step for safety, the removal of the right to self-identification threatens to undermine the dignity and agency of the very community the law intends to protect. A balanced approach that ensures administrative clarity without compromising fundamental human rights is essential for the vision of an inclusive India.

Model Code of Conduct (MCC) : Safeguarding the 2026 Assembly Elections



Why in News?

The **Election Commission of India (ECI)** officially enforced the **Model Code of Conduct (MCC)** in **March 2026** following the announcement of General Elections to the Legislative Assemblies of **Assam, Kerala, Tamil Nadu, West Bengal, and Puducherry**. The MCC came into immediate effect to ensure a level playing field and to prevent the party in power from using government machinery to influence voters.

Note

The MCC is a set of guidelines that regulates the conduct of political parties and candidates during elections. While it lacks **direct statutory backing**, the ECI enforces it under **Article 324** of the Constitution. The 2026 election cycle faces modern challenges such as **AI-driven deepfakes** and "freebie" politics, prompting the ECI to lean heavily on digital tools like the **c-VIGIL app** and the **Voluntary Code of Ethics** to maintain electoral purity.

Evolution and Legal Standing

- **Origin:** First introduced during the **1960 Kerala Assembly elections** as a voluntary consensus.
- **Institutionalization:** Transformed into a powerful enforcement tool in **1991** under Chief Election Commissioner **T.N. Seshan**.
- **Legal Nature:** It is a "moral code" rather than a law. However, several provisions overlap with the **Representation of the People Act (RPA), 1951**, and the **Bharatiya Nyaya Sanhita, 2023** (formerly IPC), making specific violations (like bribery or communal incitement) legally punishable.
- **Duration:** Operates from the moment of the election announcement until the declaration of results.

Key Provisions of the MCC

- **General Conduct:** Prohibits appeals to caste or communal feelings and bars the use of places of worship for propaganda.
- **Party in Power:** Ministers cannot combine official visits with electioneering. The government is prohibited from announcing new projects, financial grants, or ad-hoc appointments once the MCC is active.
- **Election Manifestos:** Must not contain "irrational" promises and should explain the rationale and financial plan for fulfilling them (added in 2013).
- **100-Meter Rule:** No campaigning or canvassing is allowed within 100 meters of polling stations on election day.

Digital and Technological Safeguards

- **c-VIGIL App:** Allows citizens to upload photos/videos of violations. The ECI is mandated to resolve these complaints within **100 minutes**.
- **SUVIDHA Portal:** A digital single-window system for parties to request rallies, grounds, and helipads on a "first-come, first-served" basis.
- **Voluntary Code of Ethics (2019):** An agreement with "Big Tech" (Meta, Google, X) to take down problematic content within **3 hours** during the 48-hour "silence period."

Contemporary Challenges (2026)

- **The "Freebies" Conundrum:** The thin line between legitimate welfare (DPSP) and competitive populism (Revdi culture) remains a major enforcement gray area.
- **Deepfakes and AI:** The use of **generative AI** to create misleading videos or "cloned" voices of leaders makes real-time monitoring difficult.
- **Surrogate Advertising:** Political parties often use unverified "meme pages" or influencers to bypass expenditure limits and MCC guidelines.
- **"Tiger Without Teeth":** Critics argue that since the ECI cannot deregister a party or permanently disqualify a candidate solely for an MCC breach, the code relies too much on moral suasion.

Proposed Reforms to Strengthen the MCC

1. **Statutory Backing:** The **Dinesh Goswami Committee (1990)** and a **2013 Standing Committee** proposed integrating the MCC into the RPA, 1951, to make it legally binding.
2. **Deregistration Power:** Amending the law to give the ECI the explicit power to deregister a political party for chronic or severe violations.
3. **Digital "Silence Period":** Amending **Section 126 of the RPA** to explicitly ban political

content on social media and OTT platforms during the 48 hours before polling.

4. **AI Watermarking:** Mandating cryptographic watermarks on all digital campaign material to ensure the traceability of "fake news."
5. **Expenditure Caps on Parties:** While individual candidates have spending limits, there is currently no cap on what a political party can spend, creating an uneven playing field.

Conclusion

The MCC remains the "moral conscience" of Indian democracy. While its lack of legal teeth is often criticized, its strength lies in the ECI's constitutional authority under **Article 324**. For the 2026 elections, the transition from manual monitoring to **AI-assisted surveillance** will be crucial in ensuring that the "purity of the ballot" is protected from the "toxicity of the bot."

Foreign Contribution (Regulation) Amendment Bill, 2026 : Enhancing NGO Accountability

Why in News?

The Union Government is set to introduce the **Foreign Contribution (Regulation) Amendment Bill, 2026**. This legislative move aims to close existing legal loopholes regarding the management of assets built using foreign funds and to establish a more stringent accountability framework for the leadership of Non-Governmental Organisations (NGOs).

Note :

The 2026 Amendment focuses on the "life cycle" of foreign-funded assets, particularly when an NGO's registration is cancelled or suspended. By introducing a **"Designated Authority"** to manage these assets and expanding the legal liability of **"Key Functionaries,"** the Bill seeks to ensure that foreign contributions are utilized strictly for their intended social purposes and do not harm national sovereignty. While it tightens oversight, it also proposes a **reduction in maximum imprisonment** for certain offenses to rationalize penalties.

Key Proposed Changes in the 2026 Bill

- **Asset Management & Disposal:** The government can now appoint a "Designated Authority" to take control of assets (land, buildings, equipment) created via foreign funds if an NGO's registration is **suspended, cancelled, or not renewed**. These assets can be sold, with proceeds going to the **Consolidated Fund of India**.
- **Personal Liability of Leaders:** The definition of "Key Functionary" now explicitly includes **Directors, Partners, Trustees, and Kartas of HUFs**. These individuals will be held personally liable for FCRA violations unless they can prove the offense occurred without their knowledge despite due diligence.
- **Centralized Investigation Control:** Any state government or law enforcement agency must obtain **prior approval from the Central Government** before initiating an investigation into FCRA-related complaints.
- **Automatic Cessation:** The Bill mandates the automatic expiry of registration if not renewed on time, with fixed timelines for the utilization of funds received under "prior permission."
- **Penalty Rationalization:** The maximum jail term for FCRA violations is proposed to be reduced from **5 years to 1 year**, focusing more on financial penalties and asset recovery.

Understanding the FCRA Framework (2010–2026)

- **Administration:** Regulated by the **Ministry of Home Affairs (MHA)**. Currently, approximately **16,000 associations** are registered, receiving nearly **22,000 crore** in foreign funding annually.
- **Core Objective:** To ensure foreign hospitality and contributions do not influence India's political or religious landscape or compromise national interest.

- **Mandatory SBI Account:** All foreign funds must be received in a dedicated account at the **State Bank of India, New Delhi (Main Branch)**.
- **No Sub-Granting:** Organizations are prohibited from transferring foreign funds to other entities unless the recipient also holds a valid FCRA registration.

Eligibility and Restrictions

Feature	Requirement / Restriction
Track Record	Minimum **3 years** of active social work.
Spending Threshold	At least **15 lakh** spent on core activities over the previous 3 years.
Validity	Registration is valid for **5 years**, requiring renewal 6 months before expiry.
Prohibited Groups	Election candidates, journalists, judges, and government servants are strictly barred from receiving foreign funds.

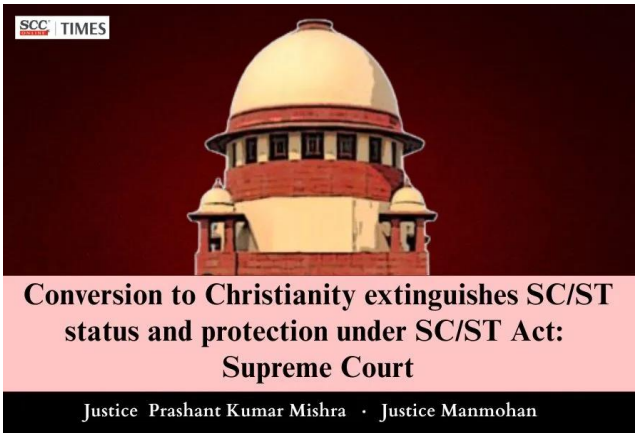
Impact and Significance

1. **Transparency in Assets:** Previously, there was no clear law on what happens to a multi-crore hospital or school built with foreign funds if the NGO's license was revoked. The 2026 Bill provides a legal roadmap for the state to step in.
2. **Preventing Misuse:** By making trustees and directors personally liable, the Bill aims to deter the diversion of funds for **anti-national activities or forced religious conversions**.
3. **Streamlined Oversight:** The requirement for central approval for probes prevents "harassment" or inconsistent investigations by multiple state agencies, centralizing control under the MHA.

Conclusion

The **FCRA Amendment Bill, 2026**, represents a shift toward "asset-centric" regulation. While the 2020 amendments focused on how money flows into an NGO, the 2026 version focuses on the **permanence of that money** in the form of physical assets. For the NGO sector, this means a higher burden of proof and more rigorous audit trails, ensuring that every rupee from abroad serves the public good without compromising India's internal security.

Supreme Court Ruling on SC Status and Religious Conversion (2026)



Why in News?

In the landmark case of **Chinthada Anand v. State of Andhra Pradesh (2026)**, the **Supreme Court of India** delivered a definitive ruling on the intersection of faith and affirmative action. The Court held that any individual who professes a religion other than **Hinduism, Buddhism, or Sikhism** cannot be legally recognized as a member of a **Scheduled Caste (SC)**. The judgment emphasized that the act of conversion to religions like Christianity or Islam results in the **immediate and absolute loss** of SC status and its associated legal protections.

Note :

The ruling reaffirms the religious boundaries of the **Constitution (Scheduled Castes) Order, 1950**. The Court reasoned that since Christianity and Islam do not theologically acknowledge the caste system, one cannot "profess" those faiths while simultaneously claiming benefits designed to remedy the historical disability of **untouchability**—a practice rooted in the Hindu social hierarchy. While the debate over "Dalit Christians" and "Dalit Muslims" continues, the judiciary has maintained that any change to this criteria remains the exclusive domain of **Parliament**.

Key Highlights of the 2026 Judgment

- **Immediate Loss of Status:** SC status is lost at the precise moment of conversion to a non-notified religion, regardless of the individual's birth or ancestral caste.
- **The "Professing" Criterion:** To "profess" a religion means to practice it publicly. The Court ruled that claiming SC benefits while

practicing a faith that denies caste is **mutually exclusive**.

- **Statutory Consequences:** Converted individuals lose the protection of specialized laws, such as the **SC/ST (Prevention of Atrocities) Act, 1989**, as they are no longer members of the protected group.
- **Reconversion Rules:** To reclaim SC status, a person must provide **unimpeachable proof** of genuine renunciation of the converted faith and demonstrate clear **acceptance by the original caste community**.
- **Contrast with ST Status:** The Court noted that **Scheduled Tribe (ST)** status is religion-neutral. An ST individual does not lose their status upon conversion as long as they maintain their **tribal customs and identity**.

Legal Eligibility for SC Status in India

Year	Religion Added	Legal Authority
1950	**Hinduism**	Original Constitution (Scheduled Castes) Order
1956	**Sikhism**	Parliamentary Amendment
1990	**Buddhism**	Parliamentary Amendment

- **Article 341:** Grants the President the power to specify Scheduled Castes. Only **Parliament** can add or remove a community from this list through legislation.
- **State Specificity:** SC status is not absolute nationwide; a person must belong to a caste officially notified in their **specific State or Union Territory of origin**.

Commissions and Recommendations

1. **Justice Ranganath Mishra Commission (2007):** Suggested that SC status should be made **religion-neutral**, similar to the ST category.
2. **Justice K.G. Balakrishnan Commission (Ongoing/2026):** Appointed to examine the specific question of whether "Dalit converts" to Christianity or Islam still face the historical stigma of untouchability. Its findings are expected to be the basis for future policy shifts.

Arguments Regarding Extension of SC Status

Arguments For Inclusion	Arguments Against Inclusion
Persistence of Stigma: Caste discrimination often survives conversion, leaving converts "doubly disadvantaged."	**Theological Conflict:** Christianity and Islam are egalitarian; claiming caste status contradicts their core tenets.
Constitutional Parity: ST and OBC categories are religion-neutral; denying this to SCs is seen as arbitrary.	**Overburdening the Quota:** Adding millions of new beneficiaries would dilute the benefits for existing SCs.
Empirical Evidence: Commissions (like Ranganath Mishra) have documented the socio-economic backwardness of converts.	**Identification Difficulty:** It is administratively complex to verify "untouchability" in faiths that officially reject it.

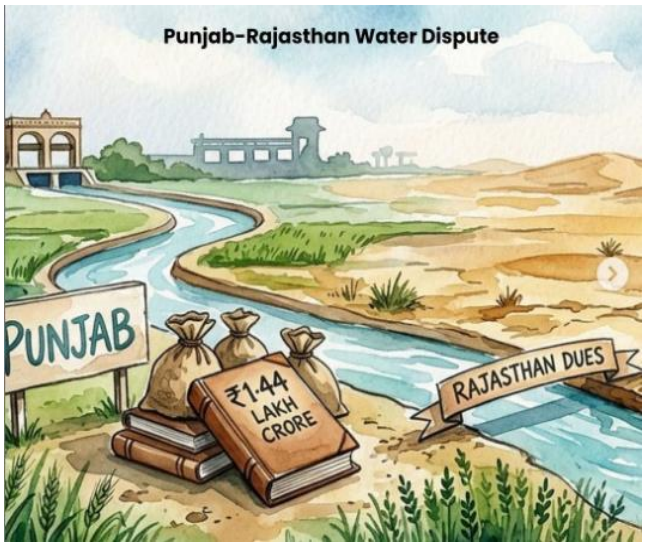
The Path Forward

- **Data-Driven Reform:** The resolution of this debate hinges on the **Justice K.G. Balakrishnan Commission's** data. If empirical evidence proves that untouchability persists post-conversion, a shift toward **religion-agnostic criteria** may be required.
- **Universal Civil Rights:** Regardless of SC status, the State must ensure that **anti-discrimination laws** are robust enough to protect any individual facing caste-based violence, irrespective of their religious identity.
- **Alignment with ST/OBC Models:** Moving toward a framework where **social and educational backwardness** is the sole metric could bring greater consistency to India's affirmative action policies.

Conclusion

The **2026 Supreme Court ruling** clarifies the current legal reality: SC status is a "religious-social" designation rather than a purely "ethnic" one. While the judgment provides legal certainty for now, it places the ball back in the court of **Parliament and the Balakrishnan Commission**. As India strives for an equitable society in 2026, the challenge lies in balancing the specific historical redressal of untouchability with the modern constitutional values of religious freedom and equality.

Punjab-Rajasthan Water Dispute : Royalty Demands and the Riparian Conflict (2026)



Why in News?

The **Punjab Chief Minister** has intensified a decades-old inter-state water conflict by formally demanding **1.44 lakh crore** from **Rajasthan**. This claim is based on the "royalty" for **18,000 cusecs** of water drawn by Rajasthan since **1960**. Punjab cites a colonial-era agreement and its own catastrophic **groundwater crisis** (extraction rate of 156%) as the basis for seeking financial compensation from its non-riparian neighbor.

Note

The dispute underscores the growing friction between the **Riparian Principle** (rights of the state where the river flows) and historical **Tripartite Agreements**. As India's per capita water availability nears the "scarcity threshold" of **1,000 cubic meters**, states are moving toward "conflictual federalism." While **Article 262** and the **ISWD Act, 1956** provide a legal framework for resolution, the politicization of water and agricultural demands for thirsty crops like paddy make a permanent settlement difficult.

Key Facts of the Punjab-Rajasthan Dispute

- **Colonial Roots:** The claim references a 1920s commercial pact between the **Maharaja of Bikaner** and undivided Punjab for Sutlej water via the **Gang Canal**. Royalty was paid until 1960.
- **The 1960 Shift:** The **Indus Waters Treaty (IWT)** gave India "unrestricted use" of the Eastern Rivers (Sutlej, Beas, Ravi). Post-IWT, water was treated as a national asset for internal allocation, and Rajasthan ceased royalty payments.
- **1981 Tripartite Agreement:** Signed by Punjab, Haryana, and Rajasthan (backed by PM Indira Gandhi), it allocated **8.6 MAF** (the largest share) to Rajasthan to feed the **Indira Gandhi Canal**, despite Rajasthan being a non-riparian state.
- **Legal Battles:** In **2004**, Punjab passed the *Termination of Agreements Act* to scrap sharing deals. However, in **2016**, the **Supreme Court** declared this unilateral termination unconstitutional, restoring the original allocation framework.
- **Current Stance:** Punjab argues that as a riparian state facing desertification, it cannot provide "free" water to a non-riparian state like Rajasthan, which does not fall in the basin of the Ravi, Beas, or Sutlej.

Constitutional and Statutory Framework

Provision	Description
State List (Entry 17)	Water supplies, irrigation, and canals are primarily **State subjects**.
Union List (Entry 56)	Parliament can regulate **Inter-state rivers** in the public interest.
Article 262	Empowers Parliament to adjudicate inter-state river disputes and **exclude SC jurisdiction**.
ISWD Act, 1956	Provides for **Tribunals** to settle disputes that cannot be resolved via negotiation.

Judicial Precedents

- **State of Karnataka v. Tamil Nadu (2018):** The SC declared rivers as **"National Assets"** and emphasized drinking water needs (e.g., Bengaluru) over irrigation.
- **Narmada Bachao Andolan (2000):** Affirmed that Tribunal awards are final and binding, linking water access to the **Right to Life (Article 21)**.
- **Mullaperiyar Case (2014):** Ruled that states cannot use "safety legislation" to bypass judicial orders on water levels.

Reasons for Escalating Water Conflicts

1. **Extreme Water Stress:** India's per capita availability has plummeted from **5,200 (1950)**

to **1,400 (2024)** cubic meters. It is projected to hit the critical **1,000** mark by 2050.

2. **Agricultural Intensity:** Punjab's groundwater extraction is **156%**, the highest in India, driven by the water-intensive paddy-wheat cycle.
3. **Inefficient Tribunals:** Disputes often languish for over **30 years** (e.g., Cauvery), by which time the ecological and political ground realities have completely changed.
4. **Hydro-Politics:** Water is a highly emotive electoral issue, leading states to take rigid, populist stands to secure "vote banks."

The Way Forward: 2026 Strategy

- **Benefit-Sharing Model:** Instead of fighting over "how many cusecs," states should focus on **collective economic benefits**. A water-surplus state could grow crops for a deficit state in exchange for energy or industrial concessions.
- **Digital Twins:** Using **AI and satellite imagery (RISAT)** to create high-resolution 3D models of river basins. This allows for objective, data-driven simulations of how droughts or dams affect all parties.
- **Permanent Tribunal:** Implementing the **ISWD (Amendment) Bill** to replace ad-hoc bodies with a single, permanent tribunal for faster adjudication.
- **Ecological Flows:** Ensuring a mandatory percentage of water remains in the river to prevent "Basin Closure" and maintain the health of the river ecosystem.

Conclusion

The Punjab-Rajasthan royalty demand is a symptom of a larger national crisis where **water is becoming more valuable than gold**. Resolving such disputes in 2026 requires moving away from the adversarial "zero-sum" mindset toward **Cooperative Federalism**. By integrating modern technology like **Digital Twins** with ancient wisdom of crop diversification, India can ensure that its rivers remain lifelines for all, rather than triggers for internal conflict.

Delimitation and Women's Reservation : Expanding the Lok Sabha (2026)

Why in News?

The Union government is moving to accelerate the **delimitation exercise** and a corresponding **constitutional amendment** to the **Women's Reservation Act, 2023**. The objective is to increase the strength of the **Lok Sabha** and State Assemblies using **2011 Census** data. While **Article 82** originally envisioned delimitation after the first census post-2026, the new amendments seek to "decouple" women's reservation from the delayed 2021 Census (now starting in April 2026) to ensure implementation by the **2029 General Elections**.

Note

The government proposes expanding the **Lok Sabha to 816 seats** (a 50% increase from 543) based on 2011 figures. This "pro-rata" expansion aims to fast-track the **33% women's quota** (approx. 273 seats) while maintaining the relative political weightage of states. This strategy is designed to avoid "penalizing" southern states for their successful population control. However, the move has sparked intense debate over **federalism**, fiscal devolution, and the potential for a deepened **North-South political divide**.

Key Proposals for the 2029 Roadmap

- **Seat Augmentation:** Increasing Lok Sabha seats from **543 to 816**. To keep representation balanced, seats will be increased proportionally (e.g., **Uttar Pradesh** goes from 80 to 120, while **Tamil Nadu** increases from 39 to 59).
- **Expediting Women's Reservation:** By shifting the base year to **2011**, the government can redraw boundaries by **June 2026** without waiting for the new census results, which likely won't be ready until 2030.

- **Vertical Quota Application:** The 33% reservation for women will apply within the **SC and ST categories**. Total SC seats are projected to rise from **84 to 136**, and ST seats from **47 to 70**.
- **Lottery System:** Reserved seats for women will be determined by a lottery and will remain valid for a **15-year period**.

Understanding Delimitation

- **Definition:** The process of redrawing boundaries of constituencies to ensure "one person, one vote, one value" as population densities shift.
- **The Commission:** An independent 3-member body (headed by a retired SC Judge) whose orders have the **force of law** and cannot be challenged in any court.
- **The "Freeze":** Since 1976 (42nd Amendment), the **inter-state allocation** of seats has been frozen based on 1971 data to protect states that implemented population control. The 84th Amendment (2001) extended this freeze until the first census after **2026**.

Major Concerns and the "Demographic Penalty"

1. **The North-South Divide:** Southern states fear that a population-only criteria will diminish their national influence. Strictly following current population trends would see **Uttar Pradesh** gain significantly more power compared to states like **Kerala** or **Tamil Nadu**.
2. **Fiscal Disadvantage:** Since the **Finance Commission** uses population as a key metric for tax sharing, southern states worry they will continue to contribute high revenues while losing both political and financial "say."
3. **Federal Character:** Critics argue that a massive shift in seat share toward the north could allow a single geographic block to pass constitutional amendments without the consensus of the south.
4. **Parliamentary Efficacy:** Managing a house of **800+ members** raises concerns about the quality of debates and the ability of the Speaker to maintain order.

The Path to Consensus: Weighted Representation

To prevent a federal deadlock, experts suggest several safeguards:

- **Weighted Formula:** Instead of just "headcounts," the seat allocation should reward **demographic performance** (TFR), **Human Development Index (HDI)**, and **fiscal discipline**.
- **Rajya Sabha Reform:** Transforming the Upper House into a stronger federal shield—potentially giving each state **equal representation** regardless of size (similar to the US Senate).
- **Finance Commission Buffer:** Increasing the weightage of "Forest Cover" and "Demographic Performance" in tax devolution to protect the interests of southern and hill states.
- **Bifurcation:** Dividing exceptionally large states like **Uttar Pradesh** into smaller administrative units to prevent a single state from dominating national politics.

Conclusion

The **2026 Delimitation roadmap** is a high-stakes balancing act between gender justice and federal equity. While the expansion to **816 seats** offers a mathematical solution to avoid reducing any state's current share, it does not resolve the underlying fear of a "political eclipse" in the South. As the **Delimitation Commission** prepares to convene in **June 2026**, the focus must shift from a purely "arithmetic" exercise to one of **"Constitutional Statesmanship"** to ensure India's democracy remains truly representative of all its regions.

Supreme Court Verdict on Disability Caps: Prabhu Kumar *Vs*. State of Himachal Pradesh (2026)

Why in News?

In the landmark case of **Prabhu Kumar v. State of Himachal Pradesh (2026)**, the **Supreme Court (SC)** ruled that the State cannot impose an arbitrary upper limit on the percentage of disability for public employment. The Court clarified that the **Rights of Persons with Disabilities (RPwD) Act, 2016**, only prescribes a minimum threshold of **40% benchmark disability** and does not authorize an "exclusionary

ceiling" (e.g., a 60% cap) to disqualify candidates who are otherwise functionally competent.

Note

The case involved a candidate with **90% locomotor disability** who cleared the Himachal Pradesh Assistant District Attorney (ADA) exam but was denied appointment due to a state-imposed 60% disability cap. The Supreme Court set aside the High Court's earlier decision, emphasizing that suitability for a professional role must be judged on **functional requirement** and **reasonable accommodation** rather than a rigid medical percentage. This judgment marks a decisive shift from a "medical model" of disability to a "human rights model."

Key Observations in the Prabhu Kumar Case (2026)

- **Invalidation of Arbitrary Caps:** Restricting eligibility to a narrow 40%–60% bracket was deemed **manifestly arbitrary**, violating **Article 14** (Equality) and **Article 16** (Equal Opportunity) of the Constitution.
- **Functional vs. Medical Assessment:** For intellectual roles like a District Attorney, a physical locomotor disability does not impair **mental alacrity** or legal acumen. The appellant's decade-long legal practice was cited as evidence of professional competence.
- **Positive Obligation of the State:** The State is duty-bound to provide **reasonable accommodation**—adjustments to the environment or process that enable a person with a disability to perform their duties on an equal footing.

Evolution of Disability Jurisprudence

Case Law	Year	Supreme Court Ruling
Ravi Prakash Gupta	2010	Government cannot evade 3% reservation by simply not "identifying" posts.
V. Surendra Mohan	2019	Upheld a 50% limit for judges; **now overruled.**
Vikash Kumar v. UPSC	2021	Overruled the 2019 cap; established "Reasonable Accommodation" as a core right.
Om Rathod	2024	Functional capability must override rigid medical percentages.
Prabhu Kumar	**2026**	**Strictly prohibited upper-limit caps** in public employment eligibility.

The RPwD Act, 2016: Key Features

The 2016 Act brought Indian law into alignment with the **UN Convention (UNCRPD)**, expanding the scope of protection significantly.

- **Benchmark Disability:** Defined as having at least **40%** of a specified disability. This is the entry point for seeking reservation and statutory benefits.
- **Expanded Scope:** Increased the number of recognized disabilities from 7 to **21**, including blood disorders (Thalassemia), mental illness, and acid attack victims.
- **Job & Education Quota:** Increased government job reservation from **3% to 4%** and higher education reservation from **3% to 5%**.
- **Limited Guardianship:** Replaced "Plenary Guardianship" (total control) with a system of **joint decision-making**, respecting the individual's autonomy.
- **Special Courts:** Mandated the establishment of a Special Court in each district for the speedy trial of offenses against persons with disabilities.

Significance of the 2026 Ruling

1. **Barrier Removal:** It prevents states from using medical "ceilings" to filter out highly qualified candidates who happen to have higher disability percentages.
2. **Inclusive Governance:** Mandates that "suitability" for a job must be determined through a **functional test** (what a person *can* do) rather than a clinical chart.
3. **Dignity at Work:** Reinforces that the right to work is a facet of the **Right to Life (Article 21)**, ensuring that the RPwD Act serves as an instrument of empowerment.

Conclusion

By striking down arbitrary disability caps, the Supreme Court has ensured that **"benchmark disability"** remains a floor for inclusion rather than a ceiling for exclusion. In 2026, this verdict empowers thousands of professionals with high-percentage disabilities to compete for senior administrative and legal roles, ensuring that the Indian state truly reflects the diversity and capability of all its citizens.

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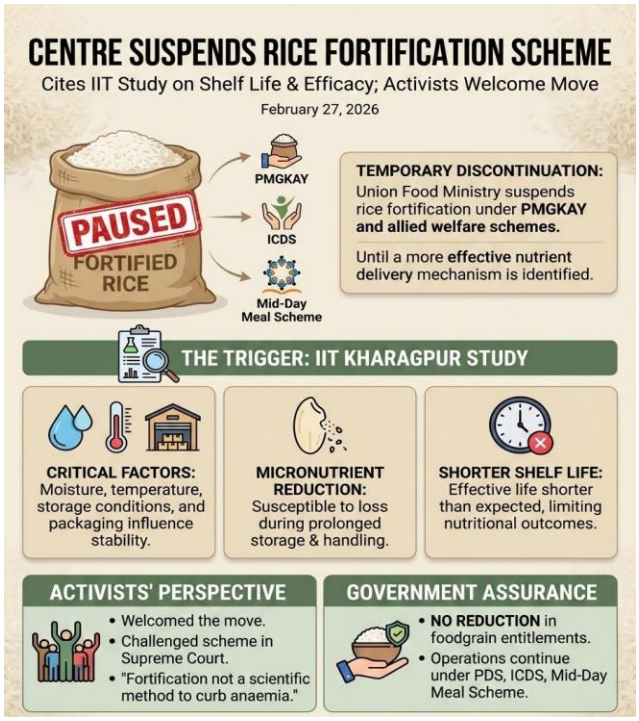
Indian Society & Social Justice

Rice Fortification : Temporary Halt Amidst Nutrient Stability Concerns



Why in News?

In **early 2026**, the Union government decided to **"temporarily" discontinue** the distribution of fortified rice under the **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)** and other welfare schemes. This strategic pause follows a critical review based on a study by **IIT Kharagpur**, which highlighted significant challenges in maintaining the nutritional integrity of **Fortified Rice Kernels (FRK)** during extended storage.

1. Key Findings of the IIT Kharagpur Study

- **Nutrient Degradation:** The study revealed that micronutrient levels—specifically **Iron, Folic Acid, and Vitamin B12**—decline over time due to environmental factors.
- **Environmental Impact:** Stability is critically compromised by moisture content, high relative humidity, and fluctuating temperatures across India's diverse agro-climatic zones.
- **The Storage Gap:** While the annual requirement under PMGKAY is **37.2 million tonnes**, the central pool often holds up to **67.4 million tonnes**. This leads to rice being stored for **2–3 years**, far exceeding the shelf life where fortified nutrients remain stable.

2. Impact on Industry and Operations

- **Milling Industry Distress:** Fortified rice manufacturers and millers have reported heavy financial losses on raw materials like premixes and folic acid. Stakeholders have urged the government to align future policy shifts with the **2026–27 crop season** to allow for better inventory management.
- **Continuity of Food Security:** The government has clarified that this is a **technical pause**, not a reduction in entitlements. Regular (non-fortified) rice distribution will continue uninterrupted through the **Public Distribution System (PDS)**, **ICDS**, and **PM Poshan** (Mid-Day Meal) schemes.

3. Understanding Rice Fortification

- **The Process:** Fortification involves adding essential vitamins and minerals to broken rice, forming **Fortified Rice Kernels (FRK)**, which are then blended with regular rice at a **1:100 ratio**.
- **FSSAI Standards:** In India, the **Food Safety and Standards Authority of India (FSSAI)** mandates the addition of three core micronutrients:
    - **Iron:** To combat widespread **anaemia**.
    - **Folic Acid (B9):** Crucial for fetal development and preventing neural tube defects.
    - **Vitamin B12:** Essential for nerve health and DNA synthesis.
- **Restoration:** Since polishing white rice removes **75–90%** of its natural B-vitamins, fortification acts as a public health tool to address "hidden hunger" without altering the taste or cooking method of the staple.

4. Nutritional Components and Their Importance

Nutrient	Biological Role	Deficiency Impact
Iron	Hemoglobin production	Anaemia (common in women/children)
Vitamin B12	Nerve insulation (Myelin)	Neurological issues; Megaloblastic anaemia
Folic Acid	Cell growth & DNA	Neural tube defects in newborns

Conclusion

The 2026 suspension of rice fortification reflects a shift toward **evidence-based policy making**. While the program was launched with the ambitious goal of eliminating malnutrition, the IIT Kharagpur study has exposed "operational realities" regarding India's long-term grain storage infrastructure. The temporary halt allows the government to re-evaluate packaging standards and premix stability before a potential relaunch, ensuring that the "fortified" label translates into actual nutritional benefits for the end consumer.

World Obesity Atlas 2026: India's Escalating Public Health Emergency

Why in News?

On **World Obesity Day (March 4, 2026)**, the World Obesity Federation released the **World Obesity Atlas 2026**. The report presents alarming data for India, identifying it as a global hotspot for childhood obesity. With millions of children already affected, the atlas warns of a massive surge in non-communicable diseases (NCDs) such as hypertension and diabetes by 2040 if immediate policy interventions are not implemented.

1. Key Findings: India and the Global Context

- **Childhood Obesity Crisis:** India has the **2nd-highest number of children with high BMI** globally (41 million), trailing only China.
    - **Ages 5–9:** Nearly **15 million** children were overweight or obese in 2025.
    - **Ages 10–19:** More than **26 million** children were affected in 2025.
- **Global Landscape:** Over **200 million** school-age children (5–19 years) living with obesity are concentrated in just **10 countries**. The world is currently set to miss the target to halve the rise in childhood obesity by 2030.
- **Projections (2025–2040):** The number of Indian children with disease indicators linked to high BMI is expected to rise sharply:
    - **Hypertension:** Increasing from 2.99 million to **4.21 million**.
    - **Hyperglycaemia:** Increasing from 1.39 million to **1.91 million**.
    - **Liver Disease (MASLD):** Increasing from 8.39 million to **11.88 million**.

2. Preventable Risk Factors in India

The report identifies several lifestyle and systemic factors driving this trend:

- **Physical Inactivity: 74% of adolescents** (11–17 years) fail to meet recommended physical activity levels.
- **Dietary Habits:** Children aged 6–10 consume up to **50 ml of sugary drinks daily**, while only **35.5%** of students receive nutritious school meals.
- **Infant Nutrition: 32.6% of infants** (1–5 months) experience sub-optimal breastfeeding, which is a known protective factor against later-life obesity.

3. Understanding Body Mass Index (BMI)

- **Definition:** A screening tool used to estimate body fat based on height and weight.

$$BMI = \frac{\text{weight (kg)}}{[\text{height (m)}]^2}$$

- **WHO Adult Classifications:**
    - **Underweight:** <18.5
    - **Healthy:** 18.5–24.9
    - **Overweight:** 25.0–29.9

4. Policy Recommendations

To combat this "silent pandemic," the World Obesity Federation has urged governments to take the following steps:

- **Fiscal Measures:** Implementing **taxes on sugar-sweetened beverages** to reduce consumption.
- **Marketing Restrictions:** Banning the marketing of ultra-processed foods to children, especially on **digital platforms**.
- **School Standards:** Enforcing healthier school food standards and protecting breastfeeding practices.

- **Health Integration:** Integrating obesity prevention and management into **primary healthcare systems**.

Conclusion

The 2026 Atlas underscores that obesity is no longer just a concern for high-income nations; it has become a defining health challenge for India's youth. The transition from infectious diseases to metabolic disorders represents a significant hurdle for the "Viksit Bharat" vision. Addressing this requires a multi-sectoral approach that moves beyond individual choice to address the **obesogenic environments** created by sedentary lifestyles and the availability of cheap, high-sugar foods.

Income Mobility Trends in India (2014–2025)

Why in News?

India's income mobility trends reveal a worrying shift, with the share of households experiencing **downward mobility** nearly doubling from **14% in 2015 to 26.8% in 2025**. This data challenges claims of inclusive growth and highlights rising economic vulnerability, particularly across rural areas and marginalized communities.

Note :

Between 2014 and 2025, more Indian households fell down the income ladder than moved up. Rural areas, Scheduled Castes (SCs), and Other Backward Classes (OBCs) faced the sharpest declines. To reverse this, strengthening rural livelihoods, MSMEs, and social inclusion through schemes like **PM-KUSUM, MUDRA, and PLI** is essential.

Key Trends in India's Income Mobility

- **Doubling of Downward Mobility:** By the end of 2025, more than **1 in 4 households** were worse off than in 2014.
- **Lagging Upward Movement:** Upward mobility increased to 23.5% but consistently trails the rate of downward movement.
- **Shrinking Middle Class:** Households remaining in their original income tier fell from over 70% to **under 50%**.
- **Rural vs. Urban Divide:** * **Rural:** Nearly 29% of households slid down the ladder.
    - **Urban:** Fared better with faster upward mobility, yet also saw a rise in economic insecurity.
- **Caste and Religion:** * **SC & OBC:** Experienced sharp spikes in downward mobility; upward movement for SCs remained muted.
    - **ST:** Showed lower downward mobility, likely due to targeted regional interventions.
    - **Religious Groups:** Declines were most pronounced among Hindu and Muslim households.

Defining Income Mobility

- **Definition:** The movement of households between income groups over time (upward, downward, or stagnant).
- **Significance:** It captures **dynamic inequality** rather than static poverty, indicating whether growth creates opportunities or vulnerabilities.

Causes for the Downward Shift

- **Rising Income Inequality:** Per the **World Inequality Report 2026**, the top 10% capture 58% of national income, while the bottom 50% receive only 15%.
- **K-shaped Recovery:** Post-Covid growth was concentrated in tech and finance, while tourism and retail workers faced lasting losses.
- **Informal Sector Distress:** MSMEs (contributing 30% of GDP) face credit constraints and weak demand.
- **Educational Gaps:** Only **4 Indian universities** rank in the global top 500 (2026), limiting access to high-productivity sectors for non-elite students.
- **Urban-Centric Growth:** Wealth is concentrated in hubs like Bengaluru and Gurugram, while rural regions face stagnant farm incomes and climate shocks.

Measures to Accelerate Upward Mobility

- **Rural Stabilization:** Expand **PM-KUSUM** and **Agriculture Infrastructure Fund** to diversify livelihoods.
- **MSME Support:** Improve credit access via **MUDRA** and **ECLGS**; encourage formalization through **Udyam Registration**.
- **Labor-Intensive Manufacturing:** Leverage **PLI Schemes** and **PM MITRA Parks** in textiles and electronics to create mass employment.
- **Education & Skills:** Strengthen the **National Education Policy 2020** and **Skill India Mission** to bridge productivity gaps.
- **Inclusive Entrepreneurship:** Utilize **Stand-Up India** and the **National SC/ST Hub** to reduce structural barriers.
- **Women's Participation:** Scaling **DAY-NRLM** could be transformative; the IMF suggests increasing female labor participation could raise **India's GDP by nearly 27%**.

Conclusion

India's growth story reflects a duality of remarkable progress alongside deep inequality. The path forward lies in ensuring that economic opportunity rises faster than household vulnerability.

India's Remarkable Fertility Transition

Why in News?

India has undergone a significant demographic shift over the last **25 years**, transitioning from a high-fertility nation to one where most states are at or below the **replacement level of 2.1**. Successive National Family Health Surveys (NFHS) confirm this trend, effectively diffusing the **"Population Bomb"** thesis which predicted that rapid growth would outpace India's resources.

Note :

India has reached **sub-replacement fertility**, with **NFHS-5** reporting a national **Total Fertility Rate (TFR) of 2.0**. This change is driven by female education, urbanization, and better contraceptive access. While this offers a **demographic dividend**, it also introduces challenges such as an **ageing population** and potential **workforce declines** in the future.

Key Facts: The Fertility Transition

- **Historical Context:** In the 1960s, India's TFR peaked at nearly **6 children per woman**. By 2000, it fell to approximately **3.5**.
- **NFHS-5 Benchmark:** The 2019–21 survey marked the first time India fell below the replacement level (2.1) at a national level.
- **Current Estimates (2023–2025):** India's TFR is now widely estimated to be around **1.9**.
- **Regional Variations:** Significant disparities remain. Southern states and urban areas see TFRs as low as **1.4–1.8**, while northern states like Bihar and Uttar Pradesh are still approaching the replacement level.
- **Future Projection:** The population is expected to peak at **1.7–1.9 billion** between the 2060s and 2080s before stabilizing.

Key Factors Driving Low Fertility

- **Female Education:** This is the primary driver. Women with **12+ years of schooling** have a TFR of **1.8**, compared to **2.8** for those with no schooling.
- **Urban-Rural Divide:** Urban TFR (~1.6) is lower than rural (~2.1) due to higher living costs and career focus.
- **Economic Pressures:** Job insecurity (~21%) and lack of affordable childcare (~18%) lead couples to delay parenthood.
- **Contraceptive Access:** Family planning programs have achieved a contraceptive prevalence rate of **~67%**.
- **Weakening Son Preference:** Increased education and changing gender roles have reduced the pressure for repeated childbirths to ensure a male heir.
- **Quality over Quantity:** Families now invest more in the education and health of fewer children. Infant mortality has dropped significantly (from 89 per 1000 in 1990 to **25 per 1000 in 2023**).

Implications of Low Fertility

Positive Impacts	Concerns & Risks
Demographic Dividend: Larger working-age population (15–59 years) relative to dependents.	**Ageing Population:** Elderly share projected to reach **~20% by 2050**, straining healthcare and pensions.
Reduced Resource Pressure: Eases strain on land, water, food, and the environment.	**Shrinking Workforce:** Potential labor shortages may slow future GDP growth and innovation.
Improved Social Services: Better access to quality education and healthcare.	**"Getting Old Before Rich":** Risk of inadequate safety nets for the elderly before reaching high-income status.
Women's Health: Lower fertility correlates with improved reproductive health and well-being.	**Sandwich Generation:** Working adults facing the double burden of raising children and caring for aging parents.

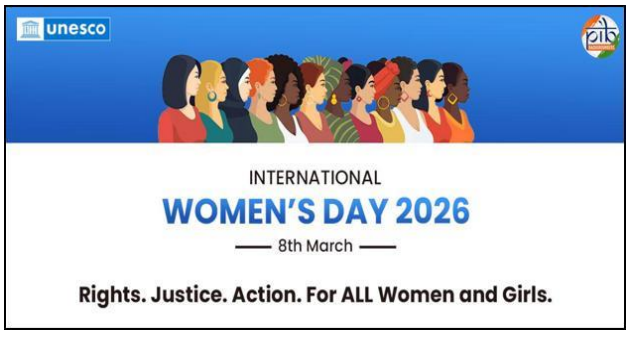
Measures for Sustainable Growth

- **Human Capital Investment:** Focus on the **National Education Policy (NEP) 2020** and skilling youth for AI and green energy jobs.
- **Pro-Family Environment:** Enhance childcare (**Anganwadi 2.0**), provide paid parental leave, and offer tax breaks to reduce the cost of raising children.
- **Prepare for the Silver Economy:** Specialized **geriatric healthcare**, universal pensions, and age-accessible urban design.
- **Manage Internal Migration:** Facilitate the movement of labor from high-fertility states (e.g., Bihar) to low-fertility states to fill workforce gaps.

Conclusion

India's move to sub-replacement fertility is a landmark shift. To maximize the benefits, the focus must now move from "controlling population" to "investing in people" through education, social security, and balanced regional management.

International Women's Day 2026 : Nari Shakti to Women-Led Development



Why in News?

India observed **International Women's Day (IWD)** on **8 March 2026**, aligned with the United Nations theme: **"Rights. Justice. Action. For ALL Women and Girls."** The occasion highlighted a strategic shift from "development for women" to **"women-led development,"** positioning women as central drivers of the **Viksit Bharat 2047** vision.

Note :

International Women's Day 2026 underscored India's progress in economic empowerment, defense, and STEM, supported by the **Nari Shakti Vandan Adhiniyam**. However, structural challenges like the **unpaid care burden**, **digital divide**, and **limited land ownership** persist. Achieving full gender equity requires deep reforms in the care economy, digital inclusion, and safer public spaces.

What is International Women's Day?

- **History:** Rooted in early 20th-century labor movements; formally recognized by the UN in **1977**.
- **2026 UN Theme:** "Rights. Justice. Action. For ALL Women and Girls."
- **2026 Campaign Theme: "Give to Gain,"** emphasizing that investing in women triggers exponential societal growth.

Advancing Nari Shakti Across Sectors

Economic Empowerment

- **Lakhpati Didi Initiative:** Targets creating **6 crore women** earning over 1 lakh rupees annually through Self Help Groups (SHGs).
- **Namo Drone Didi:** Provides 80% subsidies for agricultural drones, turning rural women into tech-entrepreneurs.
- **Financial Inclusion:** Under **PM MUDRA Yojana**, nearly 70% of collateral-free loans have been granted to women.

Defence and Security

- **Strength:** Women officers grew from 3,000 in 2014 to **over 11,000 in 2026**.
- **Breaking Barriers:** Women now receive **Permanent Commissions**, command warships, and fly fighter jets following the landmark *Babita Puniya (2020)* case.

Education and STEM

- **STEM Success:** Women constitute **43% of STEM graduates** in India, one of the world's highest ratios.

- **Infrastructure:** The **2026-27 Union Budget** mandated dedicated women's hostels in every district to support technical education.

Health and Sports

- **Maternal Health:** India's **MMR** declined to **80 per lakh live births**, an 86% drop since 1990.
- **Equal Pay in Sports:** The **BCCI** implemented equal match fees; over **3 lakh women** now participate in sports via the **ASMITA** initiative.

Political and Legal Agency

- **Reservation:** The **106th Amendment Act (2023)** guarantees **33% reservation** for women in Lok Sabha and Assemblies.
- **Safety: Mission Shakti** and the **SHe-Box portal** provide integrated support and grievance redressal for women.

Challenges in Advancing Nari Shakti

- **Land Rights:** Women make up 70% of the farm workforce but own only **13-14% of land**, limiting their access to credit and MSP.
- **Time Poverty:** Indian women spend **7.2 hours daily** on unpaid care work, compared to 2.8 hours for men.
- **"Sarpanch Pati" Syndrome:** Male relatives often exercise the actual power of elected female local leaders.
- **Health: 57% of women** aged 15-49 remain anemic, fueling a cycle of malnutrition.
- **Digital Gap:** Women are significantly less likely to own smartphones, hindering access to EdTech and FinTech.
- **Institutional Gaps:** Conviction rates for crimes against women remain low at **25-26%**, with high judicial pendency.

Measures to Strengthen the Vision

- **Land Models:** Adopt leasing models (like Kerala's *Kudumbashree*) to grant women "farmer status."
- **Care Economy:** Expand CSR investments in childcare and eldercare to reduce "time poverty."
- **Green Jobs:** Train women for roles in renewable energy and climate adaptation.
- **Political Mentorship:** Establish leadership academies for women in Panchayats to counter proxy-rule.
- **Urban Safety:** Use **CPTED (Crime Prevention Through Environmental Design)** in city planning to make public spaces safer.

Conclusion

The transition to women-led development is non-negotiable for a **Viksit Bharat**. Success depends on dismantling systemic barriers—specifically unequal land rights and the digital divide—to ensure gender equity becomes a lived reality by 2047.

Jan Aushadhi Diwas 2026

Why in News?

India celebrated **Jan Aushadhi Diwas** on **7 March 2026** under the theme **"Janaushadhi Sasti Bhi, Bharosemand Bhi, Sehat Ki Baat, Bachat Ke Saath."** During the event, the Prime Minister highlighted the success of the **Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP)** in making healthcare affordable for millions.

What is Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP)?

- **About:** A flagship mission administered by the **Department of Pharmaceuticals** (Ministry of Chemicals and Fertilisers).
- **Core Objective:** To provide quality **generic medicines** and surgical items at **50–80% lower costs** compared to branded alternatives, significantly reducing out-of-pocket healthcare expenses.
- **Evolution:** Originally launched in **2008** as the Jan Aushadhi Scheme; it was rebranded and expanded as **PMBJP in 2016**.

Product and Quality Standards

- **Portfolio:** Offers approximately **2,110 medicines** and **315 surgical items** across 29 therapeutic categories, including critical drugs for cancer, diabetes, and cardiovascular diseases.
- **Quality Assurance:** Medicines are sourced exclusively from **WHO-GMP certified** manufacturers and undergo rigorous testing in **NABL-accredited labs** to ensure high standards.

Key Citizen-Centric Initiatives

- **Janaushadhi Suvidha Sanitary Napkins:** Launched in 2019, these oxo-biodegradable pads are sold at a subsidized rate of **Rs 1 per pad** to improve menstrual hygiene.
- **Jan Aushadhi Sugam App:** A digital tool providing real-time data on **Kendra locations**, medicine availability, and price comparisons.
- **Inclusive Entrepreneurship:** The scheme offers one-time incentives of up to **Rs 2 lakh** to encourage entrepreneurs, particularly **women, SC/ST, Divyangjan, and ex-servicemen**, to open Kendras.

Strategic Expansion and Economic Impact

- **Target 2027:** Aiming to increase the number of Kendras from 18,000 (early 2026) to **25,000 by March 2027**, focusing on rural and underserved regions.
- **Innovative Reach:** Kendras are being established at **railway stations** (116 as of Jan 2026) and through **Primary Agricultural Credit Societies (PACS)** to leverage existing rural networks.
- **Savings:** By June 2025, the scheme resulted in estimated cumulative savings of **Rs 38,000 crore** for Indian citizens.

India Wins ICC Men's T20 World Cup 2026

Why in News?

The **India national cricket team** secured the **ICC Men's T20 World Cup 2026** title by defeating **New Zealand** by **96 runs** in the final held at the **Narendra Modi Stadium, Ahmedabad**. This victory marks India's largest-ever winning margin in a T20 World Cup final.

Key Highlights of the Final

- **Player of the Match:** Jasprit Bumrah.
- **Player of the Tournament:** Sanju Samson.
- **Prize Money:** India received **USD 3 million** from a total tournament prize pool of **USD 13.5 million**.

Historic Milestones

- **Triple Crown:** India became the first nation to win **three ICC Men's T20 World Cup titles** (2007, 2024, and 2026).
- **Title Defense:** The first team in history to **successfully defend** the T20 World Cup trophy.
- **Home Advantage:** The first host nation to win the tournament on **home soil**.

ICC World Rankings (As of March 2026)

The ICC uses a rating system developed by David Kendix, updated annually around **1 May**, to rank teams based on points divided by matches played.

- **Men's Team Rankings:**
  - **T20Is:** Rank 1
  - **ODIs:** Rank 1
  - **Tests:** Rank 4
- **Women's Team Rankings:**
  - **T20Is:** Rank 3
  - **ODIs:** Rank 3

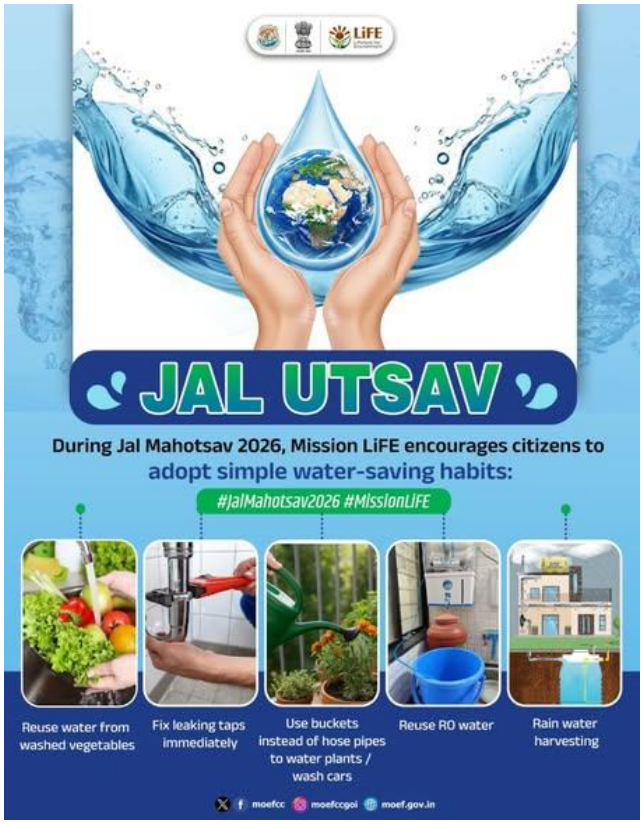
Governance and Regulation

- **International Cricket Council (ICC):** The global governing body representing **108 member countries**, headquartered in **Dubai, UAE**. It is responsible for organizing major championships and regulating international play.
- **Board of Control for Cricket in India (BCCI):** Established in **1928** and headquartered in **Mumbai**. It has been a **Full Member of the ICC** since its inception, governing all domestic and international cricket activities for India.

Future Outlook

- **Upcoming Edition:** The **ICC Men's T20 World Cup 2028** is scheduled to be co-hosted by **Australia and New Zealand**.

Jal Mahotsav 2026 Campaign



Why in News?

The Union Minister of Jal Shakti launched the nationwide **Jal Mahotsav 2026** campaign from Gujarat on **8 March 2026**. The launch coincided with **International Women's Day**, which was also observed as **"Sujalam Shakti Diwas"** to honor women's leadership in water governance.

Jal Mahotsav 2026: Overview

- **About:** An annual flagship initiative by the **Department of Drinking Water and Sanitation** (Ministry of Jal Shakti), held from **8 to 22 March**.
- **Tagline:** *"Gaon ka Utsav, Desh ka Mahotsav"* (Village's festival, nation's festival).
- **Objective:** To enhance **community participation** in managing rural drinking water and to drive water conservation efforts under the **Jal Jeevan Mission (JJM)**.

Key Ceremonies and Activities

- **Jal Arpan Diwas:** Marked the start of the campaign with the formal transfer of rural water assets to **Gram Panchayats (GPs)** and **Village Water and Sanitation Committees (VWSCs)**.
- **Jal Bandhan:** A symbolic ritual of tying sacred threads at water infrastructure sites to signify protection.
- **Jal Sankalp:** A collective community pledge to conserve water and maintain village delivery systems.

Multi-Level Implementation Structure

The campaign is executed across four levels—**National, State, District, and Gram Panchayat**—to ensure seamless coordination.

- **Gram Panchayat Level:** Features 'Har Ghar Jal' declarations, **'Jal Chaupal'** (community dialogues), and water quality testing demonstrations in local schools.

Women as Catalysts (Sujalam Shakti)

The campaign places women at the heart of water management, recognizing their role in shifting rural dynamics:

- **Water Quality:** Over **24 lakh women** are trained to use **Field Testing Kits (FTKs)** for regular water monitoring.
- **Leadership:** Acknowledges the contributions of women pump operators, **Self-Help Groups (SHGs)**, and VWSC members.
- **Impact:** Highlighting how tap water access has significantly reduced the physical and time burden of fetching water for women.

Convergence and Future Vision

- **Sujal Gram:** The initiative promotes inter-ministerial cooperation to create **water-sufficient villages**.
- **Viksit Bharat:** The movement contributes to the broader national goal of a **"Developed India"** by ensuring sustainable and clean water for every rural household.

Jal Jeevan Mission 2.0 : Extension and Structural Reforms

Why in News?

The Union Cabinet has officially approved the extension of the **Jal Jeevan Mission (JJM)** through **December 2028**. Transitioning into **JJM 2.0**, the mission received an enhanced total outlay of **Rs 8.69 lakh crore**. The focus has now shifted from mere infrastructure creation to **utility-based service delivery** and long-term sustainability.

JJM 2.0 Targets and Current Status

- **Universal Coverage:** Aims to provide functional tap water connections to all **19.36 crore rural households** by the new deadline of December 2028.
- **Progress (As of April 2026):** Approximately **15.80 crore (81.61%)** rural households have already been covered.
- **Certification:** JJM 2.0 mandates the formal certification of all **Gram Panchayats** as **'Har Ghar Jal'** based on actual service delivery rather than just pipeline installation.

Key Pillars of JJM 2.0

- **Sujalam Bharat Digital Framework:** A national digital architecture that assigns a unique **Sujal Gaon/Service Area ID** to every village. It provides a complete digital map of the supply chain from the water source to the individual tap.
- **Community Ownership (Jal Arpan):** It is now mandatory for **Gram Panchayats** and **Village Water Sanitation Committees (VWSCs)** to be involved in the commissioning process. A village is only "Har Ghar Jal" if it demonstrates functional **Operation and Maintenance (O&M)** mechanisms.
- **Utility-Based Approach:** Shifting the vision toward **Viksit Bharat @2047** by ensuring **24x7 water supply** through a "Whole of Government" strategy, treating water as a citizen-centric utility service.

Socio-Economic Impact of the Mission

Source	Key Impact Findings
SBI Research	Freed **9 crore women** from the chore of fetching water, significantly boosting their economic participation.
WHO	Saved **5.5 crore hours daily** for women; prevented **400,000 diarrheal deaths**; saved 14 million DALYs.
Prof. Michael Kremer	Estimated a **30% reduction in under-five mortality**, potentially saving 1,36,000 infant lives every year.
IIM-B & ILO	Generated **59.9 lakh direct** and **2.2 crore indirect** person-years of employment.

Constitutional & Legal Context

- **Article 47:** Directs the State to improve public health as a primary duty.
- **73rd Amendment:** Entrusts Gram Panchayats with the responsibility of managing drinking water (Entry 11 of the 11th Schedule).

PM-SETU Scheme : Upgrading ITIs for Modern Industry

Why in News?

The **Ministry of Skill Development and Entrepreneurship (MSDE)** has constituted a **National Steering Committee (NSC)** as the apex body to oversee the **Pradhan Mantri Skilling and Employability through Upgraded ITIs (PM SETU)** scheme. This move marks the operational phase of a massive **Rs 60,000 crore** initiative aimed at fundamentally transforming vocational training in India.

PM-SETU: Overview

- **About:** Approved by the Union Cabinet in **2025**, PM-SETU is an ambitious upgradation scheme designed to bridge the gap between traditional vocational training and modern industrial requirements.
- **Strategic Shift:** Moves from a "government-driven" model to an **"industry-led"** skilling approach. Private companies now take the lead in designing curricula, training methods, and infrastructure.

Key Pillars of the Scheme

Hub-and-Spoke Model

- **Hub ITIs: 200 "Hub" ITIs** will be developed as central institutes featuring state-of-the-art infrastructure.
- **Spoke ITIs:** Each Hub will mentor and support approximately **four "Spoke" ITIs** by sharing advanced equipment, digital resources, and specialized facilities.
- **Centres of Excellence:** The scheme will upgrade **five National Skill Training Institutes (NSTIs)**—located in **Bhubaneswar, Chennai, Hyderabad, Kanpur, and Ludhiana**—into global Centres of Excellence.

Governance through Special Purpose Vehicles (SPVs)

- **Public-Private Partnership:** Each upgraded ITI will be managed by an SPV where **industry partners hold 51% ownership** and the government holds 49%.
- **Funding:** Industry partners are eligible for up to **83% government funding** to modernize infrastructure and training delivery.
- **Anchor Industry Partners (AIPs):** The MSDE has invited major corporations to collaborate as AIPs to ensure training remains market-relevant.

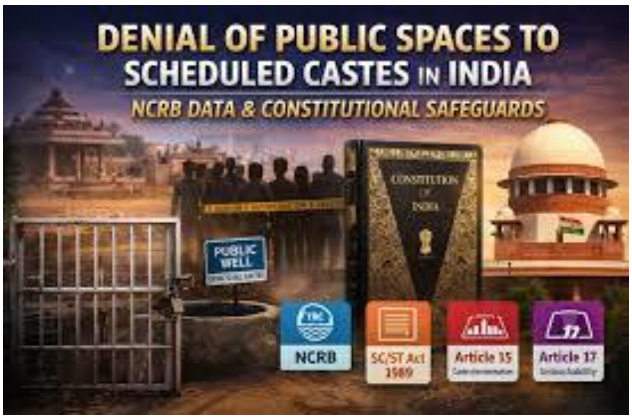
Modernizing the Training Ecosystem

- **Curriculum Redesign:** SPVs have the autonomy to propose new training delivery models and provide direct industry exposure to trainees.
- **New-Age Courses:** The **Directorate General of Training (DGT)** has introduced **31 new courses** under the Craftsmen Training Scheme (CTS).
- **Target Sectors:** Training is specifically focused on high-growth sectors:
  - Advanced Manufacturing
  - Electronics & Semiconductors
  - Green Mobility (Electric Vehicles)
  - Logistics and Supply Chain Management

Significance for Employment

By aligning ITI outputs with the actual needs of the private sector, PM-SETU aims to drastically improve the **employability** of vocational graduates. The integration of 51% industry ownership ensures that the students are trained on the same machines and processes they will encounter in modern factories.

NCRB Data : Denial of Public Access to Scheduled Castes



Why in News?

Data from the **National Crime Records Bureau (NCRB) Crime in India 2023** report has highlighted a concerning rise in cases where **Scheduled Castes (SCs)** were denied access to public spaces. These cases, registered under the **SC/ST (Prevention of Atrocities) Act, 1989**, reveal that despite legal abolition, "informal" untouchability persists in several pockets of the country.

NCRB Data Insights: The Uttar Pradesh Outlier

- **National Statistics:** Out of **180 cases** of denial of access reported nationwide, **173 were from Uttar Pradesh** (over 96%).
- **Rising Trend:** The concentration in UP has grown sharply, from 68% of national cases in 2018 to nearly **98% in 2022**.
- **Reporting vs. Incidence:** Experts suggest this spike is driven by both a persistent social reality and a significant increase in the **registration of FIRs** and police activism in the state.

- **SC vs. ST:** Interestingly, cases of denial of access involving **Scheduled Tribes (STs)** remain relatively low across India compared to SCs.

Underlying Reasons for Exclusion

- **Caste-Based Spatial Segregation:** In many rural areas, "informal geographies" persist. Dominant castes often maintain exclusive control over **temples, water bodies, cremation grounds**, and specific village pathways.
- **Ritual Purity Notions:** Modernization has not entirely erased orthodox beliefs. The entry of an SC individual into shared commons is still viewed by some conservative elements as "polluting."
- **Economic Dependence:** Since a vast majority of rural SC populations are landless laborers, their economic dependence on dominant groups allows the latter to enforce exclusion through **social boycotts or intimidation**.
- **Enforcement Gaps:** Despite the 1989 Act, victims often face delays in FIR registration and low conviction rates, which weakens the law's deterrent effect.

Legal and Institutional Safeguards

The Indian Constitution and statutes provide a multi-layered shield against such discrimination:

Provision	Function
Article 15	Prohibits discrimination and guarantees equal access to shops, wells, roads, and public places.
Article 17	**Abolishes Untouchability** and makes its practice a punishable offence.
SC/ST Act, 1989	Specifically criminalizes the act of preventing entry to temples, water sources, or community resources.
Article 21	Interpreted by courts to include the **Right to Dignity**, free from social exclusion.
73rd Amendment	Reserves seats in **Panchayati Raj** to ensure marginalized groups have a say in village resource management.

Key Judicial Precedent:

- **Arumugam Servai vs. State of Tamil Nadu (2011):** The Supreme Court directed administrations to ruthlessly eliminate "spatial segregation," such as the discriminatory **"two-tumbler system"** in tea stalls.

Steps to Democratize Public Spaces

1. **Ensure Spatial Justice:** Locate new public facilities (Anganwadis, PDS shops, wells) in **neutral or SC-dominated areas** to break traditional gatekeeping by dominant castes.
2. **Link Funds to Social Audits:** Development grants to Gram Panchayats should be linked to certifications that **no untouchability or exclusion** exists in the village.
3. **Official Accountability:** Enforce **Section 4** of the SC/ST Act, which penalizes public officials for neglecting their duty to register or investigate these cases.
4. **Exclusive Special Courts:** Establish dedicated district-level courts to ensure **speedy trials**, reducing the time victims spend seeking justice.
5. **Behavioural Campaigns:** Use the life and teachings of **B.R. Ambedkar and Jyotirao Phule** to promote constitutional morality at the grassroots.

Conclusion

The denial of access to public spaces is a direct violation of the democratic promise of equality. While the **NCRB data** reflects a proactive registration trend in states like Uttar Pradesh, the ultimate goal remains the total eradication of caste-based barriers to ensure every citizen can live with unhindered dignity.

Kisan Credit Card (KCC) & Modified Interest Subvention Scheme (MISS)

Why in News?

As of **March 2026**, the Union Government has significantly enhanced the **Kisan Credit Card (KCC)** framework to bolster rural liquidity. By increasing loan limits and integrating digital reforms through the **Kisan Rin Portal**, the government aims to achieve "KCC Saturation," ensuring that every eligible farmer—including those in allied sectors like fisheries

and animal husbandry—has access to formal, low-interest credit.

Note

The KCC scheme, supported by the **Modified Interest Subvention Scheme (MISS)**, provides a single-window credit system for farmers' cultivation and consumption needs. Recent updates for the **2025-26** cycle have raised the crop loan limit to **Rs 5 lakh** and the collateral-free limit to **Rs 2 lakh**. With over **7.72 crore active cards**, the scheme remains the backbone of affordable agricultural financing in India, offering an effective interest rate as low as **4%**.

Key Enhancements for 2025–26

Raised Credit Limits

- **MISS Crop Loan Limit:** The ceiling for short-term crop loans under the interest subvention umbrella has been increased from Rs 3 lakh to **Rs 5 lakh**.
- **Allied Sector Limit:** The credit limit for fisheries, animal husbandry, and dairying has also been enhanced to **Rs 5 lakh**.
- **Collateral-Free Loans:** In a major relief for small farmers, the limit for loans requiring no collateral was raised to **Rs 2 lakh** per borrower (effective January 1, 2025).

Concessional Interest Rates

- **Base Rate:** Short-term agricultural loans are provided at a benchmark interest rate of **7%**.
- **Prompt Repayment Incentive (PRI):** Farmers who repay their dues on time receive an additional **3% subvention**.
- **Effective Rate:** For disciplined borrowers, the actual cost of credit is just **4% per annum**.

Digital Reforms & Implementation

- **Kisan Rin Portal (KRP):** Launched in late 2023, this unified digital platform has revolutionized credit delivery. It integrates farmer data with bank disbursements, automating interest subvention claims and reducing the "paperwork lag" that previously delayed fund releases.
- **Jan Samarth Integration:** The KCC application process is now linked with the **Jan Samarth Portal**, allowing for digital approvals and faster onboarding using **PM-KISAN** database credentials.
- **RuPay KCC Cards:** Transitioning to RuPay-enabled cards has turned the KCC into a functional ATM/Debit card, allowing farmers to make flexible withdrawals and digital payments directly at point-of-sale (PoS) terminals.

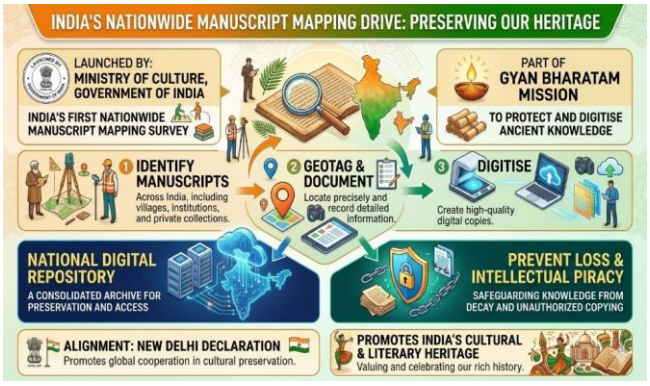
Impact and Outreach (March 2026)

- **Active Portfolio:** Over **7.72 crore** active KCC accounts with a total outstanding credit of **Rs 10.2 lakh crore**.
- **Banking Network:** Supported by a massive architecture of **457 banks**, including 37 commercial, 46 regional rural, and 374 cooperative banks.
- **Small & Marginal Focus:** Approximately **76%** of all KCC accounts are held by small and marginal farmers, highlighting the scheme's role in grassroots financial inclusion.
- **Risk Mitigation:** In the event of severe natural calamities, the scheme allows for the **restructuring of loans**, with interest-free periods extendable up to **5 years** based on High-Level Committee recommendations.

Conclusion

The evolution of the KCC into a high-tech, high-limit credit tool reflects India's shift toward **"investment-led"** agriculture. By removing collateral barriers and slashing interest rates, the government is effectively shielding farmers from high-interest informal moneylenders while providing the capital necessary for modernizing farm practices.

India's 1st Manuscript Mapping Drive (Gyan Bharatam Mission)



Why in News?

On **March 16, 2026**, the Ministry of Culture launched the **Gyan Bharatam National Manuscript Survey**, a first-of-its-kind three-month nationwide drive. This ambitious project aims to identify, document, and map India's vast manuscript heritage, which is estimated to be the world's largest with approximately **1 crore (10 million)** ancient texts.

Note

The survey is a core component of the **Gyan Bharatam Mission**, a national initiative approved with a budget of **Rs 491.66 crore** (2025–2031). By creating a comprehensive "Manuscript Presence Map," the government seeks to curb intellectual piracy and safeguard traditional knowledge. The mission transitions India's manuscript preservation from traditional cataloguing to a high-tech digital era, ensuring these "living legacies" are accessible to global scholars and future generations.

Manuscript Mapping Survey: Framework and Strategy

- **Bottom-Up Approach:** The survey is being conducted from the **district level upwards**. Data is collected by local teams and aggregated through state-level committees (chaired by the Chief Secretary) and district-level committees (chaired by the District Magistrate).
- **Consolidated Database:** The goal is to create a single, unified **National Digital Repository** of all manuscripts held by institutions, libraries, temples, and private individuals.
- **Non-Intrusive Participation:** The process is voluntary. Documentation does not affect the ownership of the physical manuscript; it only records its existence and metadata for the national map.

Technology Integration

- **Gyan Bharatam App:** Survey teams and individual custodians use a dedicated mobile application to upload basic details (location, ownership type, approximate count, and language).
- **Geotagging:** Every identified repository is **geotagged**, allowing the government to track the geographical spread of specific knowledge systems and plan targeted conservation efforts.
- **AI and HTR:** The mission plans to use **Artificial Intelligence (AI)** and **Handwritten Text Recognition (HTR)** to assist in the high-quality digitisation and translation of diverse scripts.

Policy and Global Vision

- **New Delhi Declaration (2025):** The initiative is rooted in the "Gyan Bharatam Sankalp Patra" adopted during the International Gyan Bharatam Conference in September 2025. It pledges to make India a global hub for manuscript research.
- **Viksit Bharat 2047:** The mission is a key pillar in the vision of a developed India, positioning traditional Indian Knowledge Systems (IKS) as the cornerstone of the nation's civilisational identity.
- **Intellectual Property:** By documenting these texts, India establishes a formal record of its traditional knowledge, providing a legal shield against **intellectual piracy** and the misappropriation of indigenous wisdom.

Significance of India's Manuscript Wealth

India possesses an unparalleled variety of manuscripts inscribed on materials like **palm-leaf, birch-bark (bhojpatra), cloth, and handmade paper**. These texts cover a vast range of subjects:

- Philosophy and Spirituality
- Medicine (Ayurveda) and Science
- Mathematics and Astronomy
- Arts, Literature, and Governance

Conclusion

The **Gyan Bharatam Mission** represents a shift from viewing manuscripts as stagnant "relics" to treating them as active sources of innovation. By combining the spirit of *Jan Andolan* (people's movement) with cutting-edge technology, the survey aims to rescue millions of uncatalogued texts from physical decay and ensure that India's "Scented Gold" of knowledge is preserved for the world.

Menstrual Leave Policy : Supreme Court's Balance of Rights and Reality

Why in News?

In **March 2026**, the **Supreme Court of India (SC)**, while hearing a petition for a uniform national menstrual leave policy, expressed significant caution. The Court noted that making paid menstrual leave a **mandatory statutory right** could unintentionally backfire, leading to workplace discrimination and harming women's career prospects. The Bench, led by the Chief Justice, emphasized that such a move might discourage employers from hiring women or considering them for leadership roles due to perceived "cost" and "absence" factors.

Note :

The debate centers on whether menstrual leave is a fundamental aspect of the **Right to Dignity (Article 21)**. While proponents argue it acknowledges biological realities like **dysmenorrhea** (severe period pain), the SC favors a "consultative approach." The Court suggested that the executive and legislature should frame a model policy after talking to stakeholders, rather than the judiciary imposing a one-size-fits-all mandate that could lower the **Female Labour Force Participation Rate (LFPR)**, which stood at **41.7% in 2023-24**.

Key Observations of the Supreme Court

- **Unintended Discrimination:** A mandatory law might lead to a "hiring bias," where employers perceive women as less "available" than men for critical projects.
- **Executive Domain:** The Court stated that framing such a policy involves complex socio-economic considerations, which falls under the jurisdiction of the **Ministry of Women and Child Development**.
- **Voluntary vs. Mandatory:** The SC supported voluntary initiatives by states (like Bihar and Kerala) and private companies (like Zomato and Swiggy) rather than a rigid central law.
- **Fundamental Right:** Interestingly, in the related case of *Dr. Jaya Thakur v. Govt of India (2026)*, the SC recognized **Menstrual Health and Hygiene (MHH)** as a fundamental right under Article 21.

Arguments in the Menstrual Leave Debate

In Favour (Pro-Leave)

- **Substantive Equality:** Recognizes that equality isn't just about identical treatment, but accommodating biological differences.
- **Constitutional Mandate:** Supported by **Article 15(3)** (special provisions for women) and **Article 42** (humane conditions of work).
- **Health & Productivity:** Addressing "presenteeism" (working while unwell) can actually improve long-term employee retention and well-being.

Against/Concerns (The "Cost" Argument)

- **Career "Glass Ceiling":** Could be used as an excuse to deny women promotions or high-responsibility roles.
- **Economic Burden:** Small businesses and MSMEs might find paid leave for a significant portion of their workforce financially straining.
- **Low Utilization:** Global data (Japan/South Korea) shows that even where the law exists, less than **1%** of women use it due to social stigma and fear of being judged by peers.

Current Status: India and the World

- **India (State Level): Bihar** has offered two days of monthly leave since 1992. **Kerala** recently introduced menstrual leave for female students in state universities.
- **India (Private Sector):** Companies like Zomato, Swiggy, and Byju's have introduced voluntary period leave policies.
- **Global Scene: Spain** became the first European country to introduce state-funded paid period leave. In Asia, countries like Japan, Indonesia, and Taiwan have had such laws for decades, though cultural stigmas persist.

Towards "Menstrual Equity": The Path Forward

To support menstrual health without triggering workplace bias, experts suggest:

1. **Gender-Neutral "Health Leave":** Introducing a short-term (1-2 days/month) leave for anyone suffering from acute conditions like migraines or dysmenorrhea to avoid targeting one gender.
2. **Workplace Accommodations:** Providing flexible hours, work-from-home options, or rest areas instead of a full day "off."
3. **Educational Support:** Adopting the "Kerala Model" in universities to allow attendance relaxation, helping reduce dropouts among adolescent girls.
4. **Incentivizing ESG:** Encouraging companies to adopt these policies as part of their **Environmental, Social, and Governance (ESG)** ratings.

Conclusion

The menstrual leave debate is a critical intersection of **biological reality** and **economic equality**. While the SC has protected the current progress of women in the workforce by avoiding a "forced" mandate, the recognition of menstrual health as a fundamental right ensures that the conversation remains active. The goal is to reach a stage where "liberty to bleed" does not come at the cost of the "liberty to lead."

EDITORIALS

Crux of The Hindu & Indian Express

Indian Society & Social Justice

Government Directs BARC to Stop Reporting TRPs for TV News Channels

The Indian EXPRESS

Stop reporting TRPs for TV news channels immediately: Govt to BARC amid West Asia conflict

1. Why in News?

- The **Ministry of Information and Broadcasting (I&B)** directed the **Broadcast Audience Research Council (BARC)** to **stop reporting Television Rating Points (TRPs) for TV news channels** for **four weeks** or until further orders.
- The decision was taken amid the **ongoing Israel–Iran conflict in West Asia**.
- The government said some TV channels were broadcasting **sensational and speculative content**, which could **create panic among the public**.

2. Reason for the Government's Decision

- The government observed that certain **TV news channels** were:
  - Showing **unwarranted sensationalism**
  - Broadcasting **speculative reports**
  - Creating **fear and confusion among viewers**

- This could particularly affect people who have **friends or family living in conflict areas in West Asia**.
- Therefore, the government asked **BARC to temporarily stop publishing TRP ratings for news channels**.

3. Legal Basis for the Directive

- The order was issued under **Clause 24.2 of the Policy Guidelines** governing **BARC operations**.
- This clause states that the organisation must **follow directions issued by the Ministry of Information and Broadcasting from time to time**.
- The government used this provision **in the public interest** to control **sensational coverage during an international conflict**.

4. Previous TRP Suspension

- This is not the first time TRP ratings were suspended.
- In **2020**, the **I&B Ministry temporarily suspended TRP ratings for news channels** after allegations of **TRP manipulation**.
- The action followed a **Mumbai Police investigation into certain broadcasters**.

5. What is BARC (Broadcast Audience Research Council)?

- The **Broadcast Audience Research Council (BARC)** is India's official **television audience measurement body**.
- **Key facts:**
  - Established in **2010**
  - Headquartered in **Mumbai**
  - It is a **joint industry body** formed by:
    - **Broadcasters**
    - **Advertisers**
    - **Advertising Agencies**
- BARC manages the **TV audience measurement system in India**.
- It is currently the **only organisation authorised to publish TV viewership data**.

6. What is Television Rating Point (TRP)?

- **Television Rating Point (TRP)** is a **metric used to measure the popularity and viewership of TV programmes**.

Important points:

- Higher **TRP** means **more viewers watching the programme**
- TRP helps determine **which shows are popular**
- Advertisers use TRP data to **decide where to place advertisements**

Thus, TRPs influence:

- **Advertising revenue**
- **Channel popularity**
- **Investment decisions**

7. How TRP is Calculated in India

- In India, **BARC calculates TRPs using special devices called People Meters or BAR-O-Meters**.
- These devices are installed in **selected households across the country**.
- **Key features of the system:**
  - Uses **audio watermark technology**
  - Tracks **which channels and programmes are being watched**
  - Measures **viewing duration**
- The collected data is then **analysed and extrapolated** to estimate the **viewership of the entire population**.

8. Other Methods Used

- Another method used is **Picture Matching**.
- In this method:
  - The device captures a **small portion of the picture displayed on TV**
  - The data is matched with broadcast content
  - This helps identify the **exact programme being watched**

9. Release of TRP Data

- **BARC normally releases TRP ratings every Thursday**.
- These ratings rank:
  - **TV channels**
  - **Television programmes**
- This ranking is important for **advertisers and broadcasters**.

Conclusion

The government's decision to **temporarily stop TRP reporting for TV news channels** aims to reduce **sensationalism and panic during the ongoing West Asia conflict**. Since **TRP ratings strongly influence media competition and advertising revenue**, suspending them may encourage **more responsible and balanced news coverage during sensitive international events**.

Health Crisis in Indian Prisons : The HSV Outbreak Challenge

Why in News?

A recent outbreak of the **Herpes Simplex Virus (HSV)** at the Jalpaiguri Central Correctional Home in West Bengal has brought national attention to the dire state of healthcare in India's prisons. The crisis, characterized by painful skin infections spreading rapidly among inmates, underscores the dangerous intersection of **persistent overcrowding**, poor sanitation, and a critical shortage of medical personnel in the correctional system.

Note :

The HSV outbreak is a symptom of a larger systemic failure. According to the **Prison Statistics India 2023** (NCRB), India's prison occupancy rate stands at **120.8%**, with some facilities exceeding 400%. This congestion facilitates the spread of infectious diseases like **TB, HIV, and skin ailments**. While the **Model Prisons and Correctional Services Act, 2023** provides a blueprint for reform, the transition from a "punitive" to a "reformative" healthcare model remains slow across most states.

What is Herpes Simplex Virus (HSV)?

- **Nature:** A common viral infection spreading through skin-to-skin contact.
- **Types:** * **HSV-1:** Primarily causes oral herpes (cold sores).
    - **HSV-2:** Primarily causes genital herpes.
- **Symptoms:** Painful blisters, fever, and swollen lymph nodes. While often mild, it can lead to severe complications like **meningitis** or **encephalitis** in crowded, high-stress environments.
- **Management:** The virus remains in the body for life; however, antiviral medications can manage outbreaks and reduce transmission.

Major Concerns in Indian Prisons (2025–26)

- **The Overcrowding Epidemic:** High numbers of **undertrials** (who often lack legal aid) drive congestion. In West Bengal, several prisons operate at **160% capacity**, creating "hotbeds" for viral and fungal transmission.
- **Epidemiological Risks:** Prisoners are **five times more likely** to develop Tuberculosis (TB) than the general population. In humid climates, up to **30% of inmates** suffer from chronic skin diseases.
- **Mental Health Crisis:** Suicides account for nearly **80% of "unnatural deaths"** in jails. India currently has only **25 psychologists** for a population of roughly 5.7 lakh inmates.
- **Human Resource Crunch:** There is a **43% vacancy rate** for medical officers. The inmate-to-doctor ratio is nearly triple the standard prescribed by the **Model Prison Manual, 2016**.
- **Gender and Vulnerability:** Female inmates (4% of the population) frequently lack access to gender-sensitive healthcare and menstrual hygiene products.

Regulatory and Legal Framework

- **Constitutional Protections:** * **Article 21:** Right to life with dignity (includes right to health).
    - **Article 39A:** Mandatory free legal aid for those who cannot afford it.
- **Statutory Reforms:** The **Model Prisons and Correctional Services Act, 2023** replaced the 1894 colonial-era law, focusing on vocational training and psychological counseling.
- **Committees:** The **Justice Amitava Roy Committee (2018)** recommended fast-tracking petty offenses to de-congest jails, while the **Krishna Iyer Committee (1987)** advocated for exclusive female institutions.

Recommended Measures for Strengthening Prison Health

1. **Judicial De-congestion:** Strengthen **Undertrial Review Committees (URCs)** to release those eligible for bail, significantly reducing the "viral load" of the facility.

2. **NHM Integration:** Link prison clinics directly with the **National Health Mission (NHM)** and **Ayushman Bharat** to ensure a steady supply of medicines and specialized doctors.
3. **Telemedicine:** Scale up **eSanjeevani** platforms within prisons to provide specialist consultations without the security risks of transporting inmates to external hospitals.
4. **Preventive Screening:** Shift from "reactive" to "preventive" care by conducting mandatory medical screenings for TB, HIV, and HSV at the point of entry.
5. **Alternative Sentencing:** Utilize the **Bharatiya Nyaya Sanhita (BNS), 2023** provisions for community service and "open prisons" for first-time, non-violent offenders.

Conclusion

The HSV outbreak serves as a stark reminder that prisoners do not lose their fundamental **Right to Life** upon incarceration. To prevent prisons from becoming "death traps" of infectious disease, the state must fulfill its constitutional obligation under **Article 21**, ensuring that healthcare standards behind bars match those available to the general public.

Women's Political Participation in India: The Representation Paradox

Why in News?

Despite near-gender parity in voter turnout, women's actual representation in India's top decision-making bodies remains a democratic paradox. As of **April 2026**, the focus has shifted toward the implementation timeline of the **Nari Shakti Vandan Adhiniyam (106th Amendment Act)**, which is slated for execution only after the **Census 2026-27** and subsequent delimitation, likely by the **2029 General Elections**.

Note

India has witnessed a "silent revolution" at the ballot box, with women voting at rates equal to or higher than men in the **2019 and 2024 General Elections**. However, this has not translated into legislative presence. The **18th Lok Sabha (2024)** saw a slight dip in women MPs to **74 (13.6%)**, down from 78 in the 17th Lok Sabha. While grassroots governance thrives with **44% women in Panchayats**, a "representation deficit" persists at the State and National levels, hampered by structural gatekeeping and socio-economic barriers.

Current Status of Women in Indian Politics (2024–2026)

- **As Voters:** The gender gap in turnout has effectively closed. In the **2024 elections**, female voter turnout was recorded at **65.78%**, slightly higher than the male turnout of **65.55%**.
- **As Candidates:** Out of 8,360 candidates in 2024, only **800 (9.6%)** were women. Notably, **152 constituencies** had zero women candidates, reflecting a "pipeline" crisis.
- **In Parliament (18th Lok Sabha):** 74 women were elected (13.6%). **West Bengal** leads with the highest number of women MPs (11), followed by **Uttar Pradesh** and **Maharashtra** (7 each).
- **In State Assemblies:** Representation remains stagnant at an average of **9% to 10%**. Uttar Pradesh has the highest absolute number of women MLAs (47).
- **In Local Bodies:** A major success story, with over **1.4 million** elected women representatives in PRIs and ULBs, driven by the **73rd and 74th Amendments**.

Structural and Socio-Cultural Barriers

1. **"Winnability" Myth:** Political parties often deny tickets to women under the assumption they are less likely to win, despite data showing women candidates often have higher success rates (9% win rate for women vs. 6% for men in 2024).
2. **The "Sarpanch Pati" Phenomenon:** At the grassroots, male relatives often exercise actual power (proxy representation), though

digital literacy and SHGs are gradually dismantling this.

3. **Economic Hurdle:** Elections are capital-intensive. Women often lack access to independent wealth or the male-dominated "donor networks" that fund high-stakes campaigns.
4. **Digital Misogyny:** A **March 2026 ADR report** highlighted that women candidates increasingly face gender-targeted **deepfakes** and character assassination online, acting as a deterrent for new entrants.

Key Initiatives to Bridge the Gap

- **Nari Shakti Vandan Adhiniyam (2023):** Mandates **33% reservation** for women in Lok Sabha and State Assemblies. It is currently in a "waiting period" pending the **2026-27 Census**.
- **Pink Polio Booths:** The Election Commission's "Sakhi" booths, managed entirely by women, have successfully boosted female turnout in conservative pockets.
- **Self-Help Groups (SHGs):** Millions of women in SHGs are transitioning from micro-finance to local leadership, serving as a vital "leadership nursery" for the nation.

Proposed Measures for Strengthening Participation

- **Inner-Party Quotas:** Amending the **RPA, 1951** to make party registration contingent upon 33% internal reservation for women in organizational roles (e.g., Working Committees).
- **Dual-Member Constituencies:** A model where certain seats elect two representatives (one male, one female), preventing the displacement of existing leaders while ensuring gender balance.
- **Financial Engineering:** Creating **Electoral Trusts** specifically for women candidates with enhanced tax benefits for corporate donors.
- **Shadow Cabinets:** Encouraging the opposition to appoint women to "hard" shadow portfolios like **Finance or Defense** to build their public administrative profile.

Conclusion

The transition from being "silent voters" to "powerful legislators" is the next frontier for Indian democracy. While the **Nari Shakti Vandan Adhiniyam** provides the legal roadmap, true equality will require a shift in political culture—from treating women as a "vote bank" to recognizing them as essential "policy architects" for a **Viksit Bharat**.

Supreme Court Ruling on Adoptive Mothers and Paternity Leave (2026)

Why in News?

In a landmark judgment delivered in **March 2026**, the **Supreme Court of India** expanded the scope of maternity benefits, ruling that **adoptive mothers** are entitled to maternity leave regardless of the child's age. The Court declared maternity leave a **basic human right** and an essential tool for workplace equality. Furthermore, the Bench issued a significant directive to the **Union Government** to recognize **paternity leave** as a statutory social security benefit to ensure parenthood is treated as a shared responsibility.

Note :

The Supreme Court struck down **Section 60(4) of the Code on Social Security, 2020** (which replaced the Maternity Benefit Act, 1961, in November 2025). This specific provision had restricted the **12-week maternity benefit** only to mothers adopting infants below three months of age. The Court labeled this restriction "unconstitutional and discriminatory," noting that the legal adoption process in India is lengthy, making a three-month age cap practically impossible and "otiose" (pointless).

Key Judicial Observations

- **Striking Down Age Restrictions:** The Court held that an adoptive mother's rights and responsibilities are identical to those of a

biological mother. Restricting leave based on the child's age was deemed an arbitrary barrier to bonding and care.

- **Reproductive Autonomy:** Adoption was elevated to an **"expression of reproductive autonomy."** The Court emphasized that family identity is forged through emotional bonds and caregiving, not just biological ties.
- **Maternity Leave as "De-familisation":** The Bench noted that maternity benefits serve as an instrument of "de-familisation"—meaning they reduce a woman's financial dependence on her family, protecting her **economic independence** and preventing workplace exclusion due to motherhood.
- **Impact on the Girl Child:** The Court warned that without adequate leave, mothers are often forced back to work early, shifting childcare to older siblings. If the caregiver is a **girl child**, this often leads to school dropouts, reinforcing cycles of gender inequality.

The Call for Statutory Paternity Leave

The Supreme Court made a strong case for the legal recognition of fathers in the childcare process:

- **Shared Responsibility:** The Court observed that parenthood is not solely a mother's role. The absence of a legal framework for paternity leave reinforces patriarchal norms that place the entire burden of care on women.
- **Social Security Benefit:** The Union Government has been urged to introduce **statutory paternity leave** to foster parent-child bonding and provide necessary support systems for the mother during the early stages of child-rearing.

Context: Code on Social Security, 2020

The ruling comes shortly after the full implementation of the **New Labour Codes** in **November 2025**. While the 2020 Code consolidated several labor laws, the Supreme Court's intervention ensures that the transition to the new legal framework does not dilute the fundamental rights of women and unconventional families.

Conclusion

This judgment represents a progressive shift in Indian jurisprudence, moving from a biology-centric view of motherhood to a **rights-based approach to caregiving**. By challenging the "three-month" rule and advocating for paternity leave, the Supreme Court has aimed to dismantle structural barriers that force women to choose between their careers and their children. The focus now shifts to the Union Government's legislative response to formalize paternity benefits in the upcoming parliamentary sessions of 2026.

Evaluation of AB-PMJAY : The Challenge of Out-of-Pocket Expenditure (2026)

Why in News?

An evaluation study commissioned by **NITI Aayog** and submitted to the **Development Monitoring and Evaluation Office (DMEO)** has highlighted a critical gap in the **Pradhan Mantri Jan Arogya Yojana (PMJAY)**. Despite being designed as a "cashless" scheme, the study reveals that beneficiaries continue to incur significant **Out-of-Pocket Expenditure (OOPE)**, particularly in private hospitals.

Note

While AB-PMJAY has issued over **42 crore Ayushman Cards** by late 2025, providing a vital safety net for secondary and tertiary care, the NITI Aayog study found that **65% of beneficiaries** still faced personal expenses during hospitalization. The financial burden in private facilities (avg. **₹53,965**) is more than double that of public facilities (avg. **₹21,827**). This "distress financing" is primarily driven by costs for medicines, diagnostics, and non-covered items like transportation, suggesting a need for tighter regulatory oversight of empanelled private providers.

Key Findings: The OOPE Crisis

- **Private vs. Public Disparity:** OOPE in private hospitals is significantly higher, indicating that the "cashless" promise is often breached through extra charges for supplies or services.
- **Inadequate Financial Shield:** The average OOPE for PMJAY patients (₹34,790) is only marginally lower than that of uninsured patients (₹38,084), showing a difference of only **₹3,294**.
- **Major Cost Drivers:** * **Medicines & Diagnostics:** Patients are often asked to purchase these from outside the hospital.
    - **Transportation:** Explicitly not covered under the current scheme framework.
- **Cashless Gap:** Only **35%** of beneficiaries experienced a truly cashless transaction at the point of care.

About Ayushman Bharat PM-JAY

- **Launched:** September 2018; it is the **world's largest** government-funded health assurance scheme.
- **Objective:** To provide **Universal Health Coverage (UHC)** and prevent families from falling into poverty due to catastrophic health expenses.
- **Institutional Framework:** Managed by the **National Health Authority (NHA)** at the center and **State Health Agencies (SHAs)** at the state level.

Coverage and Architecture

- **Benefit Cover: ₹5 lakh per family per year** for secondary and tertiary care.
- **Inclusions:** Covers **3 days** of pre-hospitalization and **15 days** of post-hospitalization expenses. All pre-existing diseases are covered from **Day 1**.
- **Funding:** Shared between Centre and States (**60:40** for most states; **90:10** for NE/Himalayan states).
- **Target Audience:** Originally targeted the bottom **40% of the population** based on **SECC 2011** data (approx. 12 crore families).

Recent Expansions (2024–2026)

- **Senior Citizens (70+):** In September 2024, the scheme was expanded to cover **all citizens aged 70 and above**, regardless of income, through the **Ayushman Vay Vandana Card**.
- **Frontline Workers:** Coverage now includes **ASHA workers**, **Anganwadi Workers (AWWs)**, and **Anganwadi Helpers (AWHs)**.
- **Digital Integration:** The **Ayushman App** and **U-WIN** (for related health tracking) have streamlined card creation and self-verification.

Operational Features

- **National Portability:** A beneficiary can receive treatment in any empanelled hospital across India, regardless of their home state.
- **Empanelment:** Includes both public and private hospitals.
- **Health Benefit Packages (HBP):** Treatments follow predefined packages that *should* include medicines, diagnostics, and physician fees.

Achievements & Milestones (Dec 2025)

- **Scale:** Over **42 crore** cards issued and **11 crore** hospital admissions facilitated.
- **Gender Equity:** Women account for nearly **50%** of all issued cards and hospitalizations.
- **Digital Health Records:** Integration with the **Ayushman Bharat Digital Mission (ABDM)** allows for seamless sharing of health history.

Conclusion

The NITI Aayog study serves as a "wake-up call" for the administration of AB-PMJAY. While the scheme has successfully expanded its reach to the elderly and frontline workers, the high **out-of-pocket spending** threatens its core objective. Moving forward, the focus must shift from "card issuance" to "service delivery audits"—ensuring that empanelled private hospitals adhere to the cashless mandate and that basic diagnostics/medicines are strictly provided within the package rates.

World Happiness Report 2026: Global and Regional Trends

Why in News?

On **March 20, 2026**, the **Oxford Wellbeing Research Centre**, in partnership with **Gallup** and the **UN Sustainable Development Solutions Network**, released the **World Happiness Report 2026**. The report coincided with the **International Day of Happiness**, a global observance established by the UN to recognize well-being as a fundamental human goal.

Note

The 2026 report highlights a continued dominance by Nordic nations, with **Finland** securing the top spot for the **9th consecutive year**. A significant trend in this edition is the "Anglosphere slump," where no major English-speaking nation made it into the Top 10 for the second year running. **India** showed a marginal improvement, climbing to **116th position** (from 118th in 2025), but continues to trail several of its South Asian neighbors.

Global Rankings: Winners and Losers

- **The Leaders: Finland (1st)**, **Iceland (2nd)**, and **Denmark (3rd)** maintain their status as the happiest nations. **Costa Rica (4th)** saw a meteoric rise from 23rd in 2023, attributed to strong social ties and environmental well-being.
- **The Bottom: Afghanistan (147th)** remains the unhappiest country, followed by **Sierra Leone (146th)** and **Malawi (145th)**.
- **The BRICS Context:** Within the BRICS bloc, **China (65th)** leads, followed by **Russia (79th)** and **Iran (97th)**.
- **The Anglosphere:** Nations like **New Zealand (11th)** and **Australia (15th)** remain just outside the top tier, while the **USA (23rd)** and **UK (29th)** continue to struggle with declining youth well-being.

India's Performance in 2026

- **Ranking: 116th** out of 147 countries.
- **Regional Comparison:** India performs better than **Bangladesh (127th)** and **Sri Lanka (134th)** but remains behind **Nepal (99th)** and **Pakistan (104th)**.
- **Key Factors:** India's ranking is weighed down by lower scores in **social support** and **perceptions of corruption**, despite improvements in **GDP per capita** and **healthy life expectancy**.

Measurement Criteria

The report uses the **Cantril Ladder** (life evaluation on a 0-10 scale) and analyzes six key variables:

1. **GDP per capita** (Economic strength)
2. **Social support** (Having someone to count on)
3. **Healthy life expectancy**
4. **Freedom** to make life choices
5. **Generosity** (Donations/Charity)
6. **Perceptions of corruption** (Government and Business)

The "Goldilocks Rule" of Social Media

The 2026 report introduced a specialized analysis of digital well-being:

- **Moderate Use:** Using social media for **under 1 hour per day** is linked to higher well-being than zero use (the "Goldilocks" zone).
- **The Harmful Zone:** The global average has reached **2.5 hours per day**, which is negatively correlated with life satisfaction.
- **Platform Distinction:** "Passive" platforms (**TikTok, Instagram**) are linked to social comparison and anxiety, while "Communication" platforms (**WhatsApp**) generally foster higher satisfaction by strengthening existing bonds.

International Day of Happiness (March 20)

- **History:** Established by the UN in 2012, following an initiative by **Bhutan**, a pioneer of **Gross National Happiness (GNH)**.
- **The Date:** March 20 was chosen to coincide with the **vernal equinox**—symbolizing global balance and equality.
- **Theme 2026:** Focused on "Mindful Connections," emphasizing the quality of interpersonal relationships over digital interactions.

Conclusion

The **World Happiness Report 2026** underscores that economic wealth alone does not guarantee happiness. The rise of nations like Costa Rica suggests that **social capital** and **environmental health** are becoming primary drivers of life satisfaction. For India, the marginal rise in ranking provides a sliver of hope, yet the significant gap between economic growth and perceived well-being remains a challenge for future policy-making.

World TB Day 2026 : Accelerating Towards a TB-Mukt Bharat

Why in News?

On **March 24, 2026**, India observed **World Tuberculosis (TB) Day** with the global theme **"Yes! We can End TB!"** The Union Health Minister launched an intensified **100-day TB Mukt Bharat Abhiyaan**, focusing on micro-planned interventions across **1.58 lakh villages and urban wards**. This campaign marks a critical push as India enters the final stretch of its ambitious goal to eliminate TB by 2025-26, ahead of the global 2030 target.

Note :

India continues to lead the global fight against TB, achieving a **21% decline in incidence** and a **25-28% reduction in mortality** over the last decade (2015–2024). Despite this, India still carries nearly **25% of the world's TB burden**. The 2026 strategy emphasizes "breaking the silence" by targeting asymptomatic carriers using AI-led diagnostics and scaling up the revolutionary **BPaLM regimen**, which has slashed treatment time for drug-resistant TB from 20 months to just six.

Key Initiatives Launched in 2026

- **100-Day TB Mukt Bharat Abhiyaan:** A mission-mode drive for rapid case detection and improved treatment adherence in 347 high-priority districts.
- **TB Mukt Bharat App:** Features the AI-multilingual chatbot **"Khushi"** to provide real-time guidance on symptoms and locate the nearest health facilities.
- **BPaLM Regimen Rollout:** A shorter, safer, and highly effective six-month all-oral treatment for Multi-Drug Resistant TB (MDR-TB).
- **Cough Against TB (CATB):** An innovative **Acoustic AI** tool that analyzes a 3-second recording of a patient's cough via smartphone to detect TB signatures.

Status of TB in India (2025-26)

- **Incidence & Mortality:** New cases dipped by 21% and deaths by 28% since 2015, surpassing global trends.
- **Detection & Coverage:** Treatment coverage has reached a record **92%**, and the "missing cases" (undiagnosed) have reduced from 10 lakh annually to less than one lakh.
- **Success Rate:** The treatment success rate under the **Pradhan Mantri TB Mukt Bharat Abhiyan** stands at **90%**, exceeding the global average of 88%.
- **Ayushman Bharat Expansion:** Integration of TB services across **1.8 lakh Ayushman Arogya Mandirs** and the use of over 3,000 AI-enabled handheld X-ray units for last-mile delivery.

Major Challenges

1. **Drug Resistance (MDR/XDR-TB):** India still accounts for **32%** of global MDR-TB cases. While BPaLM is a game-changer, its success depends on consistent supply chains and patient adherence.
2. **The Malnutrition Link:** Malnutrition remains the single largest driver of TB, linked to **35%** of active cases. In 2024, nearly **3.2 lakh TB cases** were also associated with Diabetes.
3. **Hidden Infections:** Nearly half of India's TB cases are **asymptomatic (subclinical)**, requiring active screening rather than waiting for patients to report symptoms.
4. **Socio-Economic Stigma:** Fear of social exclusion, especially for young women and migrant laborers, leads to under-reporting

and "circular migration" disruptions in treatment.

Strategic Roadmap for Elimination

- **Ni-kshay Poshan Yojana (NPY):** Continued financial support (₹1,000/month) to ensure nutritional recovery. Over **1.6 lakh Ni-kshay Mitras** (community volunteers) have adopted 11.4 lakh patients for extra food support.
- **Tribal-Focused Financing:** Leveraging **District Mineral Foundation (DMF) funds** in mining-affected tribal areas (where TB prevalence is 50% higher) for local diagnostic upgrades.
- **TB Preventive Treatment (TPT):** Proactively treating household contacts of active patients to kill the "latent" bacteria before it manifests into disease.
- **Mass AI Screening:** Deploying portable, AI-enabled Chest X-rays in urban slums and remote villages to identify "silent" transmitters.

Conclusion

The journey to a **TB-Mukt Bharat** has evolved from a medical program into a **Jan Andolan** (people's movement). While the 2025 elimination deadline remains a steep climb, the 2026 data shows that India is successfully "turning the tide" through a potent mix of **molecular diagnostics, shorter drug regimens, and digital surveillance**. The ultimate success lies in ensuring that the last patient in the remotest corner of India receives not just medicine, but the nutrition and dignity required for a full recovery.

UN IGME Report 2025: India as a Global Exemplar in Child Survival

Why in News?

The **United Nations Inter-agency Group for Child Mortality Estimation (UN IGME)** released its **2025 Report**, *'Levels and Trends in Child Mortality'*. While the report warns of a **worrying global slowdown** in child survival progress since 2015, it specifically recognizes **India as a leading global "exemplar"** for its consistent and massive reduction in child mortality rates over the last three decades.

Note :

Globally, **4.9 million children** died before age five in 2024, with survival remains heavily dependent on geography (Sub-Saharan Africa and Southern Asia account for 83% of deaths). India, however, has defied the global slowdown, registering a **79% decline in Under-5 Mortality (U5MR)** since 1990. Despite these gains, the report highlights that **Severe Acute Malnutrition (SAM)** and neonatal complications remain the "silent killers," necessitating a shift from mere "institutional access" to "quality of clinical care."

Key Highlights of the UN IGME 2025 Report

- **Global Burden:** 2.3 million newborns died in 2024. The pace of global reduction has **decelerated by 60%** since 2015 due to funding gaps and rising inequality.
- **Malnutrition Integration:** For the first time, the report linked **SAM** directly to 5% of child deaths, noting its indirect role in weakening immunity against pneumonia and malaria.
- **Primary Killers:**
  - **Newborns (0-28 days):** Preterm birth complications (36%) and birth asphyxia (21%).
  - **Children (1-59 months):** Pneumonia, diarrhea, and malaria.

India's Performance: The Exemplar Data (1990 vs. 2024)

Indicator	1990 Level	2024 Level	Total Decline
Under-5 Mortality (U5MR)	127 per 1,000	***27 per 1,000***	**79%**
Neonatal Mortality (NMR)	57 per 1,000	**17 per 1,000**	**70%**
Infant Mortality (IMR)	80+ per 1,000	**23.3 per 1,000**	**71%**

- **SDG Goal 3.2:** India is now on a high-speed trajectory to meet the 2030 target of reducing **U5MR below 25** and **NMR below 12**.

Key Drivers of India's Success

1. **Institutional Delivery:** Schemes like **Janani Suraksha Yojana (JSY)** have made hospital births the norm rather than the exception.
2. **Infrastructure:** The expansion of **Special Newborn Care Units (SNCUs)** and the **LaQshya** program have improved the quality of labor rooms.
3. **Immunization: Mission Indradhanush** under the Universal Immunization Programme (UIP) has slashed deaths from measles and pneumonia.
4. **Nutrition Safety Net:** The **POSHAN Abhiyaan**, **MAA (Breastfeeding) program**, and the **National Food Security Act** have provided a legal and nutritional shield for the "First 1,000 Days" of a child's life.

Persistent Challenges

- **The "First Month" Hurdle:** Most child deaths in India still occur within the first 28 days. Addressing **prematurity and low birth weight** remains a bottleneck.
- **Regional Disparities:** While **Kerala and Tamil Nadu** have mortality rates matching developed nations, states like **Uttar Pradesh, Bihar, and Madhya Pradesh** continue to carry a disproportionately high burden.
- **Maternal Health Link:** With **57% of Indian women** (15-49 years) being anaemic (NFHS-5), the cycle of "weak mother, weak child" continues to drive neonatal mortality.
- **The WASH Deficit:** Pneumonia and diarrhea persist as major post-neonatal killers due to gaps in clean water and sanitation in urban slums and remote rural pockets.

Strategic Roadmap for 2030

- **Quality over Access:** Moving beyond just "hospital births" to ensuring **skilled neonatal resuscitation** during the "golden minute" after birth.
- **Digital Tracking:** Scaling the **U-WIN platform** to ensure every child is tracked for every vaccine dose in real-time.
- **Kangaroo Mother Care (KMC):** Universalizing low-cost interventions like KMC and **Breast Milk Banks** to save premature babies.
- **Aspirational District Focus:** Directing resources specifically toward high-mortality tribal and rural belts to bridge the equity gap.

Conclusion

India's journey to becoming a "Global Exemplar" proves that political will and grassroots mobilization (via **ASHAs and Anganwadis**) can overcome deep-seated socio-economic hurdles. However, to reach the final SDG targets by 2030, India must treat **malnutrition and neonatal care** not just as health issues, but as a converged national priority involving water, sanitation, and women's empowerent.

Supreme Court Verdict on Gender Bias in the Armed Forces (2026)

Why in News?

On **March 24, 2026**, the **Supreme Court of India** delivered a landmark judgment in the case of *Sucheta Edn v. Union of India* (and others), striking down "systemic discrimination" in the evaluation of women officers for **Permanent Commission (PC)**. The Court flagged that the Armed Forces used biased performance metrics and arbitrary caps to deny women long-term career progression, and it invoked its extraordinary powers under **Article 142** to grant pensionary relief to those unfairly excluded.

Note

The 2026 verdict builds on the 2020 *Babita Puniya* case, concluding that women **Short Service Commission (SSC)** officers were historically judged on a "flawed playing field." Because women were initially ineligible for PC, their **Annual Confidential Reports (ACRs)** were written with the casual

assumption that they had no long-term career prospects. The Court ruled that such systemic neglect cannot be used to deny them benefits now. It ordered that affected officers be "deemed" to have completed **20 years of service** to qualify for full pension, even if they were released earlier.

Key Highlights of the 2026 Judgment

- **Recognition of Systemic Bias:** The Court found that ACRs for women were often graded "casually" or given "average" scores because assessors assumed they would exit after 10-14 years.
- **Unequal Opportunity Structure:** Women were systematically denied **"criteria appointments"** and **"career-enhancing courses"** (like Junior Command or Staff College) that are essential for high merit scores, creating an inherent disadvantage compared to male peers.
- **Striking Down the "250-Cap":** The Court ruled that a ceiling of 250 women officers for PC per year is arbitrary and "not sacrosanct," especially when the evaluation method itself is unfair.
- **Constitutional Obligation:** The Bench emphasized that granting PC to women is not a matter of "administrative discretion" but a **constitutional mandate** under Articles 14, 15, and 16.

Directions for the Three Services

Service	Specific Supreme Court Direction
Indian Army	Invoked **Article 142** to grant a one-time measure where released SSC women officers are deemed to have 20 years of service for **pension benefits** (effective Jan 1, 2025).
Indian Navy	Criticized the failure to disclose evaluation criteria in advance; upheld the right to PC without arbitrary vacancy caps.
Indian Air Force	Found the 2019 "Service Length Criteria" arbitrary; while not ordering reinstatement for those already out, it granted **deemed service** status for pensions.

Evolution of Women in the Armed Forces

- **1888:** Military Nursing Service established.
- **1958:** Women doctors granted regular commissions in the Army Medical Corps.
- **1992: Women Special Entry Scheme (WSES)** launched for non-combat roles (Law, Education, Logistics) but limited to 5-year tenures.
- **2008:** Permanent Commission first granted in restricted branches like JAG (Law) and AEC (Education).
- **2020 (Babita Puniya):** Landmark SC ruling granted PC to women in all 10 branches where they served as SSC officers.
- **2021:** Women allowed to sit for the **National Defence Academy (NDA)** exam. By early 2026, 158 women cadets have joined the Academy.
- **2026 Status:** Over **11,000 women** serve in the forces. Women now serve as fighter pilots, command warships, and lead Army aviation squadrons (e.g., Capt. Hansja Sharma in 2026).

Major Challenges and Barriers

- **Core Combat Arms:** Infantry, Armored Corps, and Submarines largely remain closed to women due to operational and physiological arguments cited by the government.
- **Medical Fitness:** The Court noted that medical standards designed for 25-year-old men were often unfairly applied to 45-year-old women seeking PC after years of service.
- **Structural Neglect:** The "Golden Minute" or early career opportunities missed by women due to policy restrictions continue to affect their seniority and "inter se" merit.

Conclusion

The **March 2026 verdict** is a "corrective" judgment that moves from formal equality to **substantive equality**. By granting pensionary benefits to those who were "missing" from the merit list due to systemic bias, the Court has ensured that the "service of a woman is not less than the service of a man." As the first batches of women NDA cadets graduate, the focus must now shift to reforming the ACR system to be truly gender-neutral from day one of service.

Modified UDAN Scheme : Revamping Regional Aviation (2026–2036)

Why in News?

The Union Cabinet has officially sanctioned the **Regional Connectivity Scheme – Modified UDAN** with a substantial financial commitment of **28,840 crore** for the ten-year period of **2026–2036**. This revamped version, first proposed in the **Union Budget 2025–26**, aims to fix the structural and financial gaps identified in the earlier phases of the UDAN (Ude Desh ka Aam Nagrik) initiative.

Note

While the original UDAN successfully operationalized **663 routes** and flew over **162 lakh passengers**, it struggled with long-term sustainability. A **CAG report** revealed that only about **7% to 10%** of routes remained viable once the initial three-year subsidy ended. The **Modified UDAN** addresses this by extending the subsidy window to five years, providing direct government funding instead of passenger levies, and subsidizing the operational costs of low-traffic airports to prevent them from falling into disuse.

Core Pillars of the Modified UDAN (2026–2036)

- **Extended Viability Gap Funding (VGF):** To give airlines more time to build a loyal passenger base, the subsidy period for regional routes has been increased from **3 years to 5 years**.
- **Direct Exchequer Funding:** In a major policy shift, subsidies will now be funded directly by the **Government of India** rather than through a regional connectivity levy added to tickets on trunk routes.
- **O&M Support:** The government will now subsidize the **Operations & Maintenance (O&M)** costs of smaller, unserved aerodromes to ensure they remain functional even with low flight frequencies.
- **Infrastructure Targets:** The scheme plans to develop **100 new airports** from existing unserved airstrips and build **200 modern helipads** specifically for hilly, remote, and island territories.
- **Indigenous Fleet (Atmanirbhar Bharat):** Encourages the use of Indian-made aircraft, such as the **HAL Dornier** and **HAL Dhruv** helicopters, to navigate difficult terrains in the North-East and Himalayan regions.

Evolution of the UDAN Framework

Phase	Strategic Focus
UDAN 1.0	Launch phase; connecting underserved/ unserved airports.
UDAN 2.0	Focus on **helipads** and remote regional connectivity.
UDAN 3.0	Introduction of **Tourism routes** and seaplane operations.
UDAN 4.0	Focus on **Hilly regions**, North-East, and Islands.
UDAN 5.0	Removing the 600 km distance cap; focus on specialized aircraft.
Modified UDAN	**Sustainability phase** (2026 onwards); 10-year long-term planning.

Key Challenges and Corrections

1. **Sustainability Gap:** By February 2026, **327 out of 663** previously launched routes had been abandoned. The five-year VGF window is designed to stop this "subsidy-exit" collapse.
2. **Airport Disuse: 15 out of 95** revived airports had ceased operations by 2026. The new **O&M subsidy** ensures these airports don't

shut down due to high overheads and low traffic.

3. **Affordability:** The scheme maintains the airfare cap (historically approx **2,500 per hour** for 50% of seats) to keep travel accessible for the common citizen.

Strategic Integration: Krishi UDAN

The regional aviation network is also being leveraged for **Krishi UDAN**, which facilitates the rapid transport of perishable agricultural produce. This is particularly vital for farmers in the **North-East and tribal belts**, providing them direct access to national and international markets through **58 designated airports**.

Conclusion

The **Modified UDAN (2026–2036)** represents a shift from "quantity" to "quality" in regional aviation. By committing **28,840 crore**, the government is signaling that regional connectivity is a long-term infrastructure priority, not just a short-term experiment. In 2026, as the **Airports Authority of India (AAI)** begins redrawing the regional map, the focus will be on ensuring that the "Aam Nagrik" (Common Citizen) can not only afford to fly but has a reliable, permanent network to rely on for decades to come.

❐❐❐

Economics

India's GDP Rebasing : Transitioning to the 2022–23 Base Year

Why in News?

In **early 2026**, the **Ministry of Statistics and Programme Implementation (MoSPI)** officially released the New Series of National Accounts, shifting the GDP base year from **2011–12** to **2022–23**. This rebasing is a critical structural update designed to capture the "post-pandemic normal" and the rapid expansion of India's digital and gig economies. The revision provides a more accurate reflection of current consumption and investment patterns, aligning Indian statistics with global standards.

1. Key Highlights of the New Series (FY 2025–26 Estimates)

- **Real GDP Growth:** Projected at **7.6%** for Financial Year 2025–26, an upward revision from earlier estimates. This follows steady growth of **7.2%** (FY24) and **7.1%** (FY25).
- **Nominal GDP Growth:** Estimated at **8.6%** for FY 2025–26.
- **Sectoral Drivers:**
  - **Manufacturing:** Emerged as a primary resilient driver, achieving double-digit growth in the new series.
  - **Services:** The 'Trade, Hotels, Transport, and Communication' sub-sector recorded a notable growth rate of **10.1%**.
  - **Secondary & Tertiary Sectors:** Both registered growth exceeding **9.0%** in the current fiscal.
- **Demand Side:** Both **Private Final Consumption Expenditure (PFCE)** and **Gross Fixed Capital Formation (GFCF)** grew by more than **7.0%**.

2. Rationale for the 2022–23 Base Year

- **The "Post-Pandemic" Benchmark:** Unlike 2019–20 or 2020–21, which were distorted by lockdowns, **2022–23** represents a stable, "normal" year for production and consumption comparisons.
- **Capturing Emerging Sectors:** The new series better accounts for renewable energy, digital platform services, and the **gig economy**, which have transformed the economic landscape since 2011.
- **Rich Data Integration:**
  - **Unincorporated Sector:** Uses the **Annual Survey of Unincorporated**

Sector Enterprises (ASUSE) and **PLFS** data instead of outdated proxies.
    - **Administrative Data:** Integrates **GST data**, **e-Vahan portal** (for road transport consumption), and **PFMS** (for actual central government expenditure across states).
- **Methodological Rigor:** * **Double Deflation:** Now applied to manufacturing and agriculture to separately adjust input and output prices.
    - **SUT Framework:** Adopts the **Supply and Use Table** (SNA 2008 guidelines) to balance supply and use, reducing statistical discrepancies.

3. Strategic and Fiscal Implications

- **Contraction in Nominal GDP:** The statistical revision has reduced the absolute size of nominal GDP by **3% to 4%**.
- **Fiscal Deficit Pressure:** Because the deficit is a ratio of nominal GDP, the smaller denominator pushes the FY 2025–26 deficit from an initial **4.4%** to **4.5%**.
- **Debt-to-GDP Ratio:** The Centre's debt ratio is estimated to rise from **56.2% to 58.1%** for the current year, making the 55.6% target harder to achieve.
- **The $4-Trillion Goal:** While India's GDP stands at approximately **$3.8 trillion** in FY 2025–26, reaching the $4-trillion mark in 2026–27 now requires an aggressive nominal growth of **13–14%**, making the target highly sensitive to rupee exchange rate fluctuations.

4. Recommended Future Advancements

- **Producer Price Index (PPI):** Transitioning from WPI/CPI to a PPI to better measure price changes from the producer's perspective.
- **SNA 2025 Readiness:** Proactively building data infrastructure to adopt the upcoming UN **System of National Accounts 2025**, which includes crypto assets and green accounting.
- **MSME Representation:** Improving methods to capture smaller enterprises that may be underrepresented in Ministry of Corporate Affairs (MCA) filings.

Conclusion

The shift to the **2022–23 base year** is a landmark modernization of India's economic measurement framework. While the statistical contraction of nominal GDP creates immediate challenges for fiscal and debt targets, the improved methodology provides a more transparent and credible picture of India's growth. By integrating high-frequency digital data and refined deflation techniques, India is better positioned to navigate its path toward becoming a **$5-trillion economy** and achieving the vision of **Viksit Bharat**.

16th Finance Commission : Shifting Toward Performance-Based Federalism

Why in News?

In **February 2026**, the Union Government accepted the core recommendations of the **16th Finance Commission (16th FC)**, chaired by **Arvind Panagariya**, for the award period **2026–31**. While the Commission maintained the status quo on the vertical share of tax devolution, it introduced a "performance-heavy" horizontal formula and proposed a landmark **'grand bargain'** to address the long-standing issue of cesses and surcharges.

1. Vertical Devolution and the 'Grand Bargain'

- **Status Quo on Share:** The Commission retained the **States' share of the divisible pool at 41%**, the same level as the 15th FC. This provides a sense of "semi-permanence" to the current fiscal arrangement.
- **The 'Grand Bargain' Proposal:** To address the shrinking shareable tax base caused by cesses and surcharges (which aren't shared with states), the 16th FC proposed that the Centre **merge these levies into the divisible pool**. In return, states would accept a

smaller percentage share of a significantly larger pool, ensuring no revenue loss while restoring constitutional fiscal balance.

2. Revised Horizontal Devolution Formula

The formula for distributing the 41% among states has seen major shifts, moving away from "need-based" to "performance-based" criteria:

Criteria for Distribution of Central Taxes among States

Criteria	15th FC (2021-26)	16th FC (2026-31)
Income Distance	45%	42.5%
Population (2011)	15%	17.5%
Demographic Performance	12.5%	10%
Area	15%	10%
Forest	10%	10%
Tax and Fiscal Efforts	2.5%	-
Contribution to GDP	-	10%
Total	**100%**	**100%**

Sources: Reports of the 15th and 16th Finance Commissions.

3. Grants-in-Aid and Local Bodies

- **Total Grants:** Recommended **9.47 lakh crore** over five years.
- **Local Bodies (8 Lakh Cr):** Split between **Rural (4.4 Lakh Cr)** and **Urban (3.6 Lakh Cr)**. Grants are now divided into **80% Basic** and **20% Performance** components.
- **New Initiatives: * Urbanisation Premium Grant (10,000 Cr):** One-time incentive for merging peri-urban villages into Urban Local Bodies (ULBs).
    - **Special Infrastructure Grant (56,100 Cr):** Targeted at wastewater management in mid-sized cities.
- **Major Discontinuation:** The 16th FC has **discontinued Revenue Deficit Grants (RDGs)**, as well as state-specific and sector-specific grants, urging states to achieve fiscal self-reliance.

4. Fiscal Discipline and Reforms

- **Deficit Targets:** Recommended the Centre reduce its fiscal deficit to **3.5% of GDP by 2030–31**, while States must strictly adhere to a **3% GSDP cap**.
- **Off-Budget Borrowings:** Recommended a complete end to off-budget borrowings, requiring all such liabilities to be reflected in the main budget.
- **Power Sector:** States are encouraged to **privatise DISCOMs** to qualify for certain performance-linked assistance.
- **Transparency:** For the first time, the Commission recommended annual disclosure of **CAG-certified "net tax proceeds"** under **Article 279** to clarify the exact size of the divisible pool.

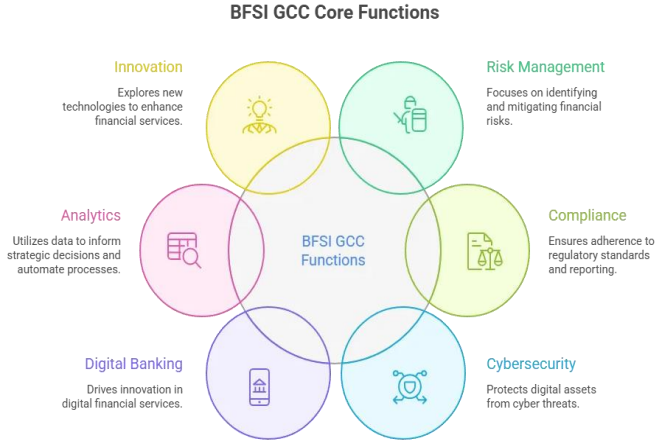
5. Key Concerns and Regional Impact

- **The Equity-Efficiency Gap:** The new **"Contribution to GDP"** weightage favors industrialized southern and western states (Karnataka, Kerala, Gujarat). Conversely, populous states like **Uttar Pradesh and Bihar** have seen their overall shares decline.
- **Structural Deficits:** The removal of Revenue Deficit Grants poses a severe challenge to **Himalayan and Northeastern states**, which face high cost disabilities and limited revenue-raising avenues.
- **Fiscal Autonomy:** Stringent conditions on subsidies (especially unconditional cash transfers) and DISCOM privatization are viewed by some states as an encroachment on their policy-making autonomy.

Conclusion

The 16th Finance Commission's report marks a transition toward **"Compliance-Driven Federalism."** While the 41% retention ensures stability, the shift toward rewarding GSDP contribution signals that the future of federal transfers will be increasingly linked to economic efficiency. The success of this award period will largely depend on whether the proposed "Grand Bargain" on cesses is implemented to restore the integrity of the shareable tax pool.

EASE 9.0 Reforms : Transforming Public Sector Banks into Tech-First Institutions



Why in News?

In **February 2026**, the Department of Financial Services (DFS) launched the **EASE 9.0 (Enhanced Access and Service Excellence)** reforms agenda. This latest iteration is a strategic blueprint designed to prepare Public Sector Banks (PSBs) for the **Viksit Bharat @2047** vision. The agenda marks a fundamental shift from traditional banking to a **technology-led model**, focusing on Global Capability Centres (GCCs), Artificial Intelligence (AI), and institutional resilience.

1. Key Reforms under EASE 9.0

- **GCC Strategy and Leadership:** PSBs will implement a formal **Global Capability Centre (GCC)** strategy in **FY 2026-27**. Following the lead of the **State Bank of India (SBI)**, which established its first GCC in Karnataka earlier this year, other PSBs will create offshore-style units to centralize IT, R&D, and strategic support.
- **Advanced Tech Infrastructure:** Banks are mandated to adopt **active-active data centre models** to ensure zero-downtime business continuity.
- **AI & Cloud Integration:** The agenda pushes for the development of **core AI stacks**, including:
    - Licensing of **Large Language Models (LLMs)** and GPU strategies.
    - Deployment of **private cloud models**.
    - At-scale data **tokenization** and anonymization for secure business analytics.
- **Consent & Fraud Management:** Implementation of enterprise-wide **consent management** capabilities and collaborative blockchain-based models for advanced risk assessment and fraud detection.

2. The BFSI GCC Ecosystem in India

- **Definition:** A **BFSI GCC** is a 100% owned subsidiary of a global financial institution that serves as a strategic extension for high-value functions like risk management, compliance, and fintech innovation.
- **Evolution:** Moving beyond mere "cost arbitrage," GCCs in India have become hubs for **RegTech, Cybersecurity, and GenAI** development.
- **Economic Footprint:** * The sector is projected to grow to **125 billion dollars by 2032**.
    - Currently, **185-190 BFSI GCCs** operate in India, employing over **540,000 professionals** (25% of all GCC employees in the country).
    - **Major Hubs:** Bengaluru (Analytics), Hyderabad (Fintech), Mumbai (Core Finance), and Pune/NCR.

3. The R.I.S.E. Framework (Foundational Pillars)

The EASE 9.0 agenda is built upon four core pillars to ensure a holistic transformation of the banking sector:

Pillar	Focus Area
Risk & Resilience	Strengthening credit risk management and operational oversight.
Innovation	Deep integration of **GenAI, Machine Learning**, and microservices.
Socio-economic Impact	Inclusive banking for underserved segments, including **gig workers**.
Excellence	Enhancing customer-centricity and cost-effective operating models.

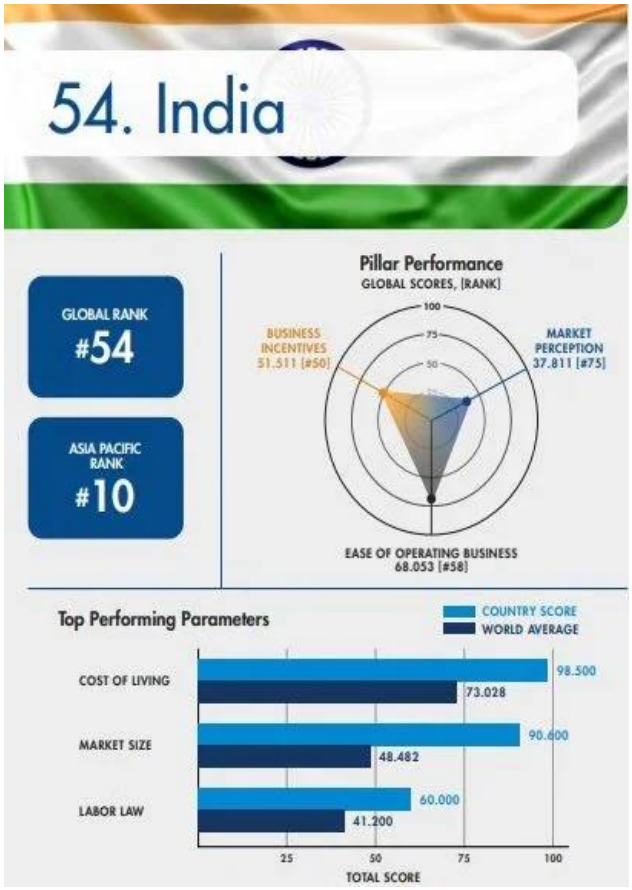
4. Strategic Significance

- **Global Competitiveness:** By adopting the GCC model used by global giants like JPMorgan Chase and Goldman Sachs, Indian PSBs aim to insource high-end tech talent rather than relying solely on external vendors.
- **Data Sovereignty:** The focus on **private clouds** and **in-house AI stacks** ensures that sensitive financial data remains within the bank's sovereign control while leveraging cutting-edge analytics.
- **Operational Efficiency:** Automation and AI-driven risk models are expected to significantly reduce the cost-to-income ratio for state-run lenders by 2027.

Conclusion

EASE 9.0 represents the most "tech-ambitious" phase of PSB reforms to date. By mandating GCC strategies and AI stacks, the government is pushing PSBs to compete directly with global private banks and fintechs. The success of this agenda will depend on how quickly these legacy institutions can build the "capacity-building roadmap" required to manage highly specialized GCC units.

Innovators Business Environment Index (IBEI) 2026



Why in News?

In **March 2026**, StartupBlink released the **Innovators Business Environment Index (IBEI) 2026**. This index evaluates the foundational "enabling conditions" that allow innovators to start and scale businesses across different nations. Unlike traditional metrics that focus on outcomes (like the number of unicorns), the IBEI measures **inputs** such as regulatory ease, infrastructure, and capital accessibility.

1. About the Innovators Business Environment Index (IBEI)

- **Objective:** To measure the accessibility, predictability, and friction levels within a national business environment for innovators.
- **Focus Area:** It specifically tracks the **enabling conditions** for business growth rather than just startup success rates.
- **Methodology:** The index uses a **0-100 score** based on over **30 measurable indicators** organized into five core pillars:
    - **Regulation and Government:** Friction levels and ease of starting/operating a business.
    - **Access to Capital:** Availability of funding and credit infrastructure.
    - **Taxation:** Business-friendly tax conditions and incentives.
    - **Digital Infrastructure:** Connectivity, internet speed, and digital freedom.
    - **Global Mobility & Openness:** Governance stability and international market perception.

2. Global Rankings 2026

The index highlights the top-tier environments for innovation globally:

- **1st Rank: United States** (Perfect score of **100**).
- **2nd Rank: Singapore**.
- **3rd Rank: United Kingdom**.

3. India's Performance

- **Global Ranking:** India is ranked **54th** globally with a score of **55.035**.
- **Regional Context:** India outperformed **China**, which is placed **85th** in the index.
- **Key Strengths:**
    - Large market size and competitive cost structure.
    - Reliable access to capital.
    - Robust regional strengths (major startup hubs).

Conclusion

India's 54th rank in the IBEI 2026 reflects a business environment that is increasingly reliable in terms of capital and market size, though it still faces challenges compared to the top-tier "frictionless" economies. The fact that India ranks ahead of China in this specific index highlights its growing appeal as a predictable destination for global innovators.

India's Export Momentum : Scaling the Global Value Chain (2025–26)

Why in News?

In **March 2026**, the **Economic Survey 2025-26** hailed India's post-pandemic export growth as "the envy of the world." Despite severe global headwinds, including new trade barriers and geopolitical tensions, India's total exports reached **720.76 billion dollars** between April 2025 and January 2026. The surge is driven by a structural shift toward high-value manufacturing, particularly in electronics and defense, supported by a robust banking sector and stable foreign reserves.

1. Key Facts Regarding Export Performance

- **Overall Growth:** India's total exports grew by **6.15%** (April 2025–Jan 2026) compared to the previous year.
- **Diversification:** India now ranks in the **top 5** globally for product diversity and **top 3** for trade partner diversity, reducing vulnerability to localized economic shocks.
- **Sectoral Breakout:**
    - **Electronics:** Now the **3rd-largest** export category. Smartphone exports alone hit **1 lakh crore rupees** in the first five months of FY26, a 55% year-on-year rise.
    - **Defense:** Reached a record **23,622 crore rupees** in FY25 (up from <1,000 cr in 2014). Products are now exported to over **100 countries**, including the US and France.
    - **Services:** Hit a record **387.5 billion dollars** in FY25, yielding a massive trade surplus of **188.8 billion dollars**.
    - **Petroleum:** India is the world's **7th-largest exporter** of refined petroleum products.
- **Trade Agreements:** India has signed **9 FTAs** in the last 3 years, providing zero-duty access to markets representing approximately **70% of global GDP**.

2. Strategic Steps to Boost Exports

- **Export Promotion Mission (EPM):** Approved with an outlay of **25,060 crore rupees** (FY26–FY31). It operates through two sub-schemes: **Niryat Protsahan** and **Niryat Disha**.
    - **FLOW:** Provides up to 30% support for **overseas warehousing**.
    - **TRACE:** Reimburses up to 75% of compliance costs (capped at 25 lakh per IEC).
    - **LIFT:** Reimburses up to 30% of freight costs for low export-intensity districts.
- **Production-Linked Incentives (PLI):**
    - **Auto Industry:** Attracted investments of **35,657 crore rupees** as of Sept 2025.
    - **Bulk Drugs:** Created a capacity of **55,000 MT** for 26 critical APIs to reduce import dependence.
- **Semiconductor Focus: ISM 2.0** (Budget 2026-27) focuses on fabrication and chip design, while the **ECMS (40,000 cr)** aims to integrate Indian electronics with global value chains.
- **Infrastructure:** Development of **Rare Earth Corridors**, Chemical Parks, and **Biopharma SHAKTI** to strengthen the capital goods ecosystem.

3. Challenges and Hurdles

- **Tariffs and Protectionism:** The US administration's **50% tariffs** in 2025 led to a **22% decline** in exports to the US. While an interim deal in Feb 2026 lowered reciprocal duties to **18%**, protectionist sentiments remain a risk.
- **Climate Barriers:** The **EU's Carbon Border Adjustment Mechanism (CBAM)**, effective from 2026, will impose "carbon taxes" on Indian steel, aluminum, and cement.
- **Geopolitical Vulnerability:** With **55% of crude oil** sourced from the Middle East, any blockade of the **Strait of Hormuz** (which handles 15.4% of India's global trade) could

paralyze energy security and spike export costs.

- **Intense Competition:** Labor-intensive sectors like textiles face stiff competition from **Vietnam and Bangladesh**.

4. Measures Needed for Strengthening the Sector

- **Logistics Integration:** Linking **Dedicated Freight Corridors** with mega ports to reduce landed export costs by **20-30%**.
- **Green Compliance:** Establishing a national **"Green Export Credit"** facility and indigenous carbon accounting to counter the EU's CBAM.
- **E-Commerce Empowerment:** Removing the **10 lakh rupee cap** on e-commerce consignments to help MSMEs reach global markets.
- **Strategic Buffers:** Proactively building stocks of **lithium, cobalt, and rare earth elements** to insulate high-tech manufacturing from supply shocks.

Conclusion

India's export sector has demonstrated remarkable resilience, evolving from a provider of commodities to a high-tech manufacturing hub. While the **Export Promotion Mission** and **PLI schemes** provide the necessary domestic tailwinds, the looming challenges of **carbon taxes** and **geopolitical supply chain shifts** necessitate a "security-first" approach to trade. Achieving global competitiveness will depend on India's ability to lower logistics costs and rapidly finalize "Green" export frameworks.

India's Digital Transformation: The Digital India Journey

Why in News?

India's digital landscape has evolved from a basic connectivity mission into a massive **empowerment journey**. Anchored by the **Digital India programme (2015)**, the nation is leveraging **Digital Public Infrastructure (DPI)** and targeted skilling to bridge the digital divide and integrate every citizen into the modern digital economy.

Note

The Digital India initiative has revolutionized governance and financial inclusion through platforms like **UPI, Aadhaar, and BharatNet**. While millions have joined the digital fold, the country still faces hurdles including a persistent **rural-urban divide**, escalating **cybersecurity threats**, and infrastructure bottlenecks.

Key Achievements of Digital India

- **Universal Connectivity:**
  - **BharatNet:** Connected over **2.15 lakh Gram Panchayats**; expanded optical fiber from 19.35 lakh km (2019) to **42.36 lakh km (2025)**.
  - **5G Expansion:** 99.9% of districts now have 5G coverage.
  - **Data Affordability:** Costs dropped from Rs 269 per GB (2014) to just **Rs 8–10 per GB (2025-26)**.
- **Digital Public Infrastructure (DPI):**
  - **Aadhaar:** Over **143 crore** unique IDs issued for targeted welfare.
  - **UPI:** Processes nearly **Rs 28.33 lakh crore** across **21.7 billion transactions** monthly.
  - **DigiLocker:** Over **62 crore users** sharing documents paperlessly.
- **Education and Literacy:**
  - **PMGDISHA:** Trained **6.39 crore rural households** in digital skills.
  - **DIKSHA & SWAYAM:** Hosting thousands of courses with over **18 crore enrollments** combined.
- **Inclusion and Last-Mile Access:**
  - **Common Service Centres (CSCs):** Operated by **6.5 lakh Village Level Entrepreneurs (VLEs)**.
  - **PM-WANI:** Deployed over **4.09 lakh Wi-Fi hotspots** nationwide.
  - **UDID:** Generated **1.34 lakh digital cards** for persons with disabilities.

Digital India Programme: Core Framework

- **Ministry:** Administered by the **Ministry of Electronics and Information Technology (MeitY)**.
- **Vision Areas:** 1. Digital infrastructure as a utility.
  2. Governance and services on demand.
  3. Digital empowerment of citizens.
- **Nine Pillars:** Includes Broadband Highways, Universal Access to Mobile Connectivity, Public Internet Access, e-Governance, e-Kranti (electronic delivery of services), Information for All, Electronics Manufacturing, IT for Jobs, and Early Harvest Programmes.

Key Challenges

- **Digital Divide:** Only **24% of rural households** have internet access compared to 66% in cities. Only **33% of women** have ever used the internet.
- **Cybersecurity:** India saw **13.91 lakh incidents in 2022** and faces a shortage of nearly **7.9 lakh professionals**.
- **Infrastructure Gaps:** BharatNet has faced cost overruns (rising to **Rs 1.39 lakh crore**) and frequent fiber cuts.
- **Environmental Cost:** E-waste rose to **1.75 million metric tonnes** in 2023-24.

The Path Ahead

- **Cyber Defense:** Create a dedicated **Cyber Security Service cadre** and promote indigenous encryption.
- **DPI Security:** Mandatory independent audits for Aadhaar and UPI; establish distributed backup centers.
- **Revised Laws:** Overhaul the **Information Technology Act, 2000** to tackle deepfakes and AI-generated misinformation.
- **Literacy 2.0:** Launch **PMGDISHA 2.0** with a heavy focus on financial fraud protection and "Cyber Jagrukta Champions" at the village level.

Conclusion

India's decade-long journey has built a world-class digital foundation. To sustain this "techade," the focus must shift toward securing the ecosystem against cyber threats and ensuring that the "digital underclass" is uplifted through inclusive access and literacy.

Revised FDI Norms : Strategic Relaxation of Press Note 3

Why in News?

The Union Cabinet has approved significant amendments to **Press Note 3 (2020)** in March 2026. While the original policy mandated government approval for all investments from countries sharing land borders with India, the revised norms allow limited foreign direct investment (FDI) through the **automatic route** for specific non-strategic sectors to boost domestic manufacturing.

Note

The policy shift aims to unlock capital and technology flows—particularly from global funds with minor Chinese backing—without compromising national security. By introducing a **10% threshold** for automatic approval and a strict **60-day deadline** for clearances in specified sectors, India is adopting a pragmatic approach to integrate into global supply chains.

Key Changes in FDI Norms (2026)

The 10% Automatic Route Threshold

- **Relaxation:** Investors from land-bordering countries (LBCs) holding a **non-controlling beneficial ownership of up to 10%** are now permitted to invest via the **automatic route**.
- **Target:** This primarily benefits global Private Equity (PE) and Venture Capital (VC) funds that were previously stalled due to tiny, passive Chinese stakes.

Specified Manufacturing Sectors

The easing is strictly targeted at sectors where India seeks to reduce import dependency and build a domestic component ecosystem:

- **Electronics:** Electronic capital goods and components.
- **Solar Energy:** Polysilicon and ingot-wafers for solar cells.

- **Advanced Tech:** Battery components and rare earth magnets/processing.
- **Restricted:** Strategic sectors like **semiconductors** remain under the mandatory government approval route.

Operational Safeguards

- **Majority Control:** Ownership and control of the investee entity must remain with **resident Indian citizens** or Indian-owned entities at all times.
- **Beneficial Ownership Test:** Aligned with the **Prevention of Money Laundering Rules, 2005**, the test is applied at the investor entity level to prevent "proxy" or disguised investments.
- **Reporting:** All automatic route investments must be reported by the Indian company to the **Department for Promotion of Industry and Internal Trade (DPIIT)**.

Rationale for the Policy Shift

- **Economic Survey 2023-24:** Recommended facilitating FDI from China in non-strategic sectors to help India "burrow" into global value chains and achieve **Atmanirbhar Bharat**.
- **Supply Chain Security:** Responding to global disruptions (e.g., tensions in the **Strait of Hormuz**) by diversifying and localized manufacturing.
- **Diplomatic Thaw:** The move coincides with a gradual normalization of India–China ties, including:
    - Resumption of the **Kailash Mansarovar Yatra** (June 2025).
    - Restoration of **direct flight connectivity** between major cities.
    - Increased cooperation on transboundary river data sharing.

Procedural Efficiency

- **Time-Bound Clearance:** A definitive **60-day timeline** has been set for processing investment proposals in the specified manufacturing sectors.
- **Governance:** A **Committee of Secretaries (CoS)**, led by the Cabinet Secretary, is empowered to add or remove sectors from the permitted list based on the evolving security landscape.

Conclusion

India's revised FDI stance represents "calibrated liberalization." By differentiating between passive financial investment and strategic corporate control, the government seeks to attract the capital necessary for its 2030 manufacturing goals while maintaining a "security-first" posture toward neighboring capitals.

Impact of US–Israel–Iran Conflict on India (2026)

Why in News?

The escalating **US–Israel conflict with Iran** has sent shockwaves through global supply chains, directly threatening India's "Goldilocks" economy—a delicate balance of high growth and low inflation. The crisis has forced India into a complex foreign policy maneuver to maintain its **strategic autonomy** while protecting vital interests with all three nations.

Note

India's heavy reliance on the **Strait of Hormuz** for energy and fertilizer inputs makes it highly susceptible to "imported inflation." A potential blockade or continued instability in the Gulf puts **85% of crude imports** and **60% of LPG supply** at risk. To build resilience, India is pivoting toward aggressive energy diversification, expanding strategic reserves, and operationalizing alternative maritime routes like the **Eastern Maritime Corridor**.

Key Economic and Strategic Implications

Energy Security and LPG Crisis

- **Import Dependency:** India imports over 85% of its crude and 60% of its LPG, primarily from the UAE, Qatar, and Saudi Arabia.
- **Hormuz Bottleneck:** Most shipments pass through the Strait of Hormuz. Disruptions have already caused a **15% spike in crude prices**.

- **Domestic Measures:** The government invoked the **Essential Commodities Act, 1955**, directing refineries to boost LPG production by 25%. Supply is being prioritized for households under **PM Ujjwala Yojana**, leading to a **25-day waiting period** for commercial users (hotels/restaurants).

The Fertilizer and Food Threat

- **Input Shortage:** India relies on the Gulf for ammonia, sulphur, and phosphoric acid (for **DAP**). While current stocks (5.5 million tonnes of urea) cover the end of the *Rabi* season, a prolonged conflict could threaten the upcoming *Kharif* sowing season.
- **Agri-Exports:** Nearly **USD 11.8 billion** of food exports (mainly Basmati rice) to West Asia are at risk. Over 3,000 containers are currently stranded at ports like **Kandla and Mundra**.

Industrial and Financial Impact

- **Core Sectors:** The construction industry faces price hikes as **68% of imported limestone** and **62% of gypsum** come from the Gulf. Steel production is hit by LNG shortages, and Surat's diamond hub faces a rough diamond crunch.
- **Currency Pressure:** The **Indian Rupee** has hit record lows, forcing the **RBI** to deploy **USD 15–20 billion** from forex reserves to stabilize the currency.
- **Diaspora Safety:** The safety and remittances (over USD 51 billion annually) of nearly 1 crore Indians in GCC countries remain a top priority.

Strategic Petroleum Reserves (SPR) Status

Feature	Current Status (2026)
Operational Capacity	5.33 Million Metric Tonnes (MMT)
Locations	Visakhapatnam, Mangaluru, Padur
Buffer Level	~9.5 days of crude cover (Total energy buffer ~74 days)
Comparison	China holds 110–140 days; India is currently expanding Padur and Chandikhole.

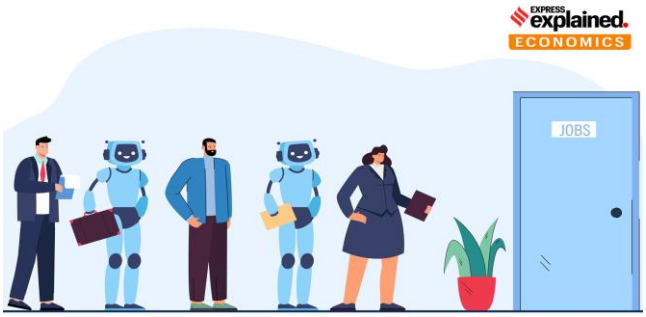
Mitigating the Geopolitical Risk

- **Market Diversification:** Expanding long-term oil contracts with **Brazil, Guyana, and the US** to bypass the Middle Eastern chokepoints.
- **Scaling Nano-Fertilizers:** Using **PM PRANAM** to incentivize states to switch from imported chemical fertilizers to domestic **Nano Urea and Nano DAP**.
- **Legal Protections:** Exporters are urging the Ministry of Commerce to declare **Force Majeure** to avoid penalties for delayed shipments.
- **Eastern Maritime Corridor (EMC):** Aggressively operationalizing the **Chennai–Vladivostok** route to secure Russian crude and coal via the stable Indo-Pacific waters.
- **Green Transition:** Moving faster on the **National Green Hydrogen Mission** to reduce the long-term baseline demand for imported fossils.

Conclusion

India is shifting its economic philosophy from **"just-in-time"** efficiency to **"just-in-case"** resilience. By building strategic buffers, securing alternative maritime corridors, and pushing for energy independence, India aims to safeguard its vision of **Viksit Bharat** against external geopolitical volatility.

Anthropic Labour Market Study : AI's Impact on Employment (2026)



Why in News?

A landmark labour market study by **Anthropic** has provided the first data-driven look at how **Large Language Models (LLMs)** like Claude are transitioning from "theoretical capability" to "observed exposure" in the workplace. The study reveals a significant shift in hiring patterns, particularly a "closing of the front door" for entry-level professionals in knowledge-intensive sectors.

Note

The study indicates that while AI can theoretically perform the vast majority of tasks in fields like

finance and coding, actual workplace integration is currently around one-third of that potential. However, the impact is already visible in a **14% drop in entry-level hiring** for high-exposure roles. For India, this poses a structural threat to the traditional IT services model, necessitating urgent reforms in education and R&D.

Key Findings: Theoretical vs. Observed Exposure

- **The Capability Gap:** In computer and mathematical occupations, LLMs could **theoretically perform 94%** of tasks. In actual practice (observed exposure), they are currently being used for approximately **33%** of those tasks.
- **Most Exposed Sectors:** Computer programming, customer service, legal services, and financial analysis.
- **Insulated Sectors:** Physical and manual labor roles in **construction, agriculture, and personal care** remain the most protected from immediate AI disruption.
- **The "Entry-Level" Crisis:** Since late 2022, hiring for workers aged **22–25** in AI-exposed fields has fallen by **14%**, as companies replace junior pipelines with AI-assisted senior workflows.

Demographic Disparities in AI Exposure

The study highlights that the burden of AI transition is not distributed evenly across the workforce:

Demographic	High-Exposure Group Statistics
Gender	**54.4%** of the most exposed workers are female (largely due to roles in administration and service).
Education	Workers with **graduate degrees** are **4 times** more likely to be in the high-exposure category.
Race (US Data)	**White workers** make up **65.1%** of the high-exposure group; **Asian workers** are nearly twice as likely to be in this group relative to their population share.
Age	Highly exposed workers are slightly older, with an average age of **42.9 years**.

Implications for India's IT Sector

- **Market Volatility:** The **Nifty IT index** (including TCS, Infosys, and Wipro) has seen declines of over **20%** as AI automation tools challenge the "manpower-link" revenue model.
- **The "Hourglass" Effect:** High demand exists for senior specialists, but entry-level "junior developer" roles are shrinking. In 2024 alone, the Indian IT sector saw over **50,000 job cuts**, primarily affecting entry-level programmers.
- **Creative Devaluation:** AI tools like Midjourney and DALL-E have reduced the role of human creators to "editors," slashing the income of freelancers in content and design.

Government Initiatives for AI-Readiness

- **FutureSkills PRIME:** A platform to upskill IT professionals in emerging technologies.
- **SOAR (Skilling for AI Readiness):** Aimed at preparing the youth for an AI-centric job market.
- **PMKVY 4.0:** Focuses on New Age courses like Industry 4.0, AI, and Robotics.
- **National Strategy for AI (NITI Aayog):** A roadmap focusing on "AI for All."

Proposed Measures for Employment Resilience

1. **AI Literacy in Schools:** Integrating data ethics and algorithmic logic into the foundational school curriculum.
2. **"Future Skills" Tax Credit:** Financial incentives for businesses that invest in re-skilling employees rather than laying them off.
3. **Adopting "Cobotics":** Shifting from full automation to **collaborative robotics**, where AI provides real-time "emotional tone analysis" or technical suggestions to human agents.
4. **Protecting Apprenticeships:** Creating "sandbox" roles where juniors use AI to innovate rather than just perform routine tasks.
5. **Social Security Code 2020:** Implementing portable benefits for **gig workers** to ensure health and pension cover as per-task wages fluctuate.

Conclusion

The Anthropic study serves as a wake-up call: the AI revolution is no longer a future threat but an active labor market participant. To ensure inclusive growth,

India must pivot from being a provider of "routine tech labor" to a leader in **AI-human collaboration** and high-end R&D.

Maharashtra's Rs 35,000 Crore Farm Loan Waiver (2025-26)

Why in News?

The **Government of Maharashtra** has announced the **Punyashlok Ahilyadevi Holkar Farmers Loan Waiver Scheme** with a massive outlay of **Rs 35,000 crore**. This marks the state's third major waiver in a decade, aimed at providing relief to distressed farmers by clearing overdue crop loans. However, the move has reignited debates over fiscal stability and the long-term health of India's rural credit ecosystem.

Note :

The scheme waives overdue crop loans up to **Rs 2 lakh** (as of September 30, 2025) and offers incentives of up to **Rs 50,000** for farmers who have been regular in their repayments. While providing immediate psychological and financial relief, experts and the **RBI** warn that such frequent interventions may destroy credit discipline and divert funds away from essential agricultural infrastructure.

Understanding Farm Loan Waivers

A farm loan waiver is a government intervention where the state takes over the liability of a farmer's debt to banks.

- **Complete Waiver:** Writing off the entire outstanding amount (rare due to high cost).
- **Partial/Targeted Waiver:** Capped at a specific amount (e.g., Rs 2 lakh) or restricted to small and marginal farmers.
- **Incentive-Based:** Providing cash rewards to "honest" borrowers to prevent the collapse of credit culture.

Implications: The Double-Edged Sword

Positive Impacts

- **Immediate Relief:** Quickly assists households hit by crop failures, droughts, or market price crashes.
- **Credit Eligibility:** Clearing old arrears allows farmers to become eligible for **fresh institutional credit** for the next sowing season.
- **Reducing Distress:** Helps mitigate the mental stress of debt; essential given that over **10,700** individuals in the farming sector died by suicide in 2023.
- **Consumption Boost:** Temporarily increases disposable income, leading to higher rural demand.

Negative Impacts

- **Moral Hazard:** Frequent waivers encourage **strategic defaults**, where even capable farmers stop paying in anticipation of a future waiver.
- **Fiscal Squeeze:** Consumes 0.1% to 1.8% of GSDP, leaving little room for **capital expenditure** on irrigation, cold storage, or rural roads.
- **Banking Strain:** Contributes to a spike in **Agricultural NPAs** (which stood at 8.44% in 2019), making banks risk-averse toward future farm lending.
- **Poor Targeting:** SBI research suggests only about **50% of intended beneficiaries** actually receive the funds, often excluding the poorest landless laborers who rely on informal moneylenders.

Alternatives to Recurring Waivers

To move from "band-aid" solutions to structural stability, experts suggest:

- **Direct Income Support:** Strengthening schemes like **PM-KISAN** to provide predictable cash flows rather than one-time debt clearances.
- **Crop Insurance:** Improving the speed and transparency of payouts under **PM Fasal Bima Yojana** to cover climate risks.
- **Infrastructure Investment:** Diverting "waiver funds" into **micro-irrigation**, warehousing, and food processing to raise base incomes.

- **Market Access:** Expanding **e-NAM** and digital trade platforms to ensure farmers get better price realization.
- **Climate Resilience:** Promoting drought-resistant seeds and **climate-smart farming** to reduce the frequency of crop failures.

Conclusion

Farm loan waivers remain a popular political tool, often announced close to elections. However, for a truly **Atmanirbhar** agricultural sector, the focus must shift from "cleaning balance sheets" to "building productive assets." Sustainable growth requires structural reforms that protect farmers from shocks before they fall into a debt trap.

The Washington Consensus : Transitioning to a Post-Liberal Era

Why in News?

The **Washington Consensus (WC)**, once the global "gold standard" for economic reform, is increasingly viewed as a relic in a world defined by **geopolitical fragmentation**, digital economies, and the return of **industrial policy**. The rise of economic nationalism and the restructuring of global supply chains (friend-shoring) have forced a re-evaluation of the purely market-led models that dominated the late 20th century.

Note

The Washington Consensus advocated for **Liberalisation, Privatisation, and Deregulation** as a universal fix for developing nations. However, the modern "Post-Washington" era is shifting toward strategic state intervention and economic resilience. For India, this means balancing the market efficiency gained from the **1991 reforms** with new strategies like the **PLI schemes** to safeguard economic sovereignty in a multipolar world.

What was the Washington Consensus?

- **Origin:** Coined by economist **John Williamson in 1989**.
- **The "Talisman":** It described a set of 10 specific policy prescriptions backed by the **IMF, World Bank, and US Treasury** to help countries in crisis.
- **Core Idea:** Believed in "trickle-down" economics—that free markets and fiscal austerity would automatically lead to growth and poverty reduction.
- **India's Connection:** India's **1991 LPG reforms** were largely aligned with these principles, helping the country overcome a severe Balance of Payments (BoP) crisis.

Why is it Losing Relevance?

Critics argue the model was a **"one-size-fits-all"** approach that ignored local institutional realities:

- **Social Costs:** Strict fiscal austerity often led to cuts in healthcare and education, widening **wealth inequality**.
- **Financial Volatility:** Rapid opening of capital markets exposed developing nations to "hot money" and crashes, like the **1997 Asian Financial Crisis**.
- **The "Sprinting" Trap:** Developed nations often used protectionism to grow their own industries but used the WC to prevent developing nations from doing the same (the "Kicking Away the Ladder" theory).
- **Alternative Models:** The rise of the **Beijing Consensus** (State Capitalism) and the **Cornwall Consensus (2021)** (State intervention for climate and equity) offered successful alternatives to pure neoliberalism.

Emerging Economic Frameworks

Model	Primary Focus	Key Characteristic
Washington Consensus	Market Efficiency	Minimum government, maximum privatization.
Beijing Consensus	State-Led Growth	Heavy state investment, authoritarian stability.
Cornwall Consensus	Resilience & Sustainability	State intervention to tackle climate change and inequality.

India's Strategy in the Post-WC Order

India is currently navigating this transition through a "Middle Path" of calibrated intervention:

1. **Production-Linked Incentive (PLI):** Active state support for semiconductors,

electronics, and green energy to build **domestic manufacturing**.

2. **Supply Chain Resilience:** Moving from "cost-efficiency" to **"economic security"** by participating in "friend-shoring" with trusted partners to reduce reliance on hostile geographies.
3. **Digital Public Infrastructure (DPI):** Using the **"India Stack"** (Aadhaar, UPI) to provide social goods through technology, showing that the State can be an innovator, not just a regulator.
4. **Targeted Protectionism:** Using calibrated tariffs to protect **MSMEs** and infant industries from predatory global dumping.
5. **Green Transition:** Accelerating the **National Green Hydrogen Mission** to ensure growth is climate-resilient.

Conclusion

The demise of the Washington Consensus marks the end of an era where free markets were seen as a universal panacea. For India, this shift provides a window to emerge as a **resilient pillar** of the new global architecture—blending market dynamism with strategic state guidance to ensure that growth is both inclusive and sovereign.

US Section 301 Trade Investigation : Forced Labour & Supply Chains

Why in News?

In **March 2026**, the United States launched a massive trade investigation against **India and 59 other economies** under **Section 301 of the Trade Act, 1974**. The probe specifically examines whether global supply chains are utilizing goods produced through **forced labour**, which the U.S. classifies as both a human rights violation and a national security threat.

Note :

The investigation, spearheaded by the **U.S. Trade Representative (USTR)**, targets 60 major economies including China, the EU, Japan, and the UK. This move is widely seen as a **Tariff Revival Strategy** after the U.S. Supreme Court struck down previous reciprocal tariffs earlier in 2026. By focusing on "unfair trade advantages" gained through lower production costs (linked to forced labour), the U.S. is seeking a legal pathway to reimpose heavy tariffs or trade restrictions on critical imports.

Scope of the Investigation

The USTR is scrutinizing products that rely on specific "high-risk" intermediate goods and raw materials:

- **Textiles & Garments:** Focus on cotton and yarn.
- **Renewable Energy:** Critical minerals and polysilicon used in **solar panels**.
- **Electronics:** Sub-assemblies and components for consumer tech.
- **Biofuels:** Palm fruit and related derivatives.

Impact on India

While India strictly prohibits forced labour under the **Bonded Labour System (Abolition) Act, 1976**, its export sector remains highly vulnerable due to "indirect" supply chain links:

- **The China Connection:** Many Indian industries (Solar, Electronics, Textiles) rely on raw materials and components imported from China. If these Chinese inputs are flagged for forced labour, the final Indian export could face U.S. sanctions.
- **Excess Capacity Probe:** India is simultaneously facing a separate U.S. investigation regarding **"excess manufacturing capacity"** in steel, petrochemicals, and solar modules.
- **Traceability Burden:** To maintain market access, Indian exporters will now likely need to implement expensive and rigorous **traceability mechanisms** to prove their entire supply chain is "clean."

Legal and Strategic Context

- **Section 301 Power:** This law allows the U.S. President to take all appropriate action (including retaliatory tariffs) to obtain the removal of any act, policy, or practice of a

foreign government that is "unreasonable or discriminatory."

- **Economic Nationalism:** The USTR argues that forced labour provides an artificial cost advantage that harms American industries and workers, making it a "market-distorting" practice.
- **Global Friction:** Targeting 60 economies—including allies like Australia and Canada—signals a significant shift toward **aggressive protectionism** and a departure from traditional multilateral trade norms.

Conclusion

The Section 301 probe represents a "perfect storm" for Indian exporters. Coming at a time when India is scaling up its domestic manufacturing under PLI schemes, the demand for supply chain transparency could act as a non-tariff barrier. For the Indian government, the challenge lies in defending its labor record while ensuring that its "Made in India" products are not penalized for global raw material complexities.

EDITORIALS

Crux of The Hindu & Indian Express

Economics

SWAYATT Initiative Completes Seven Years on Government e-Marketplace (GeM)

GeM Government e Marketplace

Efficient • Transparent • Inclusive

1. Why in News?

- The **Government e-Marketplace (GeM)** celebrated **seven years of the SWAYATT initiative**.
- The initiative aims to promote **inclusive public procurement** by enabling **startups, women entrepreneurs, youth, Self Help Groups (SHGs) and Micro & Small Enterprises (MSEs)** to participate in government procurement.

2. What is SWAYATT?

- **SWAYATT** stands for **Startups, Women and Youth Advantage through e-Transactions**.
- It was launched on **19 February 2019**.
- The initiative was designed to **democratise government procurement** by allowing small and emerging enterprises to **sell goods and services directly to government buyers through GeM**.

3. Objectives of the SWAYATT Initiative

- The initiative focuses on solving three major challenges faced by small enterprises:
  - **Access to Markets**
  - **Access to Finance**
  - **Access to Value Addition**
- Through the **digital procurement platform of GeM**, sellers can directly connect with **government departments and public institutions**.
- This reduces **entry barriers and middlemen in procurement processes**.

4. Target Beneficiaries

- The SWAYATT initiative supports several groups, including:
  - **Startups**
  - **Women Entrepreneurs**
  - **Youth Entrepreneurs**
  - **Micro and Small Enterprises (MSEs)**
  - **Self Help Groups (SHGs)**
  - **Last-mile sellers in rural areas**
- The goal is to ensure **greater participation of underrepresented groups in government procurement**.

5. Growth of Women Entrepreneurs on GeM

- Women-led enterprises have seen significant growth through the platform.
- Key figures:
  - Order value increased from **₹1,265 crore in FY 2018–19**
  - Reached **₹83,323 crore by FY 2025–26**
- Order volume increased from:
  - **1,01,530 orders** to **44,48,894 orders**

- This shows the rising participation of **women entrepreneurs in government markets**.

6. Growth of Startups on GeM

- Startups have also benefited greatly from the initiative.
- Key figures:
  - Order value increased from **₹497 crore in FY 2018–19**
  - Reached **₹54,005 crore by FY 2025–26**
- Order volume increased from:
  - **17,434 orders** to **5,30,578 orders**
- This reflects the growing role of **startups in public procurement**.

7. Special Features on GeM Supporting SWAYATT

- GeM has introduced dedicated storefronts to improve visibility of small enterprises.
- Important initiatives include:
  - **Startup Runway** – a special marketplace for **startup products and services**
  - **Womaniya** – a dedicated platform for **women entrepreneurs**
- These features help government buyers easily discover **innovative and diverse suppliers**.

8. Role of Government e-Marketplace (GeM)

- **GeM** is an online platform that enables government organisations to **procure goods and services digitally**.
- Benefits include:
  - **Transparency in procurement**
  - **Efficient and faster purchasing**
  - **Direct market access for sellers**
  - **Reduced corruption and middlemen**
- It connects **lakhs of government buyers with sellers across India**.

9. Importance of the SWAYATT Initiative

The initiative has helped:

- Promote **inclusive economic participation**
- Support **women and startup entrepreneurship**
- Increase **digital participation in public procurement**
- Create opportunities for **grassroots enterprises**
- It shows how technology-driven procurement systems can expand economic opportunities.

Conclusion

The **SWAYATT initiative**, launched through the **Government e-Marketplace (GeM)**, has significantly improved **access to government procurement for startups, women entrepreneurs and small enterprises**. With **over ₹83,000 crore orders by women entrepreneurs and more than ₹54,000 crore orders by startups**, the initiative demonstrates how **digital platforms can make public procurement more inclusive, transparent and accessible**, supporting India's broader goal of **inclusive economic growth.**

India–EFTA TEPA : Two Years of a Growing Trade Partnership

India-EFTA
Trade and Economic Partnership Agreement

1. Why is this news important?

- India has completed 2 years of signing the Trade and **Economic Partnership Agreement (TEPA) with the European Free Trade Association (EFTA).**
- The agreement started full implementation on 1 October 2025.
- Now India and these European countries are working together in trade, investment, services, and technology cooperation.
- This partnership is important fo**r India's plan to increase exports, attract investment, and strengthen** manufacturing.

2. What is EFTA?

- EFTA (European Free Trade Association) is a group of four European countries:
  - **Norway**
  - **Switzerland**
  - **Iceland**
  - **Liechtenstein**

- These countries are not part of the European Union (EU) but they are rich, developed and technologically advanced economies.
- Because people in **these countries have high purchasing power,** their markets are very valuable for exporters.

3. What is the India–EFTA TEPA?

TEPA (Trade and Economic Partnership Agreement) is a Free Trade Agreement (FTA) between India and EFTA countries.

Main purpose:

- Increase trade
- Promote investment
- Improve technology cooperation
- Strengthen industrial growth

The agreement connects India's growing economy with high-income European markets.

4. India's Growing FTA Network

According to the Prime Minister, India has now signed Free Trade Agreements with 38 countries.

These agreements help India to:

- Sell products in many global markets
- Reduce tariffs (import duties) on exports
- Increase global trade partnerships

Example:

- Trade with Australia and UAE has increased after FTAs.

This shows that FTAs are becoming an important tool of India's trade policy.

5. Key Features of the India–EFTA TEPA

(1) Access to Rich Markets

Indian exporters can now sell products more easily in high-income European markets.

Major sectors expected to benefit:

- Pharmaceuticals
- Textiles and garments
- Engineering goods
- Chemicals
- Processed food
- Marine products

(2) Large Investment Commitment

EFTA countries have promised $100 billion investment in India over 15 years.

This investment will support:

- Manufacturing
- Research and development
- Renewable energy
- Life sciences
- Digital technology

It is also expected to create around 1 million direct jobs in India.

(3) Tariff Reduction

Under the agreement:

EFTA commitments

- Cover 92.2% tariff lines
- Include 99.6% of India's exports

India's commitments

- Cover 82.7% tariff lines
- Include 95.3% of EFTA exports

But some sensitive sectors are protected, such as:

- Dairy
- Soya
- Coal
- Some agricultural products

Also, gold import duty remains unchanged.

(4) Technology and Industrial Growth

The agreement will help India get access to:

- Advanced machinery
- Precision equipment
- High-quality industrial components

This can help Indian industries:

- Improve production quality
- Reduce costs
- Join global supply chains

(5) Boost to Services Sector

- India's services sector will also gain benefits.
- The agreement supports cooperation in:
  - IT and IT-enabled services
  - Professional services
  - Knowledge industries
- It also allows Mutual Recognition Agreements (MRAs) for professions like:
  - Nursing
  - Chartered Accountancy
  - Architecture
- This makes it easier for professionals to work in partner countries.

6. Support for MSMEs and Start-ups

The agreement opens opportunities for:

- MSMEs
- Start-ups
- Technology firms

Possible benefits:

- Technology transfer
- Joint ventures
- Collaboration with specialised European firms

This helps Indian companies move up the value chain and become globally competitive.

7. Inclusive Growth Impact

- TEPA also focuses on inclusive economic growth.

It can benefit:

- Women entrepreneurs
- Youth entrepreneurs
- Farmers
- Fishermen
- Small businesses

Examples of possible export gains:

- Maharashtra – grapes
- Karnataka – coffee
- Kerala – spices and seafood
- North-East India – horticulture products

This connects local producers to global markets.

8. Role in India's Export Targets

India aims to achieve by 2030:

- $1 trillion merchandise exports
- $1 trillion services exports

TEPA supports this goal by:

- Opening advanced markets
- Attracting investment
- Strengthening manufacturing capacity

9. Why TEPA is Important for India

The agreement helps India in multiple ways:

- Expands market access
- Brings foreign investment
- Improves technology and manufacturing
- Creates jobs
- Strengthens global supply chain integration

Overall, it supports India's long-term vision of becoming a developed country (**Viksit Bharat**) by 2047.

Fiscal Health Index (FHI) 2026 Released by NITI Aayog

1. Why is this news important?

- NITI Aayog has released the **second edition of the Fiscal Health Index (FHI) 2026**.
- The index measures how strong or weak the finances of Indian states are It helps governments understand whether states are managing their money properly or facing financial pressure.

2. What is the Fiscal Health Index (FHI)?

The **Fiscal Health Index** is a report that studies the **financial condition of state governments in India**.

In simple words, it checks:

- How much **revenue** states earn
- How much **money they spend**
- How much **debt they have**
- Whether their finances are **stable or risky**

The goal is to help states **improve financial management and make better policy decisions**.

3. Why State Finances Matter

- State governments play a very important role in India's economy.
- They are responsible for:
  - Education
  - Health services
  - Infrastructure
  - Welfare schemes
  - Local development
- Because of these responsibilities, states spend a large amount of money.
- Today, **state governments hold about one-third of India's total government debt**. So if state finances become weak, it can affect the **overall economic stability of the country**.

4. Expansion of the Index in 2026

- The **first edition of the index** studied **18 major states**.
- The **second edition (2026)** has expanded its coverage to include:
  - **10 North-Eastern states**
  - **Himalayan states**
- Since these states have **different economic conditions**, they are **ranked separately** from the major states.
- This makes the index **more inclusive and realistic**.

5. Key Findings of the Report

- The report shows that **fiscal performance varies widely across states**.
- Important observations:
  - Many major states saw **moderate scores in 2023-24** compared to the previous year.
  - This indicates **growing financial pressure on state budgets**.
  - The **North-Eastern and Himalayan states** also show **large differences in fiscal health**.
- This means some states manage finances well, while others face **high debt and financial stress**.

6. Main Policy Suggestions from the Report

The report suggests several steps to improve fiscal health.

(1) Improve Revenue Collection

- States should increase **tax collection and revenue generation**.
- This strengthens their **financial independence**.

(2) Control Fixed Expenditures

- Some government expenses like salaries, pensions and interest payments are **committed expenditures**.
- States need to **manage these carefully** so that enough money remains for development projects.

(3) Increase Quality of Capital Expenditure

States should spend more on **long-term productive investments**, such as:

- Roads
- Infrastructure
- Energy
- Public services

These investments support **economic growth**.

(4) Better Fiscal Planning

States should use **medium-term fiscal planning** to control:

- Budget deficits
- Government debt

This helps maintain **stable public finances**.

(5) Improve Transparency

The report also suggests:

- Better public financial management systems
- Use of verified financial data
- Monitoring of **off-budget borrowings** (loans taken outside official budgets)

This improves **accountability and transparency**.

7. Importance of the Fiscal Health Index

The Fiscal Health Index helps in:

- Comparing **financial performance of states**
- Identifying **financial weaknesses**
- Supporting **evidence-based policymaking**
- Improving **fiscal discipline**

It is useful for:

- Policymakers
- Researchers
- Economists
- State governments

8. Why Strong State Finances Are Important

Healthy state finances are necessary for:

- **Macroeconomic stability**
- **Balanced regional development**
- **Better public services**
- **Long-term economic growth**

Improving fiscal resilience across states will also help India **reduce regional inequality and support development goals**.

Bharat Audyogik Vikas Yojna (BHAVYA) : Redefining Industrial Readiness

Why in News?

The Union Cabinet has recently approved the **Bharat Audyogik Vikas Yojna (BHAVYA)**, a landmark scheme with a massive outlay of **Rs 33,660 crore**. The project aims to establish **100 plug-and-play industrial parks** across the country, significantly reducing the time taken for businesses to move from "intent to production." This move is seen as a major step toward making India a global manufacturing hub by 2030.

Note

The BHAVYA scheme addresses the historical bottlenecks of land acquisition and infrastructure delays by providing **pre-approved, investment-ready land** (100 to 1,000 acres). Implemented through a "Challenge Mode," the scheme incentivizes states to offer reform-oriented and competitive proposals. Aligned with **PM GatiShakti**, these parks will serve as "smart industrial cities" featuring green energy and multimodal connectivity to lower logistics costs for MSMEs and global investors alike.

The Plug-and-Play Ecosystem

- **Pre-Cleared Land:** Industries can bypass the tedious process of obtaining individual environmental clearances and land conversions, as the parks come with **pre-approved regulatory permits**.
- **Ready Infrastructure:** The "plug-and-play" model means that basic utilities like water, electricity, and fiber-optic connectivity are available at the plot boundary.
- **Rapid Onboarding:** The goal is to allow companies to start setting up machinery the day they take possession, drastically shortening the gestation period for new factories.

Financial and Implementation Framework

- **Central Funding:** The Centre will provide up to **Rs 1 crore per acre** for internal infrastructure, including roads, drainage, and specialized testing labs.
- **Connectivity Support:** To ensure the parks are well-integrated, the government will fund **25% of the costs** for external connectivity (last-mile rail/road links).
- **Social Infrastructure:** Uniquely, the scheme also funds **worker housing** and healthcare facilities within or near the parks to promote a stable and healthy workforce.
- **Nodal Agency:** Implemented by the **National Industrial Corridor Development Corporation (NICDC)** under the DPIIT (Ministry of Commerce and Industry).

Strategic Integration and "No-Dig" Environment

- **PM GatiShakti Alignment:** Every park is mapped on the National Master Plan portal to ensure seamless synchronization with highways, railways, and ports.
- **Smart Utilities:** The parks will feature **integrated underground utility corridors**. This creates a "no-dig" environment, preventing frequent road excavations for laying cables or pipes.
- **Sustainability:** A strong emphasis is placed on **green energy** integration and zero-liquid discharge systems to meet global ESG (Environmental, Social, and Governance) standards.

Beneficiaries of the Scheme

- **Primary:** Manufacturing units, **MSMEs**, and startups that lack the capital to build their own large-scale infrastructure. Global giants looking for "China Plus One" locations also stand to benefit.
- **Secondary:** Local communities through job creation, logistics providers, and the service sector (maintenance, catering, and security).

Conclusion

BHAVYA is more than just an infrastructure project; it is a "ease of doing business" intervention. By taking the "land and approvals" burden off the shoulders of entrepreneurs, the government is lowering the entry barrier for manufacturing in India. If implemented effectively, these 100 parks will act as the engines of a **Viksit Bharat**, driving double-digit manufacturing growth and generating millions of formal-sector jobs.

Transformation in Infrastructure Financing : From Budgets to Ecosystems

Why in News?

India has undergone a **paradigm shift** in infrastructure development, moving from a budget-reliant model to a sophisticated ecosystem of **Public-Private Partnerships (PPP)** and innovative financial instruments. By early **2026**, this transition has been underscored by a record capital expenditure (capex) outlay and the operationalization of new risk-mitigation frameworks like the **Infrastructure Risk Guarantee Fund**.

Note :

India's infrastructure financing is now anchored by institutions such as **NaBFID** and **NIIF**, focusing on asset monetization to create a self-sustaining investment loop. While public capex has surged to **12.2 lakh crore** in the FY 2026–27 budget, the challenge remains in "crowding in" private capital—which currently accounts for a fraction of the required **USD 2.2 trillion** needed by 2030. The future roadmap relies on **Green Finance**, **City Economic Regions (CERs)**, and deepening the municipal bond market to achieve the **USD 7 trillion GDP goal**.

Key Pillars of the Financial Transformation

- **Exponential Capex Growth:** Public investment has jumped from 2 lakh crore (2014) to a projected **12.2 lakh crore** (2026–27), creating a massive multiplier effect on the economy.
- **Institutional Anchors:** * **NaBFID:** A premier Development Finance Institution (DFI) providing long-term credit and **Partial Credit Enhancement (PCE)** to boost bond ratings.
    - **NIIF:** Manages **USD 4.9 billion** in assets, partnering with global sovereign wealth funds for greenfield projects.
- **Asset Monetization (InvITs & REITs):** Developers have unlocked over **1.5 lakh crore** by pooling operational assets into Infrastructure Investment Trusts (InvITs), allowing retail investors to participate in infrastructure yields.
- **Risk Mitigation:** The **Infrastructure Risk Guarantee Fund** launched in 2026 provides partial guarantees to lenders, reducing default risks during the high-stakes construction phase.

Status of Infrastructure Development (2025–26)

- **Roads:** The National Highway network reached **1,46,572 km** by late 2025, with a construction pace of **33–34 km per day**.
- **Railways:** The network is **near 100% electrified**, with **160+ Vande Bharat trains** operational. Seven new **High-Speed Rail corridors** (e.g., Delhi-Varanasi) were announced in the 2026-27 budget.
- **Aviation & Ports:** Operational airports have doubled to **164**, while port capacity reached **2,762 million metric tonnes** in 2025.
- **City Economic Regions (CERs):** A 2026 flagship initiative targeting Tier II/III cities with an allocation of **5,000 crore each** via a "challenge mode" for reform-linked growth.

Challenges in Infrastructure Financing

1. **Land Acquisition:** Remains the primary cause for **35% of project delays** on the PRAGATI

platform, with costs often reaching 4x market value in rural areas.

2. **Private Sector Hesitancy:** Institutional investors (pension/insurance) allocate only about **6% to infrastructure**, preferring "brownfield" (operational) assets over risky "greenfield" (new) starts.
3. **Asset-Liability Mismatch:** Banks struggle to provide 20-30 year loans using short-term deposits, necessitating a shift toward the **Corporate Bond Market**.
4. **Municipal Weakness:** Urban Local Bodies (ULBs) often lack the credit ratings required to issue **Municipal Bonds**, leaving them over-reliant on central grants.

Strategic Roadmap for Sustainable Growth

- **Capital Recycling:** Using the **National Monetization Pipeline (NMP)** to sell operational assets and reinvest the proceeds into new construction.
- **Blended & Green Finance:** Leveraging "seed capital" to mobilize private credit and mainstreaming **Green/Blue Bonds** for climate-resilient projects like green hydrogen hubs.
- **GIFT City Gateway:** Utilizing the **IFSC in Gujarat** as a tax-neutral hub to attract Foreign Direct Investment (FDI) for sustainable infrastructure.
- **"No-Dig" Utility Corridors:** Integrating underground utility paths in new industrial parks to reduce maintenance costs and disruptions.

Conclusion

The evolution of infrastructure financing is the backbone of India's **Viksit Bharat @2047** vision. While the government has successfully built the institutional "anchors," the next phase requires solving the **land acquisition** puzzle and empowering **Municipal Bodies** to raise their own capital. By de-risking the construction phase and focusing on **Green Finance**, India can bridge the investment gap and solidify its position as a global manufacturing and logistics hub.

RBI Liquidity Management: VRR Auctions and OMO Infusions (2026)

Why in News?

In **March 2026**, the **Reserve Bank of India (RBI)** intensified its liquidity support to the banking system by infusing over **Rs 25,000 crore** through a **3-day Variable Rate Repo (VRR)** auction. This move follows a massive liquidity injection of **Rs 3.50 lakh crore** since January 2026 via **Open Market Operations (OMO)**. These actions aim to counter a persistent liquidity deficit caused by heavy advance tax outflows and increased cash demand during the spring festive season.

Note

The RBI utilizes a sophisticated toolkit to manage the "liquidity tap" of the Indian economy. While **OMO** serves as a long-term, durable tool for injecting money by purchasing government bonds, the **Variable Rate Repo (VRR)** acts as a "fine-tuning" instrument for short-term needs. By keeping the **Weighted Average Call Rate (WACR)**—the rate at which banks lend to each other—aligned with the policy repo rate, the RBI ensures stability in the financial markets and prevents a spike in short-term borrowing costs.

Understanding Variable Rate Repo (VRR)

- **Nature:** A market-driven tool under the **Liquidity Adjustment Facility (LAF)** used to inject short-term liquidity (typically 1 to 14 days).
- **The Auction:** Unlike the "Fixed Repo Rate," the interest rate here is determined by competitive bidding. The RBI sets a **notified amount**, and banks bid based on their immediate requirement for funds.
- **Collateral:** Banks must park **Government Securities (G-Secs)** with the RBI to borrow these funds.

- **Significance:** It allows for "price discovery," where the market signals the actual cost of funds rather than the RBI pre-setting a fixed rate for every minor liquidity mismatch.

Comparison: VRR vs. Fixed Repo Rate

Feature	Variable Rate Repo (VRR)	Fixed Repo Rate
Interest Rate	**Market-determined** via auction.	**Fixed** by RBI (Policy Rate).
Primary Goal	**Fine-tuning** short-term liquidity.	Signaling **long-term** policy stance.
Flexibility	High; reflects real-time demand.	Low; a single rate for all.

The Liquidity Adjustment Facility (LAF) Framework

Introduced in 2000 (Narasimham Committee), the LAF is the primary framework for managing daily liquidity. It operates within a "Corridor" to keep interest rates stable:

1. **Ceiling (Upper Bound) - MSF:** The **Marginal Standing Facility** (Repo + 25 bps) acts as an emergency valve for banks to borrow by dipping into their SLR quota.
2. **Center - Policy Repo Rate:** The benchmark rate at which RBI lends to banks (currently **5.25%**).
3. **Floor (Lower Bound) - SDF:** The **Standing Deposit Facility** (Repo - 25 bps) allows banks to park surplus funds with the RBI **without collateral**. It replaced the Fixed Reverse Repo in 2022.

Open Market Operations (OMO): The Heavy Lifter

- **Definition:** The purchase or sale of G-Secs in the secondary market.
- **Expansionary OMO (Purchase):** RBI buys bonds from banks and pays them cash, **injecting liquidity** into the system (as seen in the Rs 3.50 lakh crore infusion in early 2026).
- **Contractionary OMO (Sale):** RBI sells bonds and takes cash out of the system to **curb inflation**.
- **E-Kuber:** All OMO transactions are executed through the RBI's advanced core banking platform.

Conclusion

The RBI's recent interventions reflect a proactive stance in ensuring that the "engine" of the Indian economy—the banking system—does not run dry during periods of high seasonal demand. By balancing **durable liquidity (OMO)** with **temporary fine-tuning (VRR)**, the central bank maintains a neutral liquidity stance, ensuring that credit remains available to businesses and consumers at stable rates in 2026.

DGTR Anti-Dumping Probe : Ethyl Chloroformate and Hexamine (2026)

Why in News?

The **Directorate General of Trade Remedies (DGTR)**, operating under the Ministry of Commerce and Industry, has officially initiated an **anti-dumping investigation** into the import of **ethyl chloroformate** from **China**. Simultaneously, a separate probe has been launched into the dumping of **hexamine**—a key chemical intermediate—originating from **China, Russia, and the United Arab Emirates (UAE)**. These investigations aim to determine if "predatory pricing" from these nations is causing material injury to India's domestic chemical and pharmaceutical sectors.

Note :

The probes follow complaints from domestic manufacturers alleging that these chemicals are being exported to India at prices below their "normal value." If the DGTR finds evidence of dumping and subsequent injury to Indian industry, it will recommend the imposition of **Anti-Dumping Duties (ADD)**. These measures are critical for maintaining a level playing field, especially for chemicals like ethyl chloroformate and hexamine, which are foundational to India's "Pharmacy of the World" status.

Key Chemicals Under Scrutiny

1. Ethyl Chloroformate

- **Nature:** A highly reactive organic compound and a versatile reagent in organic synthesis.
- **Primary Uses:**
  - **Pharmaceuticals:** A critical intermediate for producing **modified penicillins** and other essential drugs.
  - **Agrochemicals:** Used in the synthesis of **herbicides** and insecticides.

- **Industrial:** Acts as a stabilizer for **PVC** and helps activate carboxylic acids to form reactive intermediates.

- **Hazards:** Highly toxic if inhaled and extremely flammable. It is a potent **lachrymator** (causes severe eye-watering) and can cause acid-type burns.

2. Hexamine

- **Nature:** A white crystalline heterocyclic organic compound produced from formaldehyde and ammonia.
- **Applications:**
  - Used extensively in making **resins, plastics**, and rubber additives.
  - Serves as a **clean-burning fuel tablet** for camping and laboratory use.
  - Has niche applications in medicine and organic chemistry.

Understanding Anti-Dumping Duty (ADD)

- **Definition:** A protectionist tariff imposed on imports that are believed to be "dumped"—priced lower than the fair market value in the exporter's home country.
- **The 2% Rule (De Minimis):** Under WTO rules, if the "dumping margin" is less than **2% of the export price**, no duty can be imposed.
- **Institutional Framework:** * **DGTR:** Conducts the investigation and recommends the duty.
  - **Ministry of Finance:** Takes the **final decision** on whether to actually impose the recommended tax.
- **Legal Basis:** Governed by the **WTO Anti-Dumping Agreement** and implemented in India via the *Customs Tariff Act*.

Anti-Dumping Duty (ADD) vs. Countervailing Duty (CVD)

Feature	Anti-Dumping Duty (ADD)	Countervailing Duty (CVD)
Target	Unfair pricing by **private companies**.	Unfair **subsidies** provided by foreign governments.
Objective	To offset "predatory pricing" that hurts local industry.	To neutralize the advantage gained through state financial aid.
WTO Agreement	Anti-Dumping Agreement.	Agreement on Subsidies and Countervailing Measures (SCM).
Calculation	Based on the **Dumping Margin** (Normal Value vs. Export Price).	Based on the **Subsidy Margin** (amount of government aid).

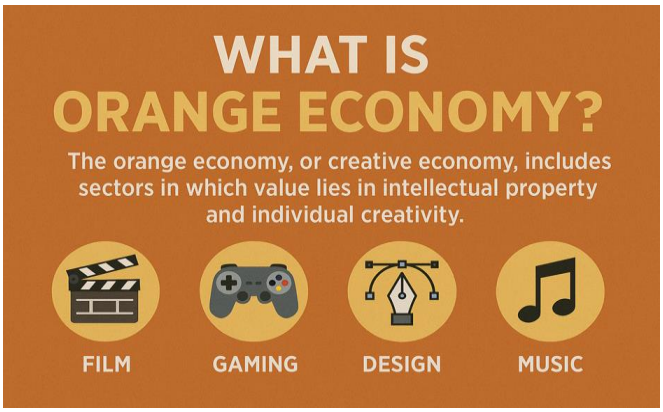
Strategic Significance for India

- **Reducing Import Dependence:** India's pharmaceutical sector is heavily reliant on Chinese intermediates (APIs and KSMs). These probes are part of a broader strategy to encourage domestic production and reduce vulnerability to global supply chain disruptions.
- **Protecting MSMEs:** Many small-scale chemical manufacturers in India struggle to compete with large-scale, state-backed production from countries like China and Russia.
- **Level Playing Field:** By neutralizing unfair price advantages, the government ensures that "Make in India" remains viable for the domestic chemical ecosystem.

Conclusion

The DGTR's dual investigation into ethyl chloroformate and hexamine represents a proactive step in safeguarding India's industrial interests in 2026. While these duties are often criticized by importers for raising raw material costs, they are viewed by the government as essential "defense mechanisms" against trade distortions. The outcome of these probes will significantly impact the pricing and availability of key pharmaceutical and industrial chemicals in the coming year.

Ministry of I&B Launches 3 Strategic Initiatives for India's Orange Economy



Why in News?

In **March 2026**, the **Ministry of Information & Broadcasting (MIB)** unveiled three landmark initiatives—the **National AI Skilling Initiative**, **MyWAVES**, and **Advanced EPG (Electronic Program**

Guide). These projects are designed to modernize India's creative infrastructure, democratize digital tools, and solidify the nation's position as a global leader in the **Orange Economy**.

Note :

The new initiatives focus on the **AVGC-XR (Animation, Visual Effects, Gaming, Comics, and Extended Reality)** sectors by integrating **Generative AI** into creative workflows. Through a partnership with **Google and YouTube**, the government aims to train **15,000 professionals** in high-end AI tools like **Gemini 3** and **Veo**. Additionally, the launch of **MyWAVES** and hardware-integrated **DD Free Dish** tuners will ensure that regional creators and remote viewers are brought into the mainstream digital fold.

3 Transformative Initiatives for the Creative Sector

- **1. National AI Skilling Initiative:** A Public-Private Partnership (PPP) implemented via the **Indian Institute of Creative Technologies (IICT), Mumbai**.
    - **Phase I (March–June 2026):** Focuses on foundational learning, including **AI leadership** and **prompt engineering** using Google Cloud certificates.
    - **Phase II (July–December 2026):** Advanced specialization in digital storytelling using cutting-edge models such as **Nano Banana** (for images) and **Veo** (for video).
- **2. MyWAVES Platform:** A creator-centric extension of the **WAVES OTT platform**.
    - **User-Generated Content (UGC):** Shifts the focus from passive viewing to active creation in multiple Indian languages.
    - **Create in India Challenge (CIC):** Includes high-stakes competitions like the **AI Film Making Challenge**, **Comics Creator Championship**, and the **Truth Tell Hackathon** to fight misinformation.
- **3. Advanced EPG with In-built Satellite Tuners:** * **Hardware Integration:** New television sets will come with built-in tuners for **DD Free Dish**, eliminating the need for external set-top boxes.
    - **Impact:** Drastically reduces hardware costs for rural households and ensures seamless access to public broadcasting.

Understanding the Orange Economy

- **Definition:** Also known as the **Creative Economy**, this model derives value from **intellectual property (IP)**, cultural capital, and creativity rather than physical manufacturing.
- **Global Footprint:** Represents roughly **3% of global GDP** and supports **30 million jobs** worldwide.
- **Indian Context:** India's media and entertainment revenue is expected to surge from **USD 35.3 billion** (2025) to **USD 47.2 billion** (2029).
- **Future Target:** The **Union Budget 2026-27** announced plans to set up **Content Creator Labs** in **15,000 schools**, aiming to build a workforce of **2 million experts** by 2030.

Key Sectors and Economic Impact

- **AVGC-XR:** This sector is the primary engine of the Orange Economy, encompassing everything from mobile gaming to high-end cinematic VFX.
- **Cultural Tourism & Design:** Leveraging India's diverse heritage through digital storytelling to boost tourism and fashion exports.
- **Extended Reality (XR):** Integrating **AR/VR** into education and training, supported by the **XR Creator Hackathon**.

Conclusion

The **2026 initiatives** by the Ministry of I&B mark a strategic shift toward "Creative Sovereignty." By empowering local storytellers with AI and removing hardware barriers for rural audiences, India is ensuring that its **Orange Economy** is inclusive and technologically superior. These steps align with the vision of making India a **"Global Content Hub,"** where the next generation of creators is defined by their imagination rather than their access to expensive resources.

RBI Retains 4% Inflation Target : Macroeconomic Outlook (2026–2031)

Why in News?

The Government of India has officially **retained the 4% retail inflation target** (with a tolerance band of +/- 2%) for the next five-year cycle, effective from **April 1, 2026, to March 31, 2031**. This decision reinforces the **Flexible Inflation Targeting (FIT)** framework, ensuring that price stability remains the primary anchor of India's monetary policy for the next decade. This is the second such extension since the framework's review in 2021.

Note

Flexible Inflation Targeting (FIT) allows the **Reserve Bank of India (RBI)** to prioritize price stability while remaining sensitive to economic growth. By keeping the target at 4%, the government aims to protect the purchasing power of citizens while providing a predictable environment for investors. Since its adoption in 2016, FIT has successfully lowered average inflation from **6.8%** (pre-FIT) to **4.9%**, despite global shocks like the pandemic and the Russia-Ukraine conflict.

Understanding Flexible Inflation Targeting (FIT)

- **The Goal:** To maintain the **Headline Consumer Price Index (CPI)** at 4%. The "Flexible" tag means the RBI can tolerate a range between **2% and 6%** to avoid stifling growth during temporary shocks.
- **Legal Mandate:** Under **Section 45-ZA** of the RBI Act, 1934, the central bank is legally bound to pursue price stability as its primary objective.
- **The Anchor:** CPI (Headline) with the **new 2024 base year** is used to measure the cost of living for the average household.
- **The Multi-Member Decision:** The **Monetary Policy Committee (MPC)** meets at least 4 times a year to decide the **Repo Rate** (the benchmark interest rate).
- **Failure Clause:** If inflation stays outside the 2–6% band for **3 consecutive quarters**, the RBI must issue a public report to the government explaining the failure and the timeline for recovery.

Monetary Policy Instruments & Actions

Instrument	Action to Curb Inflation	Economic Impact
Repo Rate	**Increase**	Borrowing costs rise; spending and investment drop.
Cash Reserve Ratio (CRR)	**Increase**	Banks hold more cash with RBI; lending capacity shrinks.
Open Market Operations (OMO)	**Sell Securities**	RBI "sucks out" excess cash from the banking system.
Statutory Liquidity Ratio (SLR)	**Increase**	Banks must buy more Govt bonds, reducing credit to the public.

Monetary Policy Stances

The MPC uses "stances" to signal its future moves to the markets:

1. **Accommodative (Dovish):** Focused on boosting growth; likely to cut or hold rates low.
2. **Hawkish (Contractionary):** Focused strictly on controlling high inflation; likely to hike rates.
3. **Neutral:** Rates could move in either direction based on incoming economic data.
4. **Withdrawal of Accommodation:** A transition phase where the RBI removes the "extra" money pumped into the system during a crisis (like the post-pandemic stimulus).

Historical Performance (2016–2025)

- **The Hump Shape:** Inflation remained well-aligned with the 4% target during the initial and most recent three-year blocks.
- **The Middle Crisis:** Between 2020 and 2023, inflation pushed toward the **6% upper limit** due to global supply chain disruptions and energy price spikes.
- **Long-term Success:** The shift to FIT has brought a significant structural decline in India's inflation volatility, anchoring the expectations of both households and businesses.

Conclusion

By retaining the 4% target until 2031, the government has signaled **policy continuity** and a commitment to "low and stable" inflation. While the 2026-2031 period will face challenges from climate-induced food price volatility and global geopolitical shifts, the FIT framework provides the RBI with the necessary "shield and sword" to protect the Indian economy. For a developing nation like India, this stability is the bedrock for achieving sustained 7-8% GDP growth.

The Gold Price Anomaly : Geopolitical Tensions *Vs*. Macroeconomic Reality (2026)

Why in News?

In **March 2026**, global and domestic gold prices experienced a sharp and anomalous decline of over **11% to 15%**, despite the escalation of the **West Asian conflict**. Traditionally, gold serves as a "safe-haven" asset that rises during geopolitical instability; however, the current crisis has triggered an unconventional "liquidity event" where macroeconomic pressures like high oil prices and surging bond yields have overridden traditional haven demand.

Note

The 2026 gold crash is driven by a "toxic mix" of soaring **crude oil prices (exceeding USD 120/barrel)** and a hawkish **US Federal Reserve** policy. High energy costs have spiked inflation fears, leading markets to abandon hopes for rate cuts and pivot toward high-yielding **U.S. Treasury bonds**. Furthermore, a massive sell-off in stock markets forced institutional investors into a **liquidity trap**, selling off their profitable gold holdings to meet margin calls, which briefly turned the **US Dollar** into a more attractive safe haven than bullion.

Key Factors Driving the Fall in Gold Prices

- **Oil Price Shock & "Higher for Longer" Rates:** The conflict threatened the **Strait of Hormuz**, pushing oil prices to record highs. This inflationary pressure forced central banks to maintain interest rates at **3.5%–3.75%**, increasing the **opportunity cost** of holding non-yielding gold.
- **The Liquidity Squeeze:** As global equities plummeted in March 2026, hedge funds and traders faced **margin calls**. They sold gold—their most liquid and profitable asset—to raise immediate cash, leading to "paper market" flushing.
- **Surging Bond Yields:** Investors shifted capital into US government bonds, which offered guaranteed fixed returns, making zero-yield gold less competitive.
- **US Dollar Dominance:** The **US Dollar Index (DXY)** surged past 100. Since gold is priced in USD, a stronger dollar made the metal significantly more expensive for Indian and European buyers, dampening demand.

Gold as a Traditional Safe Haven

Traditional Trend	2026 Deviation
Geopolitical Crisis	Gold prices fell despite the war due to immediate liquidity needs.
Inverse Rate Relation	Expected rate hikes to fight oil-inflation made gold less attractive.
Inverse USD Relation	The Dollar emerged as a rival safe haven, suppressing gold's appeal.

The "New" Safe Haven: US Dollar

In the short term, the USD has dominated due to the **Petrodollar** effect. Rising oil prices increased the global demand for dollars to pay for energy imports. However, by **April 1, 2026**, prices showed signs of recovery (rising 1.73% on MCX) as hints of de-escalation in the Iran conflict weakened the dollar and allowed "dip-buyers" to return to the market.

Strategic Shift: De-dollarization in India

Despite short-term price volatility, the long-term strategic accumulation of gold remains robust:

- **RBI Gold Holdings:** As of early 2026, the **Reserve Bank of India's** gold reserves reached a record **880.3 metric tonnes**.

- **Forex Composition:** Gold now accounts for **17.2%** of India's total foreign exchange reserves—the highest proportion on record.
- **Motivation:** This "aggressive accumulation" is part of a broader shift toward **De-dollarization**, aimed at diversifying reserves to protect against Western financial sanctions and dollar weaponization.

Gold: Elemental and Industrial Profile

- **Scientific Basics:** Chemical symbol **Au** (Atomic Number 79). Originates largely from prehistoric meteorite impacts.
- **Noble Metal Properties:** Chemically unreactive; it does not tarnish or rust. It dissolves only in **aqua regia** (a mix of nitric and hydrochloric acids).
- **Industrial Use:** Highly conductive and resistant to corrosion, making it indispensable in **aerospace, electronics, and medical nanoparticles**.

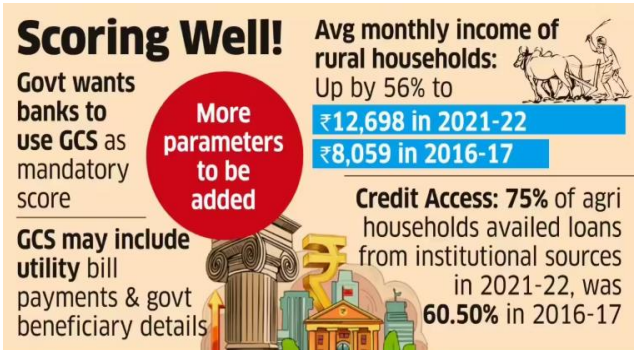
Gold Reserves in India

- **Geographical Distribution:** Primarily found in the **Peninsular Plateau**.
- **Major Producers: Karnataka** leads with the world-famous **Hutti and Kolar Gold Fields (KGF)**, followed by Andhra Pradesh (Ramagiri).
- **Total Reserves: Bihar** holds the largest estimated share of reserves (~45%), followed by **Rajasthan** (~23%).
- **Investment Trend:** Indian gold ETFs crossed the **110-tonne milestone** in February 2026, with over **11 million** active investor accounts.

Conclusion

The **March 2026 gold crash** was a mechanical correction driven by a unique "oil-inflation-interest rate" cycle rather than a loss of fundamental value. As markets stabilize in April 2026, gold is expected to resume its upward trajectory toward a year-end target of **USD 5,000–6,000/oz**. For India, the resilience of domestic demand and the RBI's strategic buying confirm that gold remains the ultimate hedge against a volatile global financial order.

Grameen Credit Score (GCS) : Building Individual Credit Identities for Rural India



Why in News?

In **April 2026**, the Government of India issued a mandate requiring all public and regional rural banks to adopt the **Grameen Credit Score (GCS)** as the primary assessment tool for rural lending. This follows the successful pilot phase initiated after the **Union Budget 2025-26**. The move is specifically designed to bridge the "credit gap" for first-time borrowers in rural areas who have historically been excluded from formal banking due to a lack of traditional CIBIL records.

Note

The Grameen Credit Score (GCS) is an **alternative credit scoring model** that evaluates the creditworthiness of the "unbanked" by utilizing non-traditional data points. Unlike standard models that rely on past bank loans, the GCS integrates **social and behavioral collateral**—such as peer-group trust and repayment consistency within **Self-Help Groups (SHGs)**. By transitioning from "group-based" records to **individual credit identities**, the GCS aims to empower nearly **100 million SHG members** and small-scale farmers to access personal formal credit.

Key Features of the Grameen Credit Score (GCS)

- **The GCS Range:** To ensure seamless adoption by formal lenders, the score maintains the standard **300–900** range, identical to traditional CIBIL scores.
- **Alternative Data Points:** In the absence of a loan history, the GCS analyzes data from:
  - **Kisan Credit Cards (KCC)** and tractor loan repayments.
  - Land records and property data from the **SVAMITVA Scheme**.
  - Repayment behavior in **Priority Sector Lending (PSL)**.
- **Micro-Enterprise Support:** As a direct application of the GCS, the government has launched **Credit Cards for Micro-Enterprises**

with a credit limit of up to **5 lakh**, targeted at rural entrepreneurs.

- **Collaboration:** Developed by major **Credit Information Companies (CICs)**—including TransUnion CIBIL, Experian, and Equifax—ensuring that the rural score is recognized across the entire Indian banking ecosystem.

Strategic Significance

1. **Individual Empowerment:** Historically, only the SHG as a collective had a credit record. The GCS allows an individual woman in a village to "extract" her personal repayment history from the group to apply for an independent bank loan.
2. **Behavioral Collateral:** It recognizes "social capital"—the reliability of a borrower within their community—as a valid metric for risk assessment, reducing the heavy reliance on physical collateral (like land or gold).
3. **Accuracy for Irregular Income:** Traditional models often penalize rural borrowers for irregular seasonal income (e.g., harvest cycles). The GCS is **tailored to rural economic patterns**, providing a more accurate reflection of a farmer's ability to pay.
4. **Targeting the "Underbanked":** By creating a formal digital footprint, the GCS prevents rural borrowers from falling into the traps of high-interest local moneylenders.

Comparison: Traditional CIBIL vs. Grameen Credit Score

Feature	Traditional CIBIL	Grameen Credit Score (GCS)
Primary Data	Bank loans, Credit cards, EMIs.	SHG records, KCC, Social behavior.
Target Group	Urban/Salaried/Formal Sector.	Rural/SHGs/Small Farmers.
Collateral Focus	Asset-based (Income/Property).	Trust-based (Social Collateral).
Identity Type	Purely Individual.	Individualized from Group data.

Conclusion

The **Grameen Credit Score** is a landmark in "Financial Democracy." In 2026, it represents the final step in India's journey from **Jan Dhan (Access)** to **Grameen Credit (Capital)**. By turning social trust into a quantifiable financial asset, the GCS ensures that a villager's integrity is as valuable as an urban professional's salary slip. This framework is expected to unlock billions in rural credit, driving the next wave of grassroots entrepreneurship under the **Viksit Bharat** vision.

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Science & Technology

Rare Disease Day 2026 : Bridging the Gap in Equity and Care

Why in News?

On **February 28, 2026**, India joined the global community in observing **Rare Disease Day** to raise awareness for the approximately **72–96 million** Indians living with these conditions. Under the **Union Budget 2026–27**, the government announced a significant expansion of support, including **import duty exemptions for 7 additional rare diseases**, bringing relief to families reliant on specialized "orphan drugs" and medical foods from abroad.

1. Understanding Rare Diseases

- **Defining "Rare":** There is no single universal definition. Most global bodies define a rare disease as one affecting **1 in 2,000 persons** or fewer.
- **The Genetic Link:** Approximately **80%** of rare diseases are of **genetic origin** (such as Lysosomal Storage Disorders), and **50–75%** manifest at birth or during early childhood.
- **The Treatment Gap:** Globally, while **6,000–10,000** rare diseases have been identified, nearly **95%** currently lack an approved curative therapy, making diagnosis a "diagnostic odyssey" for many.

2. India's Policy Framework (NPRD 2021)

Unlike many nations, India does not use a strict numerical threshold for its definition due to limited local data. Instead, the **National Policy for Rare Diseases (NPRD) 2021** categorizes disorders into three groups:

- **Group 1:** Disorders amenable to one-time curative treatment (e.g., bone marrow transplant).

- **Group 2:** Diseases requiring long-term/lifelong treatment with relatively lower costs.
- **Group 3:** Diseases for which definitive treatment is available but involves very high costs and lifelong therapy.
- **Financial Support:** The government provides up to **50 lakh** in financial assistance to patients for treatment at designated **Centres of Excellence (CoEs)**.

3. New Developments in 2026

- **Import Duty Exemptions:** The **Union Budget 2026–27** expanded the list of medicines exempt from basic customs duty to include **7 new rare diseases**, reducing the financial burden on personal imports of life-saving drugs.
- **PLI Scheme Expansion:** Rare disease drugs are now a priority focus under the **Production Linked Incentive (PLI) Scheme for Pharmaceuticals**, aimed at encouraging "Make in India" for orphan drugs to reduce dependency on expensive imports.
- **Digital Registry:** As of **early 2026**, the national registry for rare diseases has seen a **20% increase** in registrations, helping the government gather the epidemiological data needed for a formal prevalence-based definition.

4. Global Context and Origin

- **Established:** In **2008** by **EURORDIS** (European Organisation for Rare Diseases).
- **Date Symbolism:** Observed on the last day of February. In leap years, it is held on **February 29**, the "rarest" day on the calendar.
- **2026 Theme:** Focused on **"Equity in Action,"** emphasizing that a patient's zip code should not determine their access to life-saving innovation.

Conclusion

The 2026 observance of Rare Disease Day in India highlights a shift from basic awareness to structural support. By integrating rare diseases into the **PLI Scheme** and expanding tax exemptions, the government is addressing the "dual challenge" of high costs and limited availability. The next milestone will be the operationalization of the **National Fund for Rare Diseases**, intended to provide sustainable, long-term funding beyond the initial 50 lakh cap.

Supreme Court Scrutiny : The Push for Mandatory NAT and the "Right to Safe Blood"

Why in News?

In **March 2026**, the **Supreme Court of India** sought comprehensive details from the Union Government regarding the cost, feasibility, and infrastructure required to implement **Nucleic Acid Amplification Testing (NAT)** in all government hospitals. The court is responding to a **Public Interest Litigation (PIL)** that highlights the high rate of transfusion-transmitted infections (TTIs) among vulnerable groups, particularly children with Thalassemia. The bench has indicated that it will examine whether the **"Right to Safe Blood"** is an intrinsic facet of the **Right to Life under Article 21**.

1. The Constitutional and Legal Challenge

- **Article 21 Argument:** The PIL urges the court to declare that access to safe, infection-free blood is a fundamental right. It argues that the state's failure to provide advanced screening violates the right to a dignified life.
- **Outdated Regulatory Framework:** Currently, the **Drugs and Cosmetics Act of 1940** only mandates **serological testing** (like ELISA). NAT, which is the global gold standard, is not yet legally mandatory across India's 3,800+ blood banks.
- **The "Window Period" Risk:** Traditional tests wait for the body to produce antibodies, creating a "window period" where an infected donor might test negative. NAT narrows this gap by detecting the viral genetic material itself.

2. The Thalassemia Crisis

- **"Thalassemia Capital":** The petition notes that India has the largest number of

Thalassemia patients in the world. These patients require blood transfusions every **15 to 20 days**.

- **Systemic Failure:** The plea highlighted preventable cases in **Madhya Pradesh, Jharkhand, and Uttar Pradesh**, where children contracted **HIV and Hepatitis** due to blood screened only through basic serology.
- **The Vulnerability Factor:** Because Thalassemia patients receive hundreds of units of blood over their lifetime, the cumulative risk of contracting a TTI through standard-tested blood is exponentially higher.

3. Understanding Nucleic Acid Amplification Testing (NAT)

- **Mechanism:** NAT is a highly sensitive molecular technique that screens blood by **amplifying** targeted regions of viral **RNA or DNA**.
- **Direct Detection:** Unlike ELISA, which looks for the immune response, NAT looks for the virus itself.
- **Detection Profile:** It drastically reduces the "window period" for:
    - **HIV-1 and HIV-2**
    - **Hepatitis B (HBV)**
    - **Hepatitis C (HCV)**
- **Reducing Wastage:** NAT helps identify **"false reactive"** donations that standard tests might incorrectly flag as infected, ensuring that safe blood is not unnecessarily discarded.

4. Implementation Hurdles

- **Cost Factor:** NAT is significantly more expensive than ELISA. The Supreme Court has asked for a **cost-benefit analysis** to see if a centralized "hub-and-spoke" model can make it affordable for government hospitals.
- **Infrastructure:** Implementing NAT requires specialized labs, continuous power supply, and highly trained molecular biologists, which are currently lacking in many district-level government blood banks.

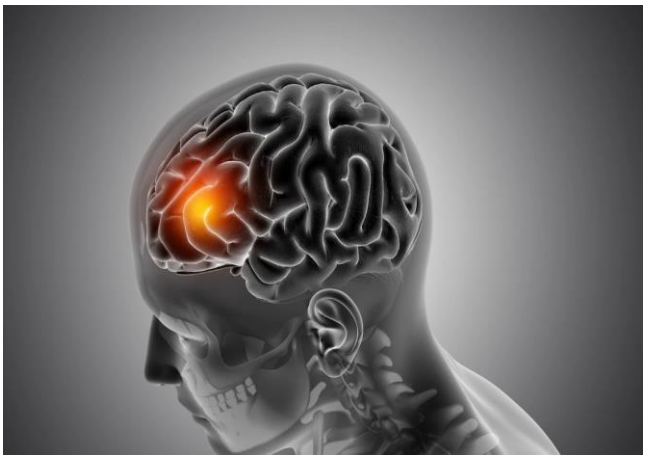
Comparison of Blood Screening Technologies (2026)

Feature	Serological Testing (ELISA)	Nucleic Acid Testing (NAT)
Detection Basis	Antibodies/Antigens	**Viral RNA/DNA (Direct)**
Window Period	Long (Weeks to Months)	**Short (Days)**
Sensitivity	Moderate	**Very High**
Cost	Low (Affordable)	High (Requires Investment)
Legal Status	**Mandatory** (1940 Act)	**Optional** (Current)

Conclusion

The Supreme Court's intervention in 2026 marks a potential turning point for blood safety in India. By shifting the debate from "logistics" to "fundamental rights," the court is pressuring the government to modernize a century-old regulatory framework. If NAT is made mandatory, it would represent the most significant upgrade to India's public health infrastructure since the blood safety reforms of the late 1990s.

Meningococcal Infection : Meghalaya High Alert Following Agniveer Deaths



Why in News?

In **late February and March 2026**, the Government of Meghalaya issued a high-level health advisory following the tragic deaths of **two Agniveer trainees** undergoing training at the **Assam Regimental Centre (ARC)** in Shillong. The deaths, which occurred between February 23 and 27, were attributed to suspected **meningococcal bacterial infection**. In response, the state's Health and Family Welfare Department activated emergency surveillance, placing over **30 other trainees under medical observation** at the Military Hospital to prevent a wider outbreak.

1. Etiology and Transmission

- **Pathogen:** The disease is a severe, rapidly progressing infection caused by the bacterium ***Neisseria meningitidis***.
- **Mechanism:** It is often referred to as "diplococci septicaemia" in its bloodstream form.
- **Transmission:** The bacteria spread through **direct contact** with respiratory droplets or throat discharges (coughing, sneezing, or sharing food/drinks) from infected individuals or asymptomatic carriers.
- **Incubation Period:** Typically ranges from **2 to 10 days**, commonly manifesting within 3 to 4 days.

2. Clinical Manifestations

The infection primarily leads to two life-threatening conditions:

- **Meningitis:** Inflammation of the protective membranes (meninges) covering the brain and spinal cord.
- **Meningococcemia:** A severe bloodstream infection (sepsis/blood poisoning) that causes damage to blood vessels and organs.
- **Symptoms to Report:** Sudden high fever, severe headache, stiff neck, vomiting, and a distinctive **rapidly spreading purple-colored rash** (purpuric rash) that does not fade under pressure.

3. Risk Factors and Treatment

- **High-Risk Groups:** Infants under 5, teenagers, and young adults (**16–23 years**).
- **Crowded Settings:** The disease thrives in high-density environments like **military barracks**, college dormitories, and hostels where people live in close proximity.
- **Medical Intervention:** Immediate treatment with intravenous **antibiotics** (such as Ceftriaxone or Penicillin) is crucial. Even with care, the mortality rate is approximately **10%–15%**.
- **Vaccination:** The **Men5CV** is the first WHO-recommended conjugate vaccine that protects against the five main serogroups (A, C, W, Y, and X) causing the disease.

4. Containment Measures (2026)

- **Chemoprophylaxis:** Authorities administered prophylactic doses of the antibiotic **Ciprofloxacin** to all identified close contacts of the deceased trainees.
- **Surveillance:** The **East Khasi Hills District Surveillance Unit**, in coordination with the State Surveillance Unit (SSU), launched an active epidemiological investigation and contact tracing.
- **Protocols:** Strict **masking and restricted movement** (quarantine) were enforced within the ARC Happy Valley campus. Mass gatherings and inter-company mixing were temporarily suspended to avert a public health crisis.
- **Rumor Control:** The Defence PRO issued a clarification debunking fake social media messages claiming the detection of Nipah virus at the training center, confirming the situation was exclusively related to meningococcal bacteria.

Conclusion

The 2026 meningococcal scare in Shillong serves as a critical reminder of the vulnerability of institutional settings to rapid-onset bacterial infections. While the situation was successfully contained within the ARC through swift quarantine and antibiotic administration, the Meghalaya government continues to urge public vigilance regarding respiratory hygiene. The incident underscores the importance of high-frequency surveillance in military and educational dormitories to ensure early detection and prevent community transmission.

National Science Day 2026

Why in News?

India observed **National Science Day** on **28 February**, commemorating Sir **CV Raman's** discovery of the **Raman Effect** (1928). The **2026 theme** is **"Women in**

Science: Catalyzing Viksit Bharat". The Government of India designated this day in **1986**, with the inaugural celebration taking place in **1987**.

CV Raman: Profile

- **Identity:** Sir Chandrasekhara Venkata Raman was one of India's greatest physicists.
- **Legacy:** Best remembered for discovering the **Raman Effect**, which proved the **quantum nature of light**.
- **Nobel Prize Significance:** Received the **1930 Nobel Prize in Physics**, making him the **first Asian** and the **first non-White person** to win a Nobel Prize in any scientific field.

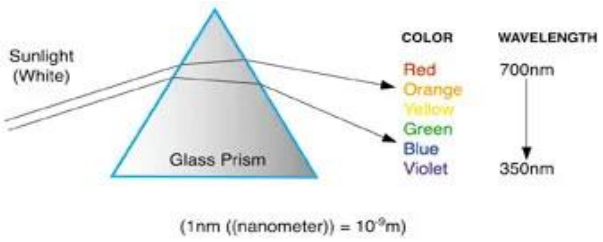
Honors and Recognition

- **Knighthood:** Knighted in **1929**.
- **Fellow of the Royal Society (FRS):** Elected in **1924**.
- **Bharat Ratna:** Received India's highest civilian award in **1954**.
- **Lenin Peace Prize:** Awarded in **1957**.

Institutional Contributions

- **Raman Research Institute (1948):** Founded in Bengaluru.
- **Indian Journal of Physics (1926):** Established to promote scientific literature.
- **Indian Academy of Sciences (1934):** Created lasting infrastructure for Indian scientific research.

Raman Effect



- **Discovery:** Co-discovered with collaborator **KS Krishnan**.
- **Phenomenon:** Occurs when light passing through a transparent material undergoes a **change in wavelength** due to interaction with **molecular vibrations**.
- **Raman Spectroscopy:** Provides a **non-destructive method** to analyze molecular structure.

Modern Applications

- **Forensics:** Detecting drugs in sealed evidence bags.
- **Industry:** Safe nuclear waste analysis and non-destructive material identification.
- **Other Fields:** Widely used in chemistry, biology, materials science, and medicine.

Denmark's Certification for Elimination of Mother-to-Child Transmission

Why in News?

Denmark has been certified by the **World Health Organization (WHO)** as the first country in the **European Union** to eliminate **mother-to-child transmission (EMTCT)** of **HIV** and **syphilis**. This milestone reflects the country's success in integrating robust testing and treatment into its universal healthcare system.

Understanding Elimination of MTCT

- **Definition:** Mother-to-Child Transmission (MTCT) is the spread of infections like HIV and syphilis from a mother to her baby during **pregnancy, childbirth, or breastfeeding**.
- **Risks of Non-Intervention:** Can lead to infant infections, stillbirths, neonatal deaths, or congenital diseases.
- **WHO Criteria for EMTCT:**
  - Reducing transmission rates to **below 50 per 100,000 live births**.
  - Ensuring **over 95%** of pregnant women receive testing and treatment.

Global Context

- Denmark joins **over 20 countries and territories** validated by the WHO.
- Other validated regions include:
  - **Caribbean:** Anguilla, Antigua.
  - **South America:** Brazil.
  - **Africa:** Botswana.
  - **Asia:** Malaysia, Maldives.

WHO's Triple Elimination Strategy

The WHO promotes the **triple elimination** of HIV, syphilis, and **Hepatitis B** through four core pillars:

1. **Universal antenatal care.**
2. **Integrated maternal infection testing.**
3. **Effective treatment protocols.**
4. **Strong health systems** with community engagement and human-rights protections.

Key Diseases Profile

- **HIV (Human Immunodeficiency Virus):** Attacks the immune system (specifically **CD4 cells**). If untreated, it leads to **AIDS**, making the body vulnerable to life-threatening infections and cancers.
- **Syphilis:** A bacterial infection caused by ***Treponema pallidum***. It spreads via sexual contact and progresses through stages: painless sores, rashes, and potentially severe damage to the heart and brain if left untreated.

Delhi's Electric Vehicle (EV) Policy 2.0 : Hybrid Incentives

Why in News?

The Delhi government's upcoming **Electric Vehicle Policy 2.0** is expected to extend road tax and registration fee exemptions—currently exclusive to Battery Electric Vehicles (BEVs)—to **Hybrid Electric Vehicles (HEVs)** and **Plug-in Hybrids (PHEVs)** as well. This strategic pivot aims to accelerate the transition to cleaner mobility by offering a middle ground for consumers concerned about charging infrastructure.

Understanding Hybrid Electric Vehicles (HEVs)

- **Definition:** An automobile that combines a **conventional internal combustion engine (ICE)** with an **electric propulsion system**.
- **Self-Charging:** Standard hybrids do not need to be plugged in. They recharge their batteries through **regenerative braking** (converting kinetic energy into electricity) and by using the engine as a generator.
- **Seamless Operation:** The vehicle automatically switches between the engine and the electric motor to optimize fuel efficiency, especially in heavy city traffic.

Types of Hybrid Configurations

- **Parallel Hybrid:** Both the engine and motor are connected to the wheels. They can work independently or together to power the car.
- **Series-Parallel (Power-Split):** Intelligently switches between electric-only, series (engine charges motor), or parallel (both drive wheels) modes.
- **Plug-in Hybrid (PHEV):** Features a larger battery that **can be recharged via an external plug**. It offers an electric-only range for commuting and a hybrid mode for long-distance travel.

Advantages and Disadvantages

Advantages	Disadvantages
Zero Range Anxiety: No dependence on charging stations for long trips.	**Complexity & Cost:** Higher initial purchase price due to dual powertrains.
Fuel Economy: Superior efficiency in stop-and-go city driving.	**Battery Weight:** Large batteries can reduce trunk space and add weight.
Lower Emissions: Significantly cleaner than pure petrol or diesel cars.	**Maintenance:** Potential for high battery replacement costs over time.

Other Alternative Technologies

- **Battery Electric Vehicles (BEVs):** Powered entirely by electricity with zero tailpipe emissions; requires external charging.
- **Fuel Cell Electric Vehicles (FCEVs):** Uses **hydrogen fuel cells** to produce electricity on board; emits only water vapor.
- **Hydraulic Hybrids:** Stores braking energy in **fluid pressure** (hydraulic accumulators) instead of batteries.
- **Alternative Fuels:** Includes **Flex-fuel (E85 ethanol blends)**, **CNG**, and **Biofuels**, which reduce emissions without full electrification.

Proposed Policy Impact in Delhi

- **Financial Relief:** The draft policy proposes full road tax waivers for hybrids priced **up to Rs 20 lakh**, potentially saving buyers over **Rs 1.75 lakh** upfront.

- **Regional Alignment:** This move aligns Delhi with **Uttar Pradesh**, which already offers significant registration waivers for strong hybrid vehicles.
- **Exclusion:** The exemptions are strictly for **strong hybrids** and PHEVs; **mild hybrids** (which cannot run on electric power alone) are excluded.

Emission Standards for Green Ammonia and Green Methanol

Why in News?

The **Ministry of New and Renewable Energy (MNRE)** has notified specific emission thresholds for **Green Ammonia** and **Green Methanol**. This regulatory move aims to provide clarity for investors and accelerate the trade of green hydrogen derivatives under the **National Green Hydrogen Mission (NGHM)**.

National Green Hydrogen Mission (NGHM)

- **Launched:** Approved in **2023** to make India a global hub for clean hydrogen.
- **2030 Targets:**
  - **125 GW** of renewable energy capacity for hydrogen production.
  - **Rs 8 lakh crore** in total investments.
  - Creation of **6 lakh jobs**.
  - Reduction of **Rs 1 lakh crore** in fossil fuel imports.
  - **50 million metric tons** of annual CO2 emission cuts.

Green Hydrogen: The Foundation

- **Production:** Generated through the **electrolysis of water** using renewable sources like solar or wind.
- **India's "Green" Standard:** Hydrogen qualifies as green if emissions do not exceed **2 kg CO2 equivalent** per kg of hydrogen produced.
- **Alternative Source:** Can be produced from **biomass** (agricultural waste) if it stays within this emission limit.

New Derivative Standards

Green Ammonia

- **Emission Threshold:** Not more than **0.38 kg CO_2 equivalent** per kg of ammonia (calculated as a 12-month average).
- **Process:** Produced by combining nitrogen with green hydrogen.
- **Utility:** Acts as a carbon-neutral fuel and sustainable fertilizer feedstock. It is vital for decarbonizing **shipping, power generation, and agriculture**.

Green Methanol

- **Emission Threshold:** Not more than **0.44 kg CO2 equivalent** per kg of methanol (calculated as a 12-month average).
- **Process:** Produced from biomass (bio-methanol) or by combining green hydrogen with captured carbon.
- **Carbon Sources:** CO2 can be sourced from **biogenic sources, direct air capture,** or existing industrial exhaust.
- **Impact:** A net-zero liquid fuel that can reduce greenhouse gas emissions by **60–95%** compared to fossil-based methanol.

Strategic Significance

- **Regulatory Clarity:** Establishes a formal "green" certification, essential for international trade and subsidies.
- **Industrial Decarbonization:** Targets "hard-to-abate" sectors such as **heavy industry, fertilizers, and global shipping**.
- **Investment Boost:** Provides a stable framework for the Rs 8 lakh crore investment goal under the NGHM.

LIGO-India Project : Status and Progress (2026)

Why in News?

As of **March 2026**, India's ambitious **Laser Interferometer Gravitational-Wave Observatory (LIGO)** project in **Hingoli, Maharashtra**, is facing significant implementation delays. Nearly a year after the Engineering, Procurement, and Construction (EPC) tender was floated in April 2025, the **Rs 1,600-crore** contract has yet to be finalized. Despite these roadblocks, the **Department of Atomic Energy (DAE)** maintains that the project remains on track for its **2030 completion deadline**.

What is the LIGO-India Project?

- **About:** It is India's first major gravitational-wave observatory and the **5th node** in a global network, joining facilities in the **US (Hanford and Livingston)**, **Italy (Virgo)**, and **Japan (KAGRA)**.
- **Lead Agencies:** A collaborative "mega-science" venture between the **DAE** and the **Department of Science and Technology (DST)**, in partnership with the **US LIGO Laboratory** (Caltech and MIT).
- **Location:** Situated at **Aundha Nagnath** in Hingoli district, chosen for its exceptional seismic stability and low human-made noise.
- **Technical Design:** Features two **4-km-long vacuum arms** arranged in an 'L' shape. High-precision lasers reflect off mirrors at the ends to detect minute distortions in spacetime.

Recent Developments (Early 2026)

- **Tender Status:** The financial bids for the main construction were opened on **January 23, 2026**, but the work order has not yet been awarded.
- **Infrastructure Progress:** Currently, only the **site office** has been completed. Land acquisition for the **300-acre** site is largely finished, with recent focus shifting to road construction and environmental clearances.
- **Contractor News:** In February 2026, **Larsen & Toubro (L&T)** was identified as a major contender, reportedly winning a significant order for the high-precision civil and vacuum infrastructure.

Understanding Gravitational Waves

- **Definition:** Predicted by **Einstein's General Theory of Relativity (1915)**, these are ripples in the fabric of spacetime caused by massive cosmic accelerations.
- **Key Characteristics:** * They travel at the **speed of light**.
    - They carry energy away from sources like **merging black holes** or **neutron star collisions**.
    - They are "invisible" to traditional telescopes because they do not emit light or radio waves.
- **Detection Sensitivity:** These waves are incredibly weak; LIGO must detect changes in length as small as 10^{-21} (thousands of times smaller than a proton) over a 4-km distance.

Strategic Significance for India

- **Global Hub:** Positions India as a global leader in gravitational physics and frontier astronomy.
- **Technological Spillovers:** The project drives innovation in **ultra-high vacuum technology**, **precision lasers**, and **vibration isolation** systems, which have direct applications in defense and space research.
- **Scientific Networking:** By being geographically distant from the US and European nodes, LIGO-India dramatically improves the global network's ability to **triangulate the exact source** of cosmic events.

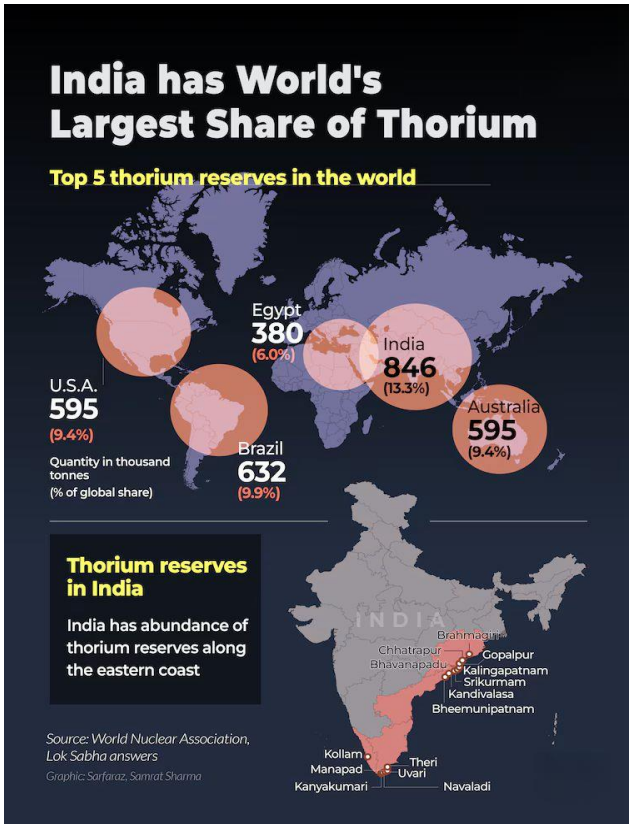
Challenges

- **Bureaucratic Hurdles:** Repeated date extensions for tenders have pushed back the

start of heavy construction, originally slated for mid-2025.

- **Technical Complexity:** Building a facility capable of measuring distortions smaller than an atom requires unprecedented engineering precision that is being attempted in India for the first time.

High-Energy Proton Accelerator System in Visakhapatnam



Why in News?

Visakhapatnam has been officially selected to host India's first **high-energy proton accelerator system**. This strategic project aims to accelerate the third stage of **India's three-stage nuclear power programme**, specifically focusing on utilizing the nation's massive **thorium reserves**. The site was chosen for its robust technological ecosystem and essential access to seawater for cooling high-energy components.

What is the High-Energy Proton Accelerator System?

- **Mechanism:** The system uses electromagnetic fields to accelerate protons (from ionized hydrogen) to near-light speeds.
- **Spallation Reaction:** The high-speed proton beam strikes a heavy metal target (like lead or bismuth), causing the nuclei to shatter and release a dense burst of **neutrons**.
- **Energy Generation:** These neutrons are used to trigger nuclear fission in a reactor core, providing a controlled and powerful energy source.

Accelerator-Driven System (ADS): The "Safety-First" Reactor

In an **ADS**, the nuclear reactor is **"sub-critical,"** meaning it cannot sustain a chain reaction on its own.

- **External Trigger:** It requires a constant supply of neutrons from the proton accelerator to keep the fission going.
- **Inherent Safety:** If the accelerator is turned off or fails, the neutron supply stops instantly, and the **nuclear reaction automatically shuts down**. This eliminates the risk of a self-sustaining "meltdown" seen in traditional reactors.

Strategic Importance for India

1. Unlocking the Thorium Vault

- **The Problem:** India holds **25% of global Thorium reserves**, but Thorium-232 is **"fertile,"** not "fissile"—it cannot split on its own to produce energy.
- **The Solution:** The ADS bombards Thorium with neutrons, transmuting it into **Uranium-233**, which is a highly efficient fissile fuel. This is the "holy grail" for India's long-term energy independence.

2. Nuclear Waste Management (Transmutation)

- **"Burning" Waste:** Traditional reactors produce long-lived radioactive waste (minor actinides) that remains toxic for millennia.
- **Cleaner Output:** The high-energy neutrons in an ADS can **transmute** this toxic waste into stable or short-lived isotopes, drastically reducing the environmental burden of nuclear energy.

Raja Ramanna Centre for Advanced Technology (RRCAT)

The project is being spearheaded by **RRCAT, Indore**, a premier unit of the **Department of Atomic Energy (DAE)**.

- **Established:** 1984; known for developing the **Indus-1 and Indus-2** synchrotron radiation sources.
- **Research Focus:** Particle accelerators, laser systems, and cryogenics.
- **Societal Impact:** Beyond energy, RRCAT technologies are used for **sterilizing medical devices** and developing affordable **metal 3D printing** for space and defense.
- **Innovation:** The **AIC-RRCAT Pi-Hub** (incubation center) currently works with startups on indigenous **MRI cooling systems** and fiber-based optical sensors.

India's 3-Stage Nuclear Power Programme: A Quick Refresher

1. **Stage 1:** Pressurized Heavy Water Reactors (PHWRs) using natural Uranium to produce electricity and **Plutonium-239**.
2. **Stage 2:** Fast Breeder Reactors (FBRs) using Plutonium-239 to produce more fuel and prepare the path for Thorium.
3. **Stage 3:** Advanced Heavy Water Reactors (AHWRs) or ADS using **Thorium-Uranium-233** cycles for near-infinite clean energy.

"No-Fault" Liability for Covid-19 Vaccine Injuries (2026)

Why in News?

The **Supreme Court (SC)** has issued a landmark directive to the **Union Government** to formulate a **"no-fault" liability compensation policy**. This policy is intended for individuals who suffered **serious adverse effects or death** following the Covid-19 vaccination drive, ensuring that victims receive financial relief without the burden of proving negligence.

Note

The ruling transitions the state's role from mere surveillance to active welfare. By invoking **Article 21** (Right to Life and Health), the SC rejected the government's stance that families should pursue individual litigation against manufacturers. Instead, it mandated a streamlined compensation mechanism, noting that since the vaccination drive was a State-led public health intervention, the State bears a **positive obligation** to support those affected by rare but grave outcomes.

Key Observations of the Supreme Court

The "No-Fault" Liability Principle

- **Definition:** Victims are entitled to compensation without having to prove **negligence or wrongdoing** by the State or vaccine manufacturers.
- **Precedent:** This principle is already used in Indian law for motor vehicle accidents and is a standard feature of vaccine injury schemes in the **UK, Japan, and Australia**.
- **Admission of Liability:** The SC clarified that providing compensation does **not** amount to a legal admission of "fault" or "error" by the government; it is a welfare-based relief.

Protection of Fundamental Rights

- **Article 14 (Equality):** The Court noted that forcing citizens into "multiplicity of legal battles" would lead to unequal access to relief. A uniform policy ensures all citizens are treated equally.
- **Article 21 (Right to Health):** The State is viewed as an "active guardian of dignity." The Court highlighted that while the drive was technically voluntary, administrative restrictions (on travel, work, etc.) made it effectively mandatory for many.

Surveillance vs. Compensation

- **AEFI Committees:** The Court held that existing **Adverse Events Following Immunization (AEFI)** committees are sufficient for medical assessment.
- **State Responsibility:** However, the responsibility of the State "cannot end at surveillance alone" and must naturally extend to providing financial redress for confirmed vaccine-linked injuries.

Previous Judicial Landmarks

Case	Outcome/Directive
Gaurav Kumar Bansal (2021)	Directed **NDMA** to fix **Rs 50,000** ex-gratia for Covid-19 deaths, payable from the State Disaster Response Fund.
Jacob Puliyel (2022)	Upheld vaccine approval and AEFI monitoring; ruled that **bodily integrity** is protected and no one can be forcefully vaccinated.

Understanding Vaccine Side Effects

The Court's ruling acknowledges the spectrum of vaccine reactions identified by global health bodies:

- **Common (Mild):** Fever, headache, and fatigue, typically resolving within 1–3 days.
- **Rare (Serious): * Myocarditis/Pericarditis:** Heart inflammation associated with mRNA vaccines, mostly in young males.
    - **Thrombosis with Thrombocytopenia (TTS):** A rare blood clotting disorder linked to certain viral vector vaccines (e.g., AstraZeneca/Covishield). In India, the incidence is estimated at a very low **0.001 per one lakh doses**.

Types of Vaccines	DNA and RNA	Live attenuated	Inactivated	Subunit	Viral vector
How it works	This vaccine uses DNA or RNA molecules to teach the immune system to target key viral proteins.	This is a weakened version of the actual virus	An inactivated vaccine uses the whole virus after it has been killed with heat or chemicals	This vaccine uses a piece of a virus' surface to focus the immune system on a single target	This approach takes a harmless virus and uses it to deliver viral genes to build immunity.
Properties	Easy and quick to design but never been done before	Stimulate a robust immune response without causing serious disease	Easy to make, safe. Not as effective as a live virus	Focuses the immune response on the most important part of the virus for protection and might need other chemicals to be added	Live virus tend to elicit stronger immune responses than dead viruses. Needs a viral vector that is truly safe
Existing Examples	None	Measles, Mumps and Rubella Chickenpox	Polio	Pertussis Hepatitis B Human papillomavirus (HPV)	Ebola Veterinary medicine
Group testing approach for COVID-19	• Moderna and Pfizer (RNA) • Inovio (DNA)	• Codagenix • Indian Immunologicals Ltd.	• Sinovac • Sinopharm • Covaxin	• Novavax • AdaptVac	• University of Oxford & AstraZeneca • CanSino Biologics • Johnson & Johnson

The Path Ahead

- **Policy Formulation:** The Union Government must now define the eligibility criteria, the compensation amount, and the timeline for disbursement.
- **Grievance Redressal:** District-level committees are expected to play a role in verifying claims based on AEFI reports.
- **Impact:** This move is expected to bolster public trust in future immunization programmes by demonstrating a "safety net" for the rare instances of medical complications.

Peptide-Based Therapies : Medical Potential and Safety Concerns

Why in News?

The global interest in **peptide-based therapies** has surged in early 2026, driven by breakthroughs in metabolic health and "biohacking" trends. While offering revolutionary opportunities for treating chronic diseases, the rise of unapproved "research peptides" sold online has prompted health experts and regulators to issue urgent warnings regarding safety and endocrine disruption.

What are Peptides?

- **Definition:** Peptides are short chains of **amino acids**, the fundamental building blocks of life.
- **Peptides vs. Proteins:** They are essentially smaller versions of proteins. While proteins consist of 50 or more amino acids folded into complex shapes, peptides typically contain between **2 and 50 amino acids**.
- **Biological Role:** In the human body, they act as critical **signaling molecules**. They function as hormones, neurotransmitters, and local regulators, instructing cells on how to manage metabolism, immune responses, and tissue repair.

Understanding Peptide Therapy

- **Mechanism:** Peptide therapy uses synthetic or naturally derived peptides that mimic the body's own signaling molecules. They work via a **"lock-and-key" mechanism**, binding to specific cell receptors to trigger targeted biological responses.
- **Administration:** Because peptides are easily broken down by digestive enzymes in the stomach, most therapies are administered via **subcutaneous injections** rather than oral tablets.

- **Precision:** Because they target specific receptors, they often have **fewer side effects** compared to conventional "broad-spectrum" drugs.

Major Clinical Applications (2026)

Peptide-based medicines are currently transforming several fields of medicine:

- **Metabolic Health (GLP-1):** The most prominent application involves **GLP-1-based drugs** (like Semaglutide), which regulate blood sugar and appetite, revolutionized the treatment of **Type 2 Diabetes and Obesity**.
- **Oncology:** Peptides are used to target tumor receptors or deliver chemotherapy drugs directly to cancer cells, improving the precision of cancer treatment.
- **Regenerative Medicine:** Ongoing research focuses on using peptides for **tissue repair** in muscles, nerves, and tendons, offering hope for sports injuries and degenerative diseases.
- **Other Areas:** Peptides are being extensively explored in **dermatology** (anti-ageing), **osteoporosis** (bone density), **cardiovascular diseases**, and the development of new **anti-viral** agents.

The Dangers of Misuse

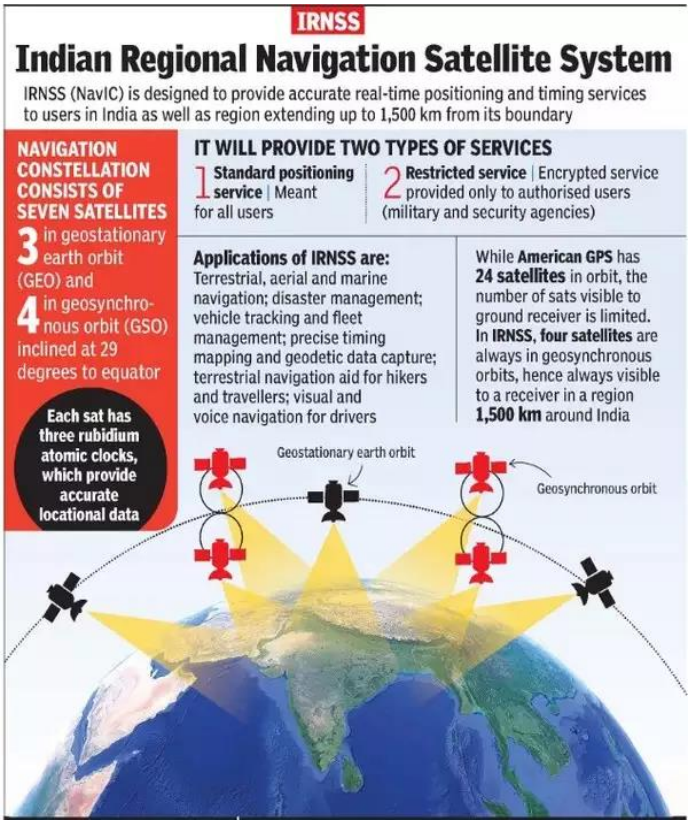
The growing "wellness" and "biohacking" culture has led to a dangerous trend:

- **Unapproved Chemicals:** Many individuals are self-injecting "research-grade" peptides purchased from unregulated online sources.
- **Lack of Testing:** These substances often lack human clinical trials, meaning their long-term safety profile is unknown.
- **Health Risks:** Misuse can lead to severe **endocrine imbalances**, metabolic disturbances, and significant **cardiovascular risks**.

Conclusion

Peptide therapy represents a frontier in precision medicine, offering targeted treatments for some of the world's most taxing chronic conditions. However, the transition from clinical application to "lifestyle enhancement" requires a robust **regulatory framework** to prevent a public health crisis driven by unregulated self-medication.

NavIC Constellation : Technical Setbacks and Future Roadmap



Why in News?

The **Indian Space Research Organisation (ISRO)** recently confirmed that the final functional **atomic clock** onboard the **IRNSS-1F** satellite stopped working on **March 13, 2026**. This follows the technical setback of the **NVS-02** satellite (launched in January 2025), which failed to reach its intended circular orbit. These combined issues have reduced the active navigation constellation to just **three functional satellites**, which is below the minimum threshold of four required for accurate 3D positioning.

Note

NavIC (Navigation with Indian Constellation) is India's independent regional navigation system. While the first-generation **IRNSS series** is nearing its end-of-life with multiple clock failures, ISRO is transitioning to the **NVS (Second Generation)** series. The new satellites feature **indigenous rubidium atomic clocks** and the **L1 band** for better smartphone integration. Despite the current orbital gaps, ISRO is fast-tracking the launches of NVS-03, 04, and 05 to restore full sovereign navigation capabilities.

Understanding NavIC (IRNSS)

- **Status:** India's indigenous alternative to the US-owned GPS.
- **Service Area:** Covers India and a region extending **1,500 km** beyond its borders.
- **Accuracy:** Standard Positioning Service (SPS) offers 5–10 meter accuracy across India.
- **Strategic Autonomy:** Born out of the **1999 Kargil War** experience, where India was denied GPS data by the US, NavIC ensures independent Positioning, Navigation, and Timing (PNT) services.

Constellation Performance: Current Status (April 2026)

To provide a position (latitude, longitude, and altitude), a system requires a minimum of **four satellites**. As of late March 2026, the status is as follows:

- **Active PNT Satellites:** Only **3 active**: IRNSS-1B, IRNSS-1I, and NVS-01.
- **Defunct/Messaging Only:** IRNSS-1A, 1C, 1D, 1E, 1F, and 1G are either retired or limited to one-way messaging due to clock failures.
- **Failed Launches: IRNSS-1H** (2017 - Heat shield failure) and **NVS-02** (2025 - Orbit raising failure).

Second Generation: The NVS Series

ISRO is launching the NVS series to replace aging satellites and introduce new features:

- **Indigenous Tech:** Features the **Indian Rubidium Atomic Clock**, developed to end dependence on imported frequency standards.
- **L1 Band Signal:** The addition of the L1 frequency (used by GPS) allows NavIC to be used in **low-power wearables** like smartwatches and standard smartphones without extra hardware.
- **Extended Life:** NVS satellites have a design life of **12 years**, compared to the 10 years of the IRNSS series.

What is an Atomic Clock?

- **Precision:** Measures time using the natural vibration frequency of atoms (typically Rubidium or Caesium).
- **Role in Navigation:** Navigation works by measuring the time a signal takes to travel from a satellite to a receiver. Even a **billionth of a second** error can lead to a significant positioning error on the ground.
- **NavIC Vulnerability:** The first-generation satellites used imported clocks that suffered multiple premature failures, a "teething issue" ISRO aims to solve with indigenous versions in the NVS series.

Strategic and Policy Milestones

- **Mandatory Usage:** Since 2019, NavIC tracking is mandatory for all **commercial vehicles** in India.
- **US Recognition:** In 2020, the US Congress designated NavIC as an **"allied navigation system,"** allowing its integration into global multi-GNSS receivers.
- **National Timing:** From 2025, NavIC serves as the reference time provider for India's **National Physical Laboratory (NPL)**, synchronizing the nation's digital infrastructure.

Conclusion

The current "blind spot" in NavIC's coverage is a temporary hurdle in India's space-based autonomy. By shifting to indigenous clocks and the L1 band, ISRO is not just replacing old satellites but building a more robust, consumer-friendly ecosystem. The successful launch of **NVS-03** (expected later in 2026) will be the critical "fourth satellite" needed to bring India's "desi GPS" back to full operational strength.

EDITORIALS

Crux of The Hindu & Indian Express

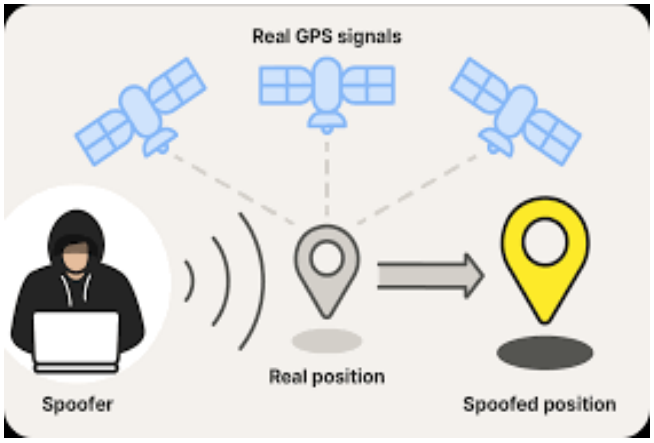
Science & Technology

GPS Spoofing – Digital Threat to Aircraft Navigation

1. Why in News?

- Recent incidents near the **United Arab Emirates (UAE)** and the **Persian Gulf** have reported cases of **GPS spoofing affecting commercial flights**.
- Due to rising **military tensions between the United States and Iran**, several aircraft have experienced **false navigation signals**, creating serious safety concerns.

2. What is GPS Spoofing?



- **GPS Spoofing** is a cyber or electronic attack in which **fake GPS signals are transmitted to deceive navigation systems**.
- In this attack:
  - Aircraft receive **false satellite signals**
  - The onboard navigation system believes the signal is **real**
  - The aircraft displays an **incorrect location or route**
- This can cause aircraft to **appear miles away from their real position**.

3. Why GPS Spoofing is Dangerous

- Unlike **GPS jamming**, which simply blocks signals, **GPS spoofing provides misleading information**.
- Major risks include:
  - Aircraft may **appear off course**
  - Pilots may think they are flying over **different territory**
  - Planes may accidentally enter **restricted or military zones**
- If pilots rely only on the **spoofed navigation data**, it could lead to **serious aviation safety risks**.

4. Example of Recent Incidents

- Reports indicate that aircraft near the **UAE border** experienced unusual navigation errors.
- Some aircraft systems showed that they were:
  - Flying over **Iranian territory**
  - Even though they were actually in **international airspace**
- Such incidents create confusion for pilots who must decide whether to trust **digital instruments or manual navigation tools**.

5. Role of Electronic Warfare

- The **Middle East region** currently has some of the most advanced **electronic warfare systems**.
- These technologies are used mainly for:
  - Disrupting **enemy drones**
  - Blocking **missile guidance systems**
  - Interfering with **military communication signals**
- However, these systems can also **affect civilian aircraft navigation**.
- For example, Iran reportedly uses systems like **Cobra V8**, which can disrupt signals up to **250 km away**.

6. Impact on Civilian Flights

Modern commercial aircraft rely heavily on the **Global Positioning System (GPS)** for:

- Navigation
- Route planning
- Precision landing
- Fuel efficiency

Because of spoofing incidents:

- **Hundreds of flights** have experienced navigation disruptions
- Airlines have been forced to **reroute aircraft**
- Flights may take **longer routes**, increasing **fuel consumption**
- Reports suggest that **over 1,000 ships and many aircraft** have experienced similar signal disruptions.

7. How Pilots Handle GPS Spoofing

- To deal with spoofing threats, pilots are trained to use **backup navigation systems**.
- These include:
  - **Ground-based radio navigation beacons**
  - **Inertial navigation systems**
  - **Manual navigation charts and maps**
- Pilots must verify whether the **GPS signal is genuine or manipulated**.

8. Technological Solutions

- Aircraft manufacturers are developing **anti-spoofing technologies**.
- These systems:
  - Check whether signals come from **real satellites**
  - Detect signals from **ground-based attackers**
- However, the problem remains a **continuous technological competition between attackers and defenders**.

9. Importance for Aviation Safety

- GPS spoofing highlights the risks of **modern digital dependence in aviation**.
- It shows that:
  - Civilian aviation can be affected by **military electronic warfare**
  - Advanced navigation systems can still be **vulnerable to cyber manipulation**
  - Human skills and backup systems remain essential for **flight safety**

Conclusion

GPS spoofing is an emerging **electronic warfare threat** that can mislead aircraft navigation systems by sending **fake GPS signals**. Recent incidents near the **UAE and Persian Gulf** show how geopolitical conflicts can disrupt **civil aviation operations**, making **pilot training, backup navigation systems and anti-spoofing technologies** crucial for ensuring **air travel safety**.

BharatNet Connects 2.15 Lakh Gram Panchayats in India

1. Why in News?

- The **Government of India** announced that the **BharatNet Programme** has connected **more than 2.15 lakh Gram Panchayats** with **broadband connectivity**.
- This initiative is part of India's effort to expand **optical fibre networks, 5G services and Digital Public Infrastructure (DPI)** to strengthen **rural digital connectivity**.

2. Expansion of Optical Fibre Network

- India has significantly expanded its **optical fibre infrastructure**.
- Key figures:
  - **19.35 lakh route km in 2019**
  - Increased to **42.36 lakh route km in 2025**
- This expansion supports **high-speed internet connectivity across the country**, including rural areas.

3. Growth of 5G Connectivity

- India's **5G network** has expanded rapidly.
- Current status:
  - **99.9% of districts covered by 5G**
  - Over **5.18 lakh Base Transceiver Stations (BTS)** installed (as of December 2025)
- This enables **faster internet and improved digital services** nationwide.

4. Public Wi-Fi Expansion under PM-WANI

- Under the **Prime Minister Wi-Fi Access Network Interface (PM-WANI)** initiative:
  - **4,09,111 public Wi-Fi hotspots** have been deployed
  - Supported by **207 PDO Aggregators**
  - Supported by **113 App Providers**

- The scheme aims to provide **affordable and high-speed internet**, especially in **rural and remote areas**.

5. Impact on Rural Development

The government highlighted that **digital connectivity in rural areas** helps:

- Improve **access to government schemes**
- Support **rural livelihoods**
- Connect citizens to **digital markets**
- Promote **digital literacy**

It also helps deliver services like:

- **e-Health**
- **e-Education**
- **e-Governance**

6. Growth of India's Data Centres and Cloud Infrastructure

- India's **data centre capacity** is expanding rapidly.
- Current capacity:
  - Around **1,280 Megawatts**
- Expected growth:
  - Likely to increase **4–5 times by 2030**
- This expansion supports **digital governance, Artificial Intelligence (AI), and cloud services**.

7. Government Cloud Platform – MeghRaj (GI Cloud)

- The **MeghRaj Cloud Platform** enables government departments to host digital services.
- Key figures:
  - More than **2,170 ministries and departments** use the platform
- This ensures:
  - **Secure data storage**
  - **Scalable government applications**
  - **Efficient digital governance**

8. Falling Cost of Mobile Data in India

- India has become one of the **cheapest data markets in the world**.
- Price trend:
  - **₹269 per GB in 2014**
  - Reduced to **₹8–10 per GB in 2025–26**
- As a result, **broadband subscriptions crossed 100 crore in November 2025**, compared to **13.15 crore a decade ago**.

9. National Supercomputing Mission

Under the **National Supercomputing Mission**:

- **38 supercomputers** have been installed across India
- Combined computing capacity: **44 Petaflops**

These systems support research in:

- **Artificial Intelligence**
- **Climate modelling**
- **Biotechnology**
- **Advanced manufacturing**

10. Role of Digital Public Infrastructure (DPI)

India's digital ecosystem is supported by major platforms such as:

- **Aadhaar**
- **UPI**
- **DigiLocker**

These systems enable:

- **Financial inclusion**
- **Secure digital transactions**
- **Efficient delivery of government services**

11. About the BharatNet Project

- **BharatNet** is a flagship programme of the **Government of India** aimed at providing **broadband connectivity to all Gram Panchayats**.

Main Objective

- Provide **high-speed broadband access** to telecom service providers so they can deliver services in **rural and remote areas**.

These services include:

- **e-Health**
- **e-Education**
- **e-Governance**
- **Digital financial services**

12. Phases of the BharatNet Project

Phase I

- Connected **1 lakh Gram Panchayats**
- Used existing **optical fibre infrastructure**
- Completed in **December 2017**

Phase II (Ongoing)

- Extends connectivity to **1.5 lakh additional Gram Panchayats**
- Uses **optical fibre, radio and satellite technologies**

Phase III (Ongoing)

- Focuses on **future-proofing the network**
- Integration of **5G technology**

- Increased **bandwidth capacity**
- Improved **last-mile connectivity**

13. Funding and Implementation

- The **BharatNet project** is funded through the **Digital Bharat Nidhi (DBN)**.
- DBN replaced the earlier **Universal Service Obligation Fund (USOF)**.
- Implementation is carried out by:
- **Bharat Broadband Network Limited (BBNL)**, a **Special Purpose Vehicle (SPV)** of the Government of India.

Conclusion

The **BharatNet programme** is transforming **rural digital connectivity** by linking **over 2.15 lakh Gram Panchayats with broadband internet**. Combined with **5G expansion, public Wi-Fi, data centres and Digital Public Infrastructure**, it is helping bridge the **digital divide between urban and rural India**, supporting the vision of a **digitally empowered and inclusive economy**.

Update on National Leprosy Eradication Programme (NLEP)

Why this news?

- The Government shared an update in **Rajya Sabha** about steps taken to control **Leprosy** in India.
- The government is strengthening the **National Leprosy Eradication Programme** to detect cases early, provide treatment and reduce stigma.

1. What is NLEP?

- **National Leprosy Eradication Programme (NLEP)** is a **centrally sponsored scheme**.
- It works under the **National Health Mission**.
- The aim is to **detect leprosy early, treat patients and eliminate the disease in India**.
- Funds are given to **States and Union Territories** based on their **Programme Implementation Plans (PIPs)**.

2. About Leprosy

- **Leprosy** is a **long-term infectious disease** caused by bacteria.
- It mainly affects:
  - Skin
  - Nerves
  - Eyes

Important features

- The disease develops **very slowly**.
- **Incubation period:** about **5–20 years** (time between infection and symptoms).

Situation in India

- India reports **more than 1 lakh new cases every year**.
- The country still has a **large share of global leprosy cases**.

Reasons why cases are still detected

1. Long incubation period
2. Continued transmission in some high-burden areas
3. Better surveillance and detection programmes
4. Increased awareness and reporting of cases

3. Major Government Initiatives under NLEP

1. Leprosy Case Detection Campaign (LCDC)

- **Door-to-door surveys** in villages and cities.
- Conducted in **high-burden districts**.
- Goal: **Identify patients early and start treatment quickly**.

2. Focused Leprosy Campaign (FLC)

- Conducted when a **serious case with Grade-2 disability (G2D)** is found.
- Health workers search:
  - **300 nearby households in urban areas**, or
  - **Entire village in rural areas**.
- Aim: **Find hidden cases around the patient**.

3. Special Case Search in Difficult Areas

- Special programmes for **remote and hard-to-reach regions**.
- Community participation is used to provide services.

4. ASHA-Based Surveillance (ABSULS)

- **ASHA programme** workers help detect suspected cases.
- Used in districts where LCDC is not conducted.
- Now integrated into **routine health activities**.

5. Sparsh Leprosy Awareness Campaign (SLAC)

- Nationwide awareness campaign.

Key points

- Started in **2017** on **Anti Leprosy Day** (30 January).
- Conducted up to **village level**.
- Goal:
    - Spread awareness
    - Reduce **social stigma and discrimination** against patients.

4. Strengthening Health Services

Leprosy treatment is now integrated into the **general health system** through:

- **Ayushman Arogya Mandir**
- Sub-Centres
- Primary Health Centres (PHCs)
- Community Health Centres (CHCs)
- District hospitals
- Tertiary care hospitals

This makes treatment **easier and more accessible**.

5. Training of Health Workers

The government regularly trains:

- Doctors
- ASHA workers
- ANMs
- Other frontline health staff

Purpose:

- Early identification of symptoms
- Proper referral
- Quick treatment

6. Contact Tracing and Prevention

- Family members and close contacts of patients are checked.
- Preventive medicine called **Post Exposure Prophylaxis (PEP)** is given to eligible contacts.
- This helps **stop further transmission**.

7. Rehabilitation and Disability Support

Under NLEP, patients also receive **Disability Prevention and Medical Rehabilitation (DPMR)** services.

These include:

- Treatment for reactions and complications
- Training for self-care
- Assistive devices
- **Micro-Cellular Rubber (MCR) footwear** to protect insensitive feet
- **Reconstructive surgery** for severe cases

8. Data Monitoring

- State-wise and district-wise data is available on the **Directorate General of Health Services** website.
- This helps the government monitor progress.

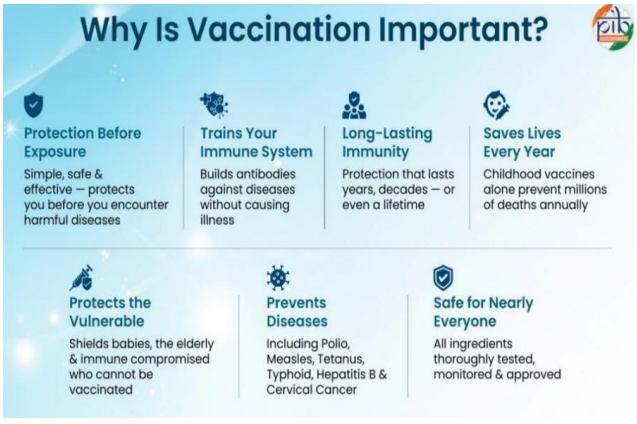
9. Overall Objective

India's strategy focuses on three major goals:

1. **Early detection of cases**
2. **Timely treatment for patients**
3. **Reducing stigma and discrimination**

Together, these steps aim to **eliminate leprosy as a public health problem in India**.

National Vaccination Day 2026 : Milestones in India's Immunisation Journey



Why in News?

India celebrated **National Vaccination Day** on **March 16, 2026**, marking several historic achievements in public health. By January 2026, the country reached a record **98.4% full immunisation coverage**. Significant milestones in early 2026 include the launch of the

nationwide HPV vaccination drive to combat cervical cancer and the introduction of a domestically manufactured **Td (Tetanus-diphtheria) vaccine**.

Note

National Vaccination Day commemorates the start of the **Pulse Polio Programme** in 1995. Since then, India's **Universal Immunisation Programme (UIP)** has evolved into one of the world's largest health initiatives, providing free vaccines against **12 life-threatening diseases**. With the recent integration of the **U-WIN digital platform** and a focus on "zero-dose" children (which dropped to **0.06% in 2024**), India is positioning itself as a global leader in vaccine self-reliance and distribution.

The Universal Immunisation Programme (UIP)

- **Evolution:** Launched as the Expanded Programme on Immunization (1978), it became **UIP in 1985**. Since 2005, it has been a core component of the **National Health Mission (NHM)**.
- **Scale:** Reaches approximately **2.54 crore newborns** and **2.9 crore pregnant women** annually.
- **12 Preventable Diseases:** Includes Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, childhood Tuberculosis, Hepatitis B, Meningitis & Pneumonia (Hib), Rotavirus, and Pneumococcal Pneumonia. **Japanese Encephalitis (JE)** is covered in endemic districts.

#	Disease	Disease Description
1	Tuberculosis (severe childhood form)	Bacterial infection affecting the lungs; can spread to the brain and multiple organs
2	Diphtheria	Bacterial infection affecting the throat; can damage the heart and nerves
3	Pertussis (Whooping Cough)	Highly contagious cough illness, dangerous for infants
4	Tetanus	Bacterial infection from contaminated wounds causing muscle stiffness
5	Polio	Viral infection attacking the nervous system; can cause permanent paralysis or death
6	Measles	Highly contagious viral disease, causes fever and rash
7	Rubella	Mild viral illness with fever & rash; spreads through coughing and sneezing
8	Hepatitis B	Viral infection of the liver that can become chronic and cause liver damage
9	Meningitis & Pneumonia (Hib)	Meningitis — infection and inflammation of the membranes surrounding the brain and spinal cord
10	Rotavirus Diarrhoea	Viral infection causing severe diarrhoea in infants
11	Pneumococcal Pneumonia	Bacterial lung infection causing fever and breathing difficulty
12	Japanese Encephalitis	Mosquito-borne viral disease-causing brain inflammation

Landmark Launches in 2026

1. Nationwide HPV Vaccination (February 28, 2026)

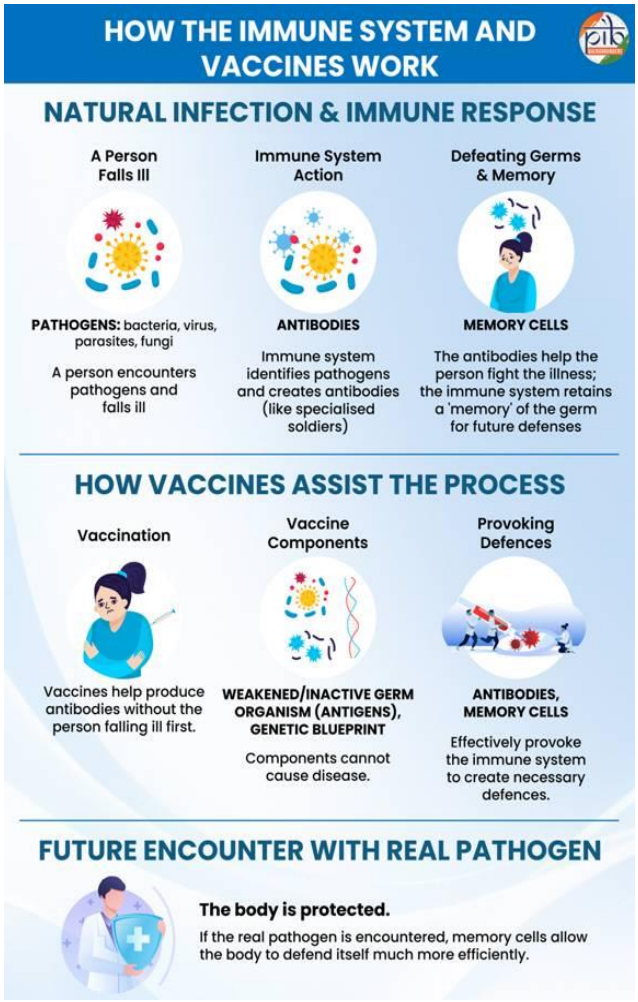
- **The Launch:** Prime Minister Narendra Modi launched the campaign from **Ajmer, Rajasthan**, targeting **1.15 crore girls aged 14**.
- **The Goal:** To prevent **cervical cancer**, the second most common cancer among Indian women.
- **The Vaccine:** Uses the quadrivalent **Gardasil-4** vaccine, provided **free of cost** at government facilities (saving families approx. **₹4,000 per dose** in private costs).

2. Indigenous Td Vaccine (February 21, 2026)

- **The Launch:** Introduced at the **Central Research Institute (CRI), Kasauli**, Himachal Pradesh.
- **The Purpose:** Replaces the TT (Tetanus Toxoid) vaccine to provide combined protection against both **Tetanus and Diphtheria** for adolescents and adults.
- **Supply:** CRI Kasauli is slated to supply **55 lakh doses** to the UIP by April 2026.

Digital & Cold Chain Infrastructure

- **U-WIN Platform (2024):** A citizen-centric portal that digitises all vaccination records, allowing for self-registration, appointment booking, and automated SMS reminders. It effectively eliminates the need for physical vaccination cards.
- **eVIN (Electronic Vaccine Intelligence Network):** Provides real-time tracking of vaccine stocks and storage temperatures across **1.06 lakh cold chain points**.
- **Mission Indradhanush:** This "catch-up" campaign has been the primary driver in raising coverage from **62% (2015)** to the current **98.4%**.



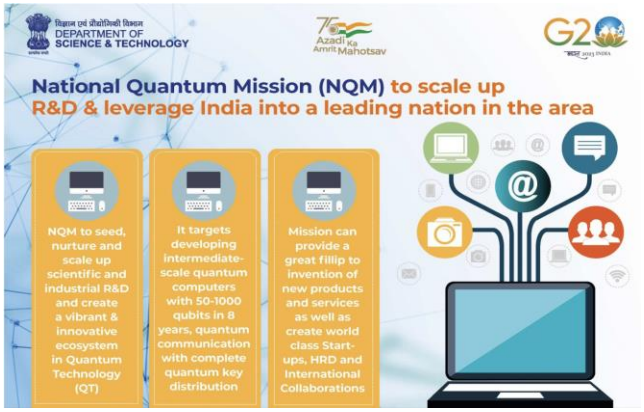
India's Global Leadership

- **Vaccine Manufacturer:** India produces **60% of the world's vaccines** and ranks 3rd globally in pharmaceutical production by volume.
- **Vaccine Maitri:** During the pandemic, India supplied over **29.8 crore doses** to nearly 100 countries.
- **Self-Reliance: PLI Schemes** for Bulk Drugs and Pharmaceuticals are further strengthening the domestic ecosystem to reduce reliance on imported raw materials.

Conclusion

India's vaccination journey—from the eradication of smallpox and polio to the current battle against cervical cancer—reflects a robust commitment to **health security**. By leveraging digital tools like **U-WIN** and indigenous manufacturing, the country is ensuring that "no child is left behind," moving steadily toward the goal of a **Viksit Bharat** with a healthy, disease-resilient population.

National Quantum Mission (NQM) : Building India's Quantum Future



Why in News?

In early **2026**, the **Department of Science and Technology (DST)** achieved a major milestone under the **National Quantum Mission (NQM)** by approving **23 academic institutions** to establish state-of-the-art **Quantum Teaching Laboratories**. With over **100 additional proposals** currently under evaluation, the government is rapidly scaling the human resource pipeline required to operate India's future quantum infrastructure.

Note

The National Quantum Mission is a flagship initiative with a total outlay of **Rs 6,003 crore** (2023–2031). It aims to transition India from a consumer to a pioneer of quantum technologies. By adopting a **Hub-and-Spoke model**, the mission is developing indigenous quantum computers, secure satellite-based communication, and high-precision sensors. The current focus on teaching labs ensures that the next generation of Indian scientists is "quantum-ready" for strategic applications in defense, finance, and drug discovery.

Four Key Domains of the Mission

The NQM is structured around four specialized pillars to ensure comprehensive technological sovereignty:

- **Quantum Computing:** Developing intermediate-scale quantum computers with **50 to 1,000 physical qubits** within an 8-year timeframe.
- **Quantum Communication:** Establishing **satellite-based secure communication** over a range of **2,000 km** within India, alongside long-distance inter-city **Quantum Key Distribution (QKD)**.

- **Quantum Sensing & Metrology:** Creating high-sensitivity magnetometers for mineral exploration and **precision atomic clocks** to enhance the accuracy of navigation systems like NavIC.
- **Quantum Materials & Devices:** Strengthening indigenous fabrication capabilities for the specialized materials needed to build quantum hardware.

Implementation: The Hub-and-Spoke Model

The mission is executed through **4 Thematic Hubs (T-Hubs)** hosted at premier Indian institutions (such as IITs and IISERs). These hubs act as central nodes for research, while the newly approved teaching labs at various universities serve as "spokes" to democratize quantum education across the country.

Strategic Significance

- **National Security:** Quantum-encrypted communication is virtually unhackable, providing a vital shield for India's military and financial data.
- **Economic Growth:** Quantum simulations can drastically reduce the time and cost for developing new medicines and high-efficiency industrial materials.
- **Global Standing:** India is among a select group of nations (including the US, China, and France) with a dedicated, well-funded national quantum roadmap.

Integration with National Goals

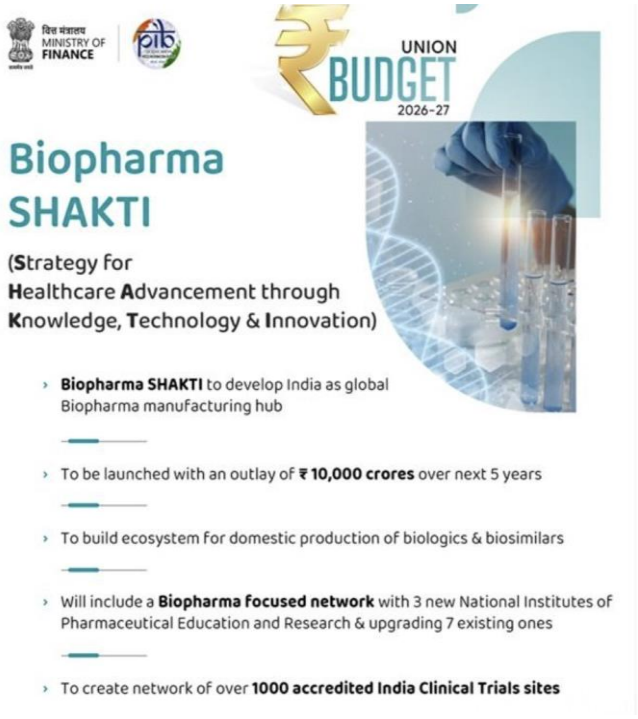
The NQM is tightly integrated with other major missions:

- **Digital India:** Providing the computational backbone for future data processing.
- **Make in India:** Promoting the domestic manufacturing of quantum-grade chips and sensors.
- **Skill India:** Training a specialized workforce through the newly established university labs.

Conclusion

The National Quantum Mission is not just a scientific project but a strategic necessity for the **Viksit Bharat @2047** vision. By seeding a robust R&D ecosystem and investing in grassroots education through teaching labs, India is ensuring it remains at the forefront of the "Second Quantum Revolution," where the ability to manipulate atoms will define global economic and military power.

Biopharma SHAKTI : India's Leap into Biologics and Non-Animal Testing (2026)



Why in News?

The **Union Budget 2026-27** has officially launched the **Biopharma SHAKTI** (Strategy for Healthcare Advancement through Knowledge, Technology, and Innovation) scheme. This flagship initiative marks a paradigm shift in India's pharmaceutical strategy—moving from "volume-based generics" to "value-based biologics." A standout feature of the scheme is its push to replace traditional animal testing with advanced **Non-Animal Methodologies (NAMs)**, such as organoids and organ-on-a-chip technologies.

Note

With a financial outlay of **10,000 crore** over five years, Biopharma SHAKTI aims to transform India into a global hub for high-value biologics and biosimilars. The scheme targets the rising burden of **Non-Communicable Diseases (NCDs)**, which currently cause **63%** of deaths in India. By integrating human-relevant testing technologies (NAMs), the government seeks to improve drug safety, reduce R&D costs by up to 26%, and capture **5% of the global pharmaceutical market** share by 2030.

Key Features of Biopharma SHAKTI

- **Strategic Shift:** Transitioning from "small-molecule" chemical drugs (generics) to complex "large-molecule" therapies (biologics/biosimilars).
- **Disease Focus:** Prioritizing affordable domestic production of treatments for **cancer, diabetes, and autoimmune disorders**.
- **Institutional Strengthening:**
    - Establishing **3 new NIPERs** and upgrading 7 existing ones into Centers of Excellence.
    - Creating a national network of over **1,000 accredited clinical trial sites**.
- **Regulatory Modernization:** Setting up a dedicated **"Scientific Review Cadre"** within the **CDSCO** to fast-track approvals in line with global standards.
- **Manufacturing Innovation:** Providing incentives for adopting **3D bioprinting** and **In Silico** (AI) models to bypass animal testing.

India's Pharmaceutical Landscape (2025-26)

- **Global Standing:** India is the **3rd largest producer by volume** and the primary supplier of global DPT, BCG, and measles vaccines.
- **Economic Scale:** According to the **Economic Survey 2025-26**, the sector's turnover reached **4.72 lakh crore** in FY25, maintaining a 7% export growth rate.
- **Med-Tech Expansion:** India now exports advanced medical devices like **MRI scanners and cardiac stents** to 187 countries.

Biologics vs. Biosimilars: A Comparison

Feature	Biologics (Innovators)	Biosimilars (Follow-on)
Production	Derived from **living systems** (cells/yeast).	Highly similar version of a reference biologic.
Complexity	200 to 1,000 times larger than chemical drugs.	Complex 3D structure; impossible to make an "identical" copy.
Cost	Extremely expensive due to R&D.	**30-70% cheaper** than the original biologic.
Examples	Insulin, Monoclonal Antibodies (mAbs).	"Similar" versions used for affordable cancer care.

Non-Animal Methodologies (NAMs): The New Frontier

NAMs represent a suite of technologies that use human-relevant data instead of animal models to predict drug safety.

- **Organ-on-a-Chip (OoC):** Microchips lined with human cells that simulate organ functions (e.g., a "breathing" lung chip).
- **Organoids:** 3D "mini-organs" grown from human stem cells that replicate a patient's specific genetic profile.
- **3D Bioprinting:** Layer-by-layer printing of human tissue using "bio-inks" to test drug penetration in tumors.
- **In Silico Models:** Advanced **AI simulations** that predict molecular interactions based on massive biological datasets.

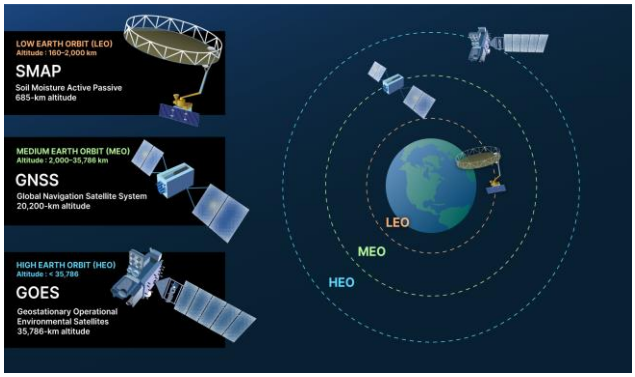
Advantages of the NAMs Approach

1. **Higher Accuracy:** Human-based models avoid "species-translation" errors (where a drug safe in animals proves toxic in humans).
2. **Cost & Time Efficiency:** Can reduce drug development costs by **10-26%** and shorten the identification of viable drug candidates by nearly 20%.
3. **Precision Medicine:** Allows doctors to test multiple drugs on a patient's own **organoid** before starting actual treatment.
4. **Legal Recognition:** India's **New Drugs and Clinical Trials (Amendment) Rules 2023** already recognize NAMs as valid alternatives to animal data.

Conclusion

Biopharma SHAKTI is more than a subsidy scheme; it is a vision for **"Bio-Aatmanirbharta."** By pivoting to biologics and NAMs, India is addressing both the health crisis of NCDs and the economic challenge of high-cost patented drugs. In 2026, this mission positions the Indian biotech industry to move up the value chain—from being the "Pharmacy of the World" for generics to becoming its **"Innovation Hub"** for the next generation of life-saving therapies.

AssamSAT : India's First State-Led Satellite Initiative (2026)



Why in News?

In **March 2026**, **Assam** became the first Indian state to float a tender for its own group of earth-observation satellites, collectively named **AssamSAT**. The project, spearheaded by the **Assam Science Technology and Environment Council (ASTEC)**, aims to provide the state with direct, real-time data for disaster management and border security, moving away from its total reliance on centralized national agencies.

Note

The **AssamSAT** initiative, announced in the **2025-26 State Budget**, seeks to deploy a constellation of at least **5 satellites** in **Low-Earth Orbit (LEO)**. These satellites are expected to be equipped with **Synthetic Aperture Radar (SAR)** to ensure all-weather monitoring of the flood-prone Brahmaputra valley and the sensitive **Siliguri Corridor** ("Chicken's Neck"). The mission follows a **Design-Build-Launch-Operate-Transfer (DBLOT)** model, inviting private aerospace companies to partner with the state.

Technological Specifications: The SAR Advantage

- **The Challenge:** Assam experiences heavy cloud cover for nearly six months of the year, making traditional optical imaging satellites ineffective for much of the monsoon season.
- **The Solution (SAR):** Unlike optical sensors, **Synthetic Aperture Radar (SAR)** can "pierce" through clouds, fog, and even total darkness by using microwave pulses to map the ground.
- **Constellation Benefit:** By deploying a group of 5 satellites, the state can achieve a **high revisit frequency**, scanning the same area every few hours—a critical requirement during rapidly changing flood events.

Objectives and Strategic Roles

- **Disaster Response:** Real-time mapping of the **Brahmaputra floodplains** to provide early warnings and coordinate rescue operations.
- **Border Security:** Constant surveillance of the state's international borders and riverine islands (**chars**), which are difficult to fence traditionally.
- **Law Enforcement:** Tracking illegal **drug trafficking routes** and monitoring wildlife **poaching** in Kaziranga National Park.
- **Resource Management:** Supporting precision agriculture, forest cover monitoring, and urban infrastructure planning.

Current Mechanism vs. AssamSAT

- **Current State:** State agencies currently submit requests to the **National Remote Sensing Centre (NRSC)**. The process of request, approval, and data delivery can lead to delays during emergencies.
- **Future (AssamSAT):** Direct access to a dedicated constellation will provide **near real-time imagery** (low latency), allowing state authorities to react within minutes of a detected change on the ground.

Understanding Low Earth Orbit (LEO)

LEO is the preferred orbit for high-resolution imaging due to its proximity to Earth.

Characteristic	Detail
Altitude	160 km to 2,000 km above the surface.
Orbital Speed	Approximately 7.8 km/s (28,000 km/h) to counter gravity.
Orbital Period	90 to 120 minutes per revolution (14-16 times a day).
Imaging Quality	High-resolution due to short distance from the target.
Latency	Very low, making it ideal for real-time surveillance and internet (e.g., Starlink).

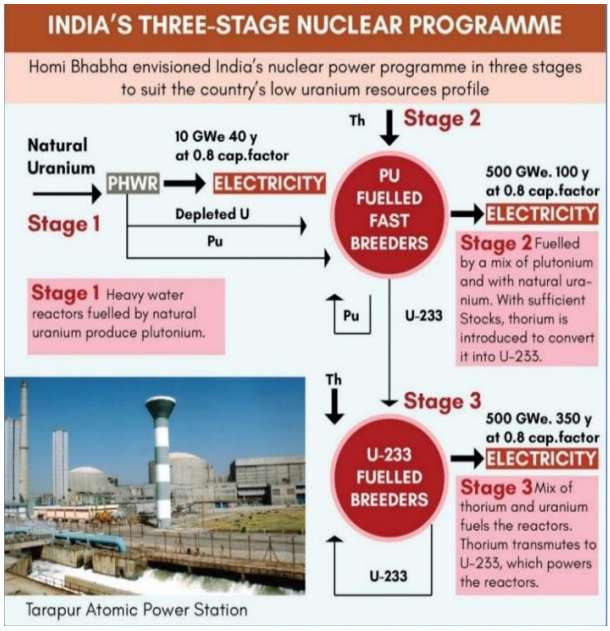
Common LEO Use Cases

Use Case	Examples
Human Spaceflight	International Space Station (ISS) at ~400 km.
Remote Sensing	**AssamSAT**, Cartosat, and environmental monitoring.
Scientific Research	Hubble Space Telescope.
Communication	Starlink (SpaceX) and OneWeb constellations.

Conclusion

AssamSAT marks a pioneering step toward "Decentralized Space Governance" in India. By commissioning its own satellites in 2026, Assam is treating space technology as a utility rather than a luxury. This move not only strengthens the state's disaster resilience but also sets a precedent for other states to invest in niche, localized space infrastructure to solve regional challenges.

HALEU-Thorium (HALEU-Th) Fuel : BARC Study and Future Outlook (2026)



Why in News?

A recent study by researchers at the **Bhabha Atomic Research Centre (BARC)**, published in the journal *Current Science* (January-March 2026), has raised critical safety concerns regarding the use of **HALEU-Thorium (HALEU-Th)** fuel in India's existing nuclear reactors. While the fuel is seen as a potential "short-cut" to utilizing India's vast thorium reserves, the study warns that it could compromise the effectiveness of reactor safety systems.

Note

HALEU-Th is a hybrid fuel that combines **High-Assay Low-Enriched Uranium (HALEU)** with **Thorium**. While it offers higher energy output and 85% less radioactive waste, the BARC study highlights that it reduces the efficiency of **shutdown rods** (safety mechanisms), making it impractical for use in current **Pressurised Heavy Water Reactors (PHWRs)** without major design overhauls. This debate comes at a time when India is opening its nuclear sector to private participation through the landmark **SHANTI Act, 2025**.

What is HALEU-Thorium (HALEU-Th) Fuel?

- **Composition:** A mix of thorium and uranium enriched between **5% and 20%** (HALEU). Standard reactor fuel (LEU) is typically enriched to less than 5%.
- **The "Driver" Mechanism:** Thorium is **fertile** (not fissile on its own). The U-235 in HALEU acts as the "driver" to initiate a chain reaction, which eventually converts thorium into fissile **Uranium-233**.
- **ANEEL Fuel:** A specific commercial version of this fuel, known as **Advanced Nuclear Energy for Enriched Life (ANEEL)**, has been developed by the US-based firm *Clean Core Thorium Energy (CCTE)* and is being explored for use in India by **NTPC**.

Key Findings of the BARC Study (2026)

- **Energy Potential:** Simulation results confirm that HALEU-Th provides a **higher burn-up** (energy extracted per unit of fuel), potentially dropping electricity costs by 20-30%.
- **Waste Reduction:** It generates significantly less spent fuel—only about **14%** of the waste produced by conventional natural uranium fuel.
- **The Critical Concern:** The study found that HALEU-Th alters the reactor's physics such that **shutdown rods** lose their effectiveness in quickly stopping the nuclear reaction during an emergency.
- **Design Barrier:** Using this fuel would require "significant design modifications" to existing PHWRs, challenging the "drop-in" replacement claims made by some developers.

The Policy Push: The SHANTI Act, 2025

The **Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act**, passed in December 2025, has redefined India's nuclear landscape:

- **Private Participation:** For the first time, private and foreign entities can hold up to **49% equity** in civilian nuclear projects.
- **Regulatory Autonomy:** Grants statutory status to the **Atomic Energy Regulatory Board (AERB)**, ensuring its independence in safety oversight.
- **Modernized Governance:** Repeals the Atomic Energy Act, 1962, and the CLND Act, 2010, consolidating nuclear laws into a single, market-aligned framework.

India's Three-Stage Nuclear Programme

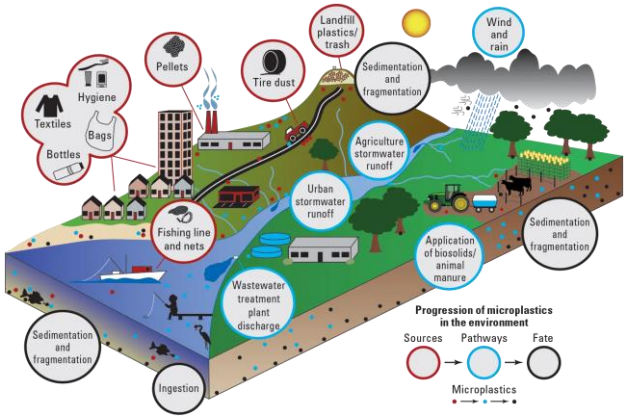
Stage	Reactor Type	Fuel Used
Stage 1	**PHWRs**	Natural Uranium (U-238)
Stage 2	**Fast Breeder Reactors (FBRs)**	Plutonium-239 (from Stage 1)
Stage 3	**Thorium-Based Reactors**	**Thorium-232** + Uranium-233 (from Stage 2)

- **The HALEU-Th Debate:** Advocates argue it allows India to use thorium **now** (Stage 1.5) without waiting decades for large-scale Stage 2 FBRs. Critics (and the BARC study) suggest it deviates from India's traditional **Closed Fuel Cycle** and presents unaddressed safety risks.

Conclusion

The BARC study serves as a scientific "caution flag" in India's race toward its **100 GWe nuclear target by 2047**. While technologies like **ANEEL** and HALEU-Th offer a tempting path to energy independence using domestic thorium, the technical hurdles regarding reactor safety cannot be overlooked. In the era of the **SHANTI Act**, the challenge for Indian scientists will be to harmonize these innovative "drop-in" fuels with the rigorous safety standards required for a massive nuclear expansion.

Microplastics : Ecological Risks and Regulatory Frameworks (2026)



Why in News?

A recent study in **early 2026** focusing on Chennai's coastal sediments revealed that while the total numerical abundance of microplastics is lower than the global average, the high concentration of **nylon fibers** poses a severe ecological threat. Researchers argue that traditional monitoring, which only counts particles, is insufficient; instead, the **polymer type, shape, and aging characteristics** must be prioritized to assess the actual risk to the "Plastisphere."

Note

Microplastics are a growing biogeochemical emergency, acting as a "Trojan Horse" for **Antimicrobial Resistance (AMR)** and toxic chemicals. India has significantly tightened its regulatory grip through the **Plastic Waste Management Rules of 2024 and 2025**, introducing **QR-based tracking** and mandatory **recycled content targets (EPR 2.0)**. However, the persistence of synthetic microfibers and tire wear remains a critical challenge, necessitating the inclusion of microplastic standards in national air and water quality indices.

What are Microplastics?

- **Definition:** Tiny plastic particles less than **5 mm** in size. Particles smaller than **1 micrometer** are termed **nanoplastics**, which are particularly dangerous as they can cross the blood-brain and placental barriers.
- **Primary Microplastics:** Intentionally manufactured at small scales, such as **microbeads** in cosmetics or **nurdles** (industrial pellets).
- **Secondary Microplastics:** Formed through the environmental breakdown of larger items

like bottles, fishing nets, and synthetic clothes via **photodegradation** or mechanical wear.

Initiatives to Tackle the Menace (2026)

Global Efforts

- **UN Global Plastics Treaty:** Ongoing negotiations for a legally binding instrument covering the full plastic life cycle.
- **IMO Marine Litter Strategy (2026 Draft):** Proposed mandatory codes for the transport of **nurdles** to prevent catastrophic spills during shipping.
- **EU Restrictions:** A phased ban on "intentionally added" microplastics in detergents and artificial turf.

India's Regulatory Push

- **PWM Rules 2024:** Formally defined microplastics (1 to 1,000 microns). Biodegradable plastics must now prove **zero microplastic residue** for CPCB certification.
- **PWM Rules 2025:** Mandatory **QR/barcodes** on all plastic packaging for real-time digital tracking.
- **EPR 2.0 (FY 2026–27):** Producers must ensure **40% recycled content** in Rigid Plastics (Category I) or face "Environmental Compensation" penalties.
- **NPPRC 2025:** A national campaign targeting **Gram Panchayats** to stop the degradation of agricultural plastics into soil.

Key Challenges and Biological Impact

- **Biomagnification:** Microplastics absorb **Persistent Organic Pollutants (POPs)** like DDT. As apex predators (including humans) consume contaminated prey, these toxins concentrate, causing hormonal disruption (via BPA and Phthalates).
- **Antimicrobial Resistance (AMR):** The "Plastisphere" (biofilm on plastic) allows bacteria to exchange **resistance genes** faster than in open water, creating hotspots for superbugs in wastewater.
- **Economic Cost:** Plastic pollution causes an estimated **USD 75 billion** in annual damage, threatening the "Blue Economy" through contaminated salt pans and commercial fisheries.
- **Remediation Difficulty:** Unlike large debris, microplastics cannot be removed from oceans without destroying the **plankton** that forms the base of the food web.

Strategic Comparison: Primary vs. Secondary Microplastics

Feature	Primary Microplastics	Secondary Microplastics
Source	Cosmetics, Nurdles, Abrasives.	Tires, Textiles, Weathered Waste.
Regulation	Targeted bans (Cosmetics).	Difficult; requires structural shifts.
2026 Status	Decreasing due to manufacturing bans.	**Increasing** due to legacy waste.

The Path Forward: Needed Measures

1. **At-Source Intervention:** Mandating "Euro 7" style standards for **tire wear** and incentivizing clothing brands to use at least **80% natural fibers** (cotton/hemp) to reduce synthetic shedding.
2. **Infrastructure Upgrade:** Installing **Tertiary Treatment** (Membrane Bioreactors) in urban sewage plants, which can filter out **99% of microplastics**.
3. **Standardization:** Adding "Microplastic Concentration" to the **National Ambient Air Quality Standards (NAAQS)** and **BIS** drinking water norms.
4. **Green Chemistry:** Funding startups that develop seaweed or starch-based polymers that **completely mineralize** in natural soil/water.
5. **Brand Accountability:** Holding "fast-fashion" companies financially liable for the microplastic footprint of their synthetic garments, similar to the EPR rules for packaging.

Conclusion

The global microplastic crisis has shifted from a "litter problem" to a **public health emergency**. In 2026, India's strategy is moving beyond simple bans toward a **circular economy** supported by digital tracking (QR codes) and strict recycled content mandates. To truly curb the menace, the focus must now expand from the ocean surface to the **upstream sources**—the tires on our roads and the fibers in our clothes.

❐❐❐

Ecology & Environment

Project Cheetah : The Third Wave from Botswana to Kuno

Why in News?

In **late February 2026**, India's cheetah reintroduction program reached a historic milestone with the arrival of **nine cheetahs from Botswana** at **Kuno National Park**, Madhya Pradesh. This is the first intercontinental translocation from Botswana, which holds the world's second-largest cheetah population. These new arrivals are considered "vanguard" animals because they are uniquely adapted to living in human-dominated landscapes, which is critical for the next phase of the project's success.

1. Current Population Status (March 2026)

- **Total Count:** With the nine Botswana cheetahs, India's total population has risen to **48 individuals**.
- **Success Indicator:** This figure includes **29 Indian-born cubs**, proving that the translocated cheetahs have successfully adapted to the local prey base and climate for breeding.
- **Translocation History:**
    - **September 2022:** 8 Cheetahs from **Namibia**.
    - **February 2023:** 12 Cheetahs from **South Africa**.
    - **February 2026:** 9 Cheetahs from **Botswana**.

2. Strategic Significance of Botswana Cheetahs

- **Global Hub:** Botswana hosts approximately **24%** of the world's 7,100 cheetahs.
- **Co-existence Specialists:** Unlike those in South Africa, **76.9%** of Botswana's cheetahs live outside protected fences on commercial and community farmlands.
- **Human-Wildlife Conflict:** These cheetahs are "pre-adapted" to sharing landscapes with livestock and humans, making them the ideal candidates for the eventual release into the open, non-fenced corridors of the **Kuno-Palpur** landscape.

3. Project Cheetah Framework

- **Objective:** Launched in **2022** under the umbrella of **Project Tiger**, it seeks to restore the only large carnivore that went extinct in India (declared extinct in 1952).
- **Implementing Agency:** The **National Tiger Conservation Authority (NTCA)**, supported by the **Wildlife Institute of India (WII)**.
- **Expanded Landscape:** * **Kuno National Park:** The primary site.
    - **Gandhi Sagar Wildlife Sanctuary:** Recently prepared as the second home for cheetahs to prevent over-crowding at Kuno.
    - **Nauradehi Wildlife Sanctuary:** Identified for future expansion to create a meta-population.

4. Community and Grassroots Support

- **Cheetah Mitras:** Over **350 local volunteers** known as 'Cheetah Mitras' (Friends of the Cheetah) work in surrounding villages.
- **Awareness:** Their role is to sensitize local communities, dispel myths about cheetahs being man-eaters (which they are not), and report sightings to the forest department to minimize conflict.

Conclusion:

The 2026 induction of Botswana cheetahs marks a transition from "survival" to "stabilization" for Project Cheetah. By introducing animals that are genetically diverse and behaviorally adapted to open landscapes, India is laying the groundwork for a self-sustaining population. The high survival rate of the Indian-born cubs remains the most significant biological victory for the project as it moves into its fourth year.

World Wildlife Day 2026 : Conserving Medicinal and Aromatic Plants

Why in News?

World Wildlife Day 2026 was observed globally on **March 3** with the specialized theme **"Medicinal and Aromatic Plants: Conserving Health, Heritage and Livelihoods."** The day commemorates the adoption of the **CITES** (Convention on International Trade in Endangered Species of Wild Fauna and Flora) in 1973. The 2026 observance highlights the critical role of wild plants in both traditional and modern medicine, noting that **70–95%** of people in developing countries rely on plant-based medicine for primary healthcare.

1. Conservation of Medicinal Plants in India

- **Mega-Biodiversity Powerhouse:** India hosts **7% of global biodiversity** with 45,000 plant species. Out of these, **15,000 are medicinal**, with 8,000 used in traditional systems like Ayurveda, Siddha, and Unani.
- **Geographical Concentration:** Nearly **70%** of these plants are found in biodiversity hotspots: the **Western Ghats**, **Eastern Ghats**, **Himalayas**, and **Aravalli range**.
- **Dual Conservation Strategy:**
    - **In-situ:** 115 **Medicinal Plants Conservation Areas (MPCAs)** protect species in their natural habitats.
    - **Ex-situ:** 9,361 accessions are preserved at the **National Seed Gene Bank** in New Delhi to prevent extinction.

2. Institutional Framework and Governance

- **National Medicinal Plants Board (NMPB):** The nodal agency under the **Ministry of Ayush** implementing a flagship scheme with an outlay of **322.41 crore rupees** (2021–2026).
- **e-CHARAK Platform:** A digital "e-channel for Herbs, Aromatic, Raw material and Knowledge" that provides real-time market prices from **25 herbal markets** and facilitates direct trade between farmers and industry.
- **Aushadhi Vanaspati Mitra Program (AVMP):** A national initiative to recognize and reward individuals, communities, and institutions for outstanding contributions to conservation and sustainable cultivation.
- **Medicinal Plants Business Centre (MPBC):** Provides financial assistance up to **5 crore rupees** per unit for post-harvest infrastructure, including scientific storage, drying, and quality testing.

3. Key Government Initiatives

- **National Ayush Mission (NAM):** Integrates medicinal plant cultivation into mainstream farming systems to enhance farmer income.
- **Traceability & Standards:** Implementation of **Good Agricultural and Collection Practices (GACPs)** to ensure the quality and safety of raw herbal drugs for international markets.
- **Folk Claim Documentation:** The **Botanical Survey of India** has documented over **9,567 folk claims** to preserve intangible traditional knowledge from indigenous communities.

4. GI Tagged Medicinal Plants (Heritage Protection)

India uses **Geographical Indication (GI) tags** to safeguard its unique plant varieties. Notable additions include:

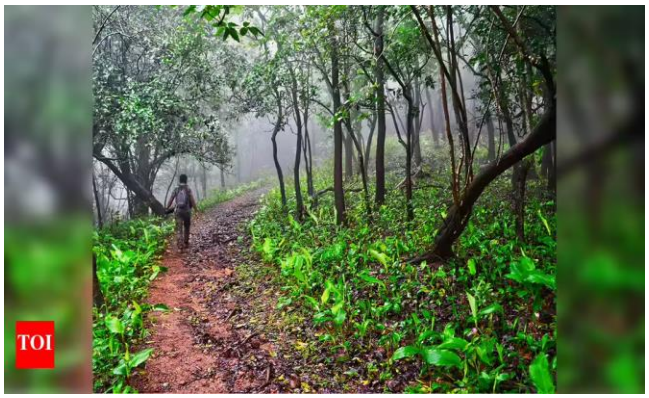
- **Nagauri Ashwagandha (Rajasthan):** Registered in **November 2025**; known for its superior quality and high alkaloid content in the arid Nagaur region.
- **Navara Rice (Kerala):** Used specifically in Panchakarma therapies.
- **Saffron (J&K):** The world-renowned Kashmiri saffron.
- **Ganjam Kewda (Odisha):** Used for its aromatic essential oils.

Conclusion

The 2026 focus on medicinal plants marks a shift toward recognizing the **"Green Wealth"** of the nation as a strategic asset. By linking traditional knowledge

with digital platforms like **e-CHARAK** and infrastructure like **MPBCs**, India is positioning itself as a global leader in the sustainable herbal economy. Conservation is no longer just an environmental goal but a cornerstone of public health and rural livelihood security.

Inclusion of Reserve Forest in Kappatagudda Wildlife Sanctuary



Why in News?

The **Karnataka High Court** directed the State government to formally include a previously omitted **55 sq. km** reserve forest area into the **Kappatagudda Wildlife Sanctuary** in Gadag district. The court prioritized ecological conservation by dismissing petitions from stone-crushing units operating within the sanctuary's **Eco-Sensitive Zone (ESZ)**.

Wildlife Sanctuary: General Definition

- **Legal Basis:** Declared under the **Wildlife (Protection) Act, 1972**.
- **Purpose:** To protect and conserve wildlife and habitats based on ecological, faunal, floral, or geomorphological importance.
- **Location:** Can be established within reserved forests or territorial waters.

Kappatagudda Wildlife Sanctuary

Unique Conservation Goal

- It is the **only Wildlife Sanctuary in Karnataka** declared specifically for the conservation of **wild flora**.
- Safeguards a vast **endemic gene pool** of medicinal herbs and grasses.

Ecosystem and Landscape

- **Nickname:** Often called the **"Western Ghats of North Karnataka"** due to its rich biodiversity.
- **Habitat Type:** A classic **dryland ecosystem** featuring scrub jungles and grasslands.
- **Forest Patches:** Contains dry deciduous and riverine forests in valleys and depressions.

Hydrological Significance

- Acts as a crucial watershed.
- Serves as the **major catchment area for the River Tungabhadra**.

Faunal Diversity

- **Key Species:** Hosts Leopards, Indian Wolves, Striped Hyenas, Blackbucks, and Four-Horned Antelopes.
- **Ecological Role:** Bridges the gap between lesser and greater carnivores in the region.

Ecological Threats

- **Fragmentation:** The habitat is highly fragmented.
- **Anthropogenic Pressures:** Faces risks from habitat encroachment, overgrazing, illegal firewood collection, and poaching.

India's 7th National Report to the Convention on Biological Diversity (CBD)

Why in News?

India has submitted its **7th National Report** to the CBD, marking the first full assessment since the adoption of the **Kunming-Montreal Global Biodiversity Framework (KMGBF)** in 2022. The report evaluates progress toward **23 national biodiversity targets (NBT)**. While significant strides have been made in forest cover and restoration, currently **only two targets** are officially on track for 2030.

NOTE :

The report serves as a "reality check" for India's commitment to halting biodiversity loss. It highlights successes in **ecosystem restoration** and **flagship**

species recovery (Tigers, Lions, Snow Leopards) but notes critical gaps in quantitative data for lesser-known species, land degradation, and the ambitious global **"30x30" target**.

Key Facts: 7th National Report

- **Lead Agency:** Prepared by the **MoEFCC** with technical support from the **UNDP** and inputs from 33 ministries.
- **Mechanism:** Progress is monitored via 142 national indicators through a digital **NR7 data portal**.
- **Global Context:** India is a **megadiverse** country; its performance is vital to the KMGBF's goal of conserving 30% of land and sea by 2030.

Targets On Track

- **NBT 1 (Biodiversity-inclusive Planning):** * Forest and tree cover reached **25.17%** (827,357 sq km).
    - Increase of **1,445.81 sq km** between 2021 and 2023.
    - Implementation of the **PARIVESH 2.0 portal** for streamlined environmental approvals.
- **NBT 2 (Ecosystem Restoration):** * Restored **24.1 million hectares**, nearing the **Bonn Challenge** pledge of 26 million hectares.
    - Forest carbon stock rose to **7,285.5 million tonnes**.
    - Expansion of bamboo area (**1,540 sq km**) and modest increase in mangrove cover.

Critical Challenges and Concerns

- **Land Degradation: 29.77%** (97 million hectares) of India's area is undergoing degradation, potentially outpacing restoration.
- **30x30 Goal Gap:** Formal protected areas cover only **~5%** of India's land. Reaching 30% by 2030 remains a major hurdle.
- **Species Bias:** While data on "flagship" species is robust (e.g., **3,167 tigers**), data on lesser-known species remains limited.
- **Data Gaps:** Lack of uniform collection methods across departments makes long-term trend analysis difficult.
- **Structural Hurdles:** Limited financial resources, technical capacity, and the rising impact of **climate change** (fires, floods).

Kunming-Montreal Global Biodiversity Framework (KMGBF)

- **Established:** Adopted at **COP15** in December 2022.
- **Vision:** Living in harmony with nature by **2050**; halting loss by **2030**.
- **Target 3 (30x30):** Conserving **30%** of terrestrial and marine areas through protected areas and **Other Effective Area-based Conservation Measures (OECMs)**.

Convention on Biological Diversity (CBD)

- **Origin:** 1992 Rio Earth Summit.
- **Three Core Objectives:**
    - Conservation of biological diversity.
    - Sustainable use of its components.
    - Fair and equitable sharing of benefits from genetic resources.
- **Supplementary Protocols:**
    - **Cartagena Protocol (2000):** Biosafety and Living Modified Organisms (LMOs).
    - **Nagoya Protocol (2010):** Access and Benefit-Sharing (ABS).

Analysis of Winter Air Pollution in India (2025–26)

Why in News?

An analysis by the **Centre for Research on Energy and Clean Air (CREA)** found that **204 out of 238 Indian cities** failed to meet national air quality standards during the winter of **2025–26**. The study, based on **CPCB** data from **Continuous Ambient Air Quality Monitoring Stations (CAAQMS)**, highlights the extreme severity of seasonal pollution across the country.

Key Findings of the CREA Analysis

- **National Non-Compliance:** 204 cities recorded average **PM2.5** levels exceeding the Indian **National Ambient Air Quality Standard (NAAQS)** of **40 µg/m³**.
- **Global Comparison:** Not a single city out of the 238 analyzed met the **WHO** safe limit of **5 µg/m³**.
- **Most Polluted Cities:**
  - **Ghaziabad:** Ranked 1st with an average PM2.5 of **172 µg/m³**.
  - **Noida:** 166 µg/m³.
  - **Delhi:** 163 µg/m³.
- **Economic Hubs:** Kolkata (78 µg/m³), Mumbai (48 µg/m³), and Chennai (44 µg/m³) all exceeded national standards.
- **Cleanest Cities:**
  - **Chamarajanagar (Karnataka):** Cleanest in India with just **19 µg/m³**.
  - **Bengaluru:** The only megacity to stay slightly below the limit at **39 µg/m³**.
  - **Regional Performance:** Southern and Central/Northeastern India performed best; 8 of the top 10 cleanest cities were in **Karnataka**.

Key Terms Related to Air Pollution

Core Pollutants

- **Particulate Matter (PM10 & PM2.5):** PM2.5 are fine particles (2.5 micrometers or less) that can enter the bloodstream through the lungs.
- **Ground-Level Ozone (O3):** A harmful **secondary pollutant** created by reactions between **NOx** and **VOCs** in sunlight.
- **Volatile Organic Compounds (VOCs):** Chemicals from paints, exhaust, and industry that contribute to smog.
- **Secondary Pollutants:** Formed in the atmosphere via chemical reactions rather than direct emission.

Atmospheric Phenomena

- **Photochemical Smog:** Haze caused by solar UV radiation acting on hydrocarbons and nitrogen oxides.
- **Temperature Inversion:** Occurs when a warm air layer traps cooler air and pollutants near the ground; a major cause of **Delhi's** winter smog.
- **Acid Rain:** Precipitation containing nitric and sulfuric acids from burning fossil fuels.

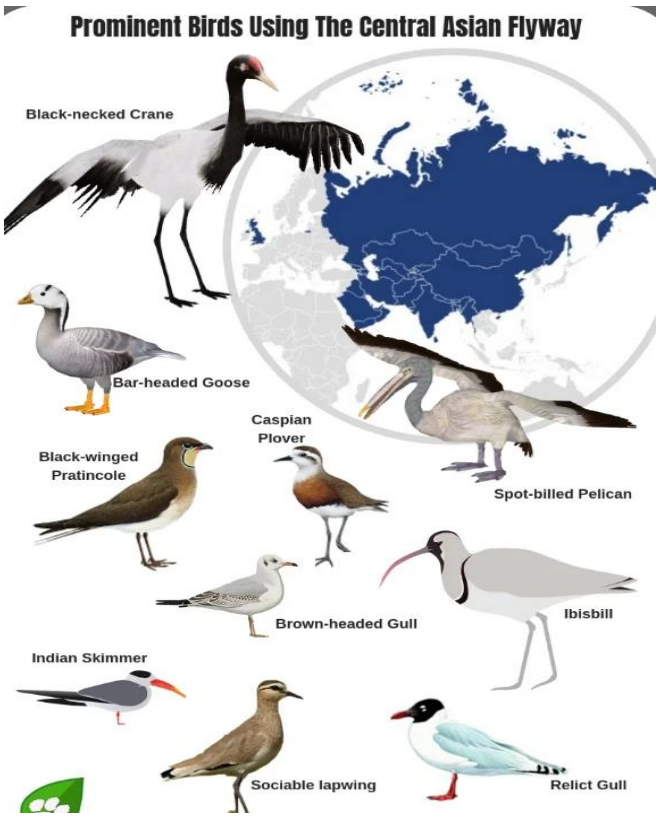
Monitoring & Measurement

- **Air Quality Index (AQI):** A color-coded tool tracking **8 pollutants** (PM10, PM2.5, NO2, SO2, CO, O3, NH3, Pb).
- **NAAQS:** Standards prescribed by the CPCB covering **12 pollutants** (the 8 in AQI plus Benzene, Benzo(a)Pyrene, Arsenic, and Nickel).
- **SAFAR:** Real-time air quality forecasting by the Ministry of Earth Sciences.
- **CAAQMS:** Automated stations that transmit real-time pollution data.

Governance & Action Frameworks

- **GRAP (Graded Response Action Plan):** Emergency measures for **Delhi-NCR** that activate incrementally as AQI worsens.
- **Bharat Stage (BS) Standards:** Regulations for vehicle emissions; India currently follows **BS-VI**.
- **NCAP (National Clean Air Programme):** A national strategy targeting a **40% reduction** in particulate matter by **2026**.

UN State of the World's Migratory Species Report : 2026 Update



Why in News?

A critical interim update to the **UN State of the World's Migratory Species report** was presented at the **CMS COP15** in Campo Grande, Brazil (March 23–29, 2026). The assessment warns that **49%** of migratory species protected under the **Convention on Migratory Species (CMS)** are currently declining, marking a 5% increase from the 44% reported in 2024.

Note :

The 2026 update acts as a "red alert," showing that nearly half of CMS-listed populations are in retreat, with **24%** now facing extinction. While habitat loss and overexploitation remain the biggest drivers, the rapid spread of **Avian Flu (H5N1)** has become a devastating new threat. However, targeted international action has led to significant recoveries for species like the **Saiga Antelope**.

Key Findings: 2026 Interim Update

- **Worsening Trends: * Population Decline:** Now stands at **49%** (up from 44% in 2024).
    - **Extinction Risk: 24%** of listed species are now globally threatened (up from 22%).
- **Species-Specific Slumps: * Shorebirds:** 69% of species with downgraded status are migratory shorebirds.
    - **Marine Life:** Sharks and rays have seen a nearly **50% population drop** since 1970 due to overfishing and bycatch.
    - **Freshwater Fish:** Monitored populations have plummeted by an average of **81%** since 1970.
- **Emerging & Critical Threats:**
    - **H5N1 Avian Flu:** Has caused mass mortality in 598 bird and 102 mammal species, including penguins and sea lions.
    - **Linear Infrastructure:** Roads, fences, and railways are fragmenting habitats, severely impacting the **Mongolian Gazelle** and **Wildebeest**.
    - **Pollution:** Noise and light pollution, along with **lead ammunition**, continue to impair migration.

Success Stories: Signs of Hope

Despite overall declines, **7 CMS-listed species** showed improvement due to coordinated action:

- **Saiga Antelope:** Spectactularly rebounded in Kazakhstan, moving from Endangered to **Near Threatened**.
- **Scimitar-horned Oryx:** Reclassified from "Extinct in the Wild" to **Endangered** after successful reintroduction in Chad.
- **Mediterranean Monk Seal:** Status improved to **Vulnerable** following population growth.

India's Role and Importance

- **Central Asian Flyway (CAF):** India is a core country for the CAF, which supports over **279 migratory waterbird populations**.
- **Key Indian Species:** Siberian Crane, Amur Falcon, Asian Elephant, Snow Leopard, and the **Great Indian Bustard**.
- **CMS COP15 Contribution:** India highlighted its progress in establishing a **Coordinating Unit for the CAF** in New Delhi and successful vulture breeding programs.

Convention on Migratory Species (CMS) / Bonn Convention

- **About:** A legally binding UN treaty (1979) for protecting transboundary migratory animals. India has been a member since **1983**.
- **Appendices:**
    - **Appendix I:** Endangered species needing strict protection (188 species total).
    - **Appendix II:** Species requiring international cooperation agreements.
- **CMS COP15 (Brazil 2026) Outcomes:**
    - Added **40 new species** to protected lists, including the **Snowy Owl**, **Cheetah**, and **Giant Otter**.
    - Adopted resolutions to address **deep-sea mining**, **plastic pollution**, and **underwater noise**.

Priority Conservation Actions

- **Connect & Restore:** Protect **Key Biodiversity Areas (KBAs)**; 47% currently lack formal protection.
- **Ecological Connectivity:** Minimize infrastructure impact through strict environmental assessments.
- **Phase-outs:** Accelerate the transition away from **lead ammunition** and toxic pesticides near migratory routes.
- **Climate Management:** Use "dynamic management" to protect shifting migration pathways.

Conclusion

The 2026 interim update proves that while the crisis is deepening, **recovery is achievable** through sustained multilateral cooperation. The focus must now move from simply monitoring declines to the rapid restoration of "Blue" and "Green" corridors to ensure safe passage for the world's most mobile species.

Grid Congestion : The New Frontier in India's Clean Energy Transition

Why in News?

At the **Bharat Climate Forum 2026**, experts and system planners identified a major shift in India's energy challenges. The primary obstacle to scaling renewable energy (RE) has moved from "generation capacity" to **transmission congestion** and **operational conservatism**. Despite having the hardware, thousands of megawatts of clean power are currently "stranded" due to grid limitations.

NOTE :

India has surpassed the milestone of **50% non-fossil installed capacity** five years ahead of schedule. However, a structural disconnect between planning and operations is causing severe under-utilization of high-capacity corridors. To reach **Net Zero 2070**, India must shift focus toward equitable curtailment policies, advanced grid management, and a massive scale-up of energy storage.

Key Concerns in the Renewable Build-Out

- **Evacuation Bottlenecks:** Generation is outstripping transmission. In Rajasthan, for instance, **4,000 MW** of commissioned RE capacity cannot inject power during peak hours because the 23 GW capacity exceeds the 18.9 GW evacuation limit.
- **T-GNA Inequity:** Projects with **Temporary General Network Access (T-GNA)** bear 100% of the shutdown burden during congestion, while permanent GNA holders remain unaffected. Experts argue a 15% shared loss across all projects would be more equitable.
- **Under-utilized Assets:** Massive **765 kV corridors** designed for 6,000 MW are often operated at less than **20% utilization** (600–1,000 MW) due to "operational conservatism" regarding grid stability.

- **Institutional Disconnect:** The **Central Transmission Utility (CTU)** plans for full capacity, but **Grid India** (the operator) often permits only a fraction of that flow, leading to stranded investments for developers.
- **Storage Deficit:** India requires **411 GWh** of storage by 2032, but current deployments of Battery (BESS) and Pumped Hydro (PHS) are inadequate to manage solar/wind intermittency.

India's Renewable Energy Status (November 2025)

- **Historic Milestone:** Non-fossil sources now account for **262.74 GW (51.5%)** of total installed capacity.
- **Solar Leadership:** Capacity reached **132.85 GW**, a 41% year-on-year jump.
- **Global Rankings:** India ranks **3rd in Solar**, **4th in Wind**, and **4th in total RE** capacity globally.

Strategic Initiatives & Policies

- **PM Surya Ghar:** Installed nearly **14.43 lakh** rooftop solar systems in 2025.
- **ALMM (Approved List of Models and Manufacturers):** A "Make in India" framework mandating the use of certified domestic solar modules to ensure quality and supply chain security.
- **PM JANMAN & DA JGUA:** Providing off-grid solar solutions to tribal and PVTG habitations where grid reach is limited.
- **National Policy on Geothermal Energy (2025):** Launched to tap into heat energy from the earth's crust for the 2070 Net Zero goal.
- **Offshore Wind:** Viability Gap Funding (VGF) provided for the first **1,000 MW** of projects off Gujarat and Tamil Nadu.

Proposed Solutions to Resolve Grid Issues

1. **Mandate Utilization:** Redefine Grid India's role to balance "grid stability" with "maximum asset utilization."
2. **Equitable Curtailment:** Distribute power shutdowns proportionately across all generators rather than penalizing T-GNA projects.
3. **Dynamic Reallocation:** Use real-time protocols to reallocate unused grid capacity (GNA) to active developers.
4. **Advanced Management:** Deploy **Dynamic Security Assessments** and **Adaptive Line Ratings** used by leading global grid operators.
5. **Accountability:** Trigger formal public reviews when major transmission assets persistently under-deliver on their planned capacity.

Conclusion

India's transition is at a crossroads. Building more solar parks will yield diminishing returns unless the **physical "pipes" (transmission lines)** are used to their full potential. Aligning planning with dynamic operations is now the non-negotiable next step for a **Viksit Bharat**.

"Black Rain" Over Tehran : Environmental and Health Crisis

Why in News?

Following **Israeli strikes** on Iranian oil facilities in March 2026, residents of **Tehran** and surrounding provinces reported a phenomenon known as **"black rain."** The strikes ignited massive fires at refineries and storage tanks, releasing vast quantities of soot and toxic hydrocarbons into the atmosphere, which then fell back to earth as dark, oily precipitation.

What is Black Rain?

- **Definition:** Rainfall that has become contaminated with **soot, ash, oil particles, and industrial chemicals** released by large-scale fires or industrial disasters.
- **Mechanism:** As raindrops fall through a polluted atmosphere, they "wash out" particulate matter and chemical compounds, turning the water dark and viscous.
- **Causes:** Typically occurs after **refinery explosions**, massive oil well fires, volcanic eruptions, or nuclear fallout.

Formation and Composition

The explosions at Iranian petroleum hubs released a cocktail of pollutants into the sky:

- **Toxic Hydrocarbons:** Unburnt fuel particles and benzene.
- **Sulfur and Nitrogen Oxides:** Gaseous byproducts that contribute to the acidity of the rain.
- **Particulate Matter (PM2.5):** Fine soot that can travel long distances before being brought down by rain.

Severe Health and Environmental Risks

Immediate Health Hazards

- **WHO Warning:** The **World Health Organization** has classified the event as a "real danger" to the regional population.
- **Respiratory Impact:** Inhalation of toxic mist can cause severe breathing difficulties, asthma triggers, and lung inflammation.
- **Physical Contact:** Can cause **chemical burns**, skin rashes, and intense eye irritation.
- **Carcinogenic Risk:** Long-term exposure to **benzene** and other petroleum-derived compounds significantly increases the risk of leukemia and other cancers.

Environmental Degradation

- **"Forever Chemicals" (PFAS):** The use of specialized firefighting foams to combat oil fires risks leaching PFAS into the **groundwater** and soil, where they do not break down.
- **Acid Rain:** High concentrations of sulfur and nitrogen oxides can lower the pH of the rain, leading to the **corrosion of infrastructure** and historical monuments.
- **Food Chain Contamination:** Toxic soot settling on agricultural land can be absorbed by crops, potentially entering the food supply.

Historical Precedent

- **Hiroshima (1945):** The most infamous case of black rain occurred after the atomic bombing, where **radioactive soot** and dust mixed with rain, spreading lethal contamination far beyond the initial blast radius.
- **Kuwait Oil Fires (1991):** During the Gulf War, retreating Iraqi forces set fire to over 600 oil wells, causing black rain and "black snow" across the Middle East and even parts of the Himalayas.

Current Situation in Tehran

- **Advisory:** Iranian health authorities have advised citizens to stay indoors, seal windows, and avoid any contact with rainwater or accumulated sludge.
- **Clean-up:** Specialized environmental teams are monitoring the **water reservoirs** supplying Tehran to ensure that the oily runoff does not compromise the city's drinking water.

First Comprehensive Checklist of Indian Fireflies (1764–2025)

Why in News?

Scientists have compiled the **first-of-its-kind** comprehensive checklist of **Indian fireflies**, synthesizing over **260 years** of scattered scientific records. This landmark study, covering documentation from **1881 to 2025**, identifies **92 species** across **27 genera**, providing a much-needed foundational reference for future taxonomic research in India.

Key Findings of the Study

- **High Endemism:** More than **60%** of the documented species are **endemic** to India (found nowhere else).
- **Historical Gaps:** Alarmingly, over **50 species** have not been officially recorded or sighted again since their original scientific descriptions in the **1800s**.
- **Regional Hotspots:** The study mapped occurrences across **22 States** and one Union Territory:
    1. **Western Ghats:** Richest habitat (25.33% of species).

2. **North East:** 22.66% of species.
3. **Gangetic Plain:** 17.33% of species.
4. **Deccan Peninsula:** 13.33% of species.

- **Absence:** No fireflies were recorded in India's **Desert** or **Semi-Arid** zones, likely due to the lack of necessary moisture.

What are Fireflies?

- **Scientific Classification:** Despite their name, fireflies are neither flies nor bugs; they are **soft-bodied beetles** belonging to the family **Lampyridae** (Order: Coleoptera).
- **Habitat:** They thrive in humid, moist, and vegetated environments like **forests, wetlands, and fields**. They are found on every continent except **Antarctica**.
- **Behavior:** Most species are **nocturnal** (active at night) or **crepuscular** (active at dusk).

The Science of Bioluminescence

- **The Mechanism:** Fireflies produce light through a chemical reaction in a specialized organ called a **photophore** (on the underside of the abdomen).
- **Chemical Components:** The reaction involves the substrate **luciferin**, the enzyme **luciferase**, **oxygen**, and **ATP** (energy).
- **"Cold Light":** The light produced is nearly **100% energy-efficient**, meaning it generates virtually no heat. It is typically yellow-green in color.
- **Primary Functions:** * **In Adults:** Used for **mating communication**, where each species has a unique flash pattern.
    - **In Larvae (Glowworms):** Acts as a **warning signal (aposematism)** to predators that the larvae are distasteful or toxic.

Conservation Challenges

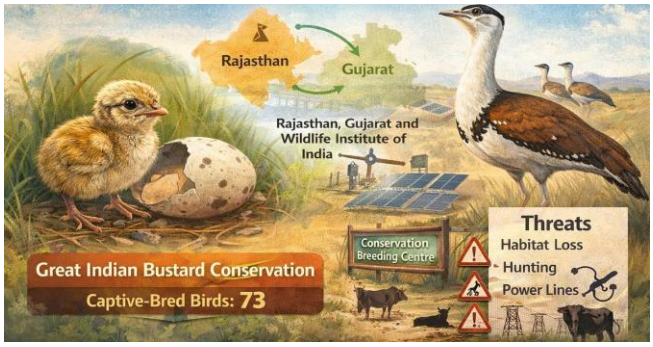
Firefly populations are declining rapidly due to several anthropogenic factors:

- **Light Pollution:** Artificial lights interfere with their bioluminescent mating signals, preventing reproduction.
- **Urbanization:** Loss of moist, undisturbed habitats and wetlands.
- **Pesticide Use:** Impacts both the fireflies and the small insects (snails/slugs) they prey upon during their larval stage.

Conclusion

This checklist is a critical step in moving away from a "taxonomic vacuum" in India. By identifying where these species exist (or where they have gone missing), researchers can now prioritize conservation efforts for these vital indicators of ecosystem health.

Project Great Indian Bustard (GIB): Captive Breeding Milestones (2026)



Why in News?

In **March 2026**, Union Environment Minister Bhupender Yadav announced that **Project Great Indian Bustard (GIB)** has entered the **fourth year** of its captive breeding programme with the hatching of new chicks. A major breakthrough was achieved at the **Ramdevra Breeding Centre** in Rajasthan, which recorded its first-ever chick born through **Artificial Insemination (AI)**. Additionally, a world-first "jumpstart" conservation effort successfully hatched a GIB chick in **Gujarat** after a decade.

Note :

The captive population of the critically endangered Great Indian Bustard has reached **73 birds** (up from 70 earlier in the month) across the breeding centres at **Sam and Ramdevra** in Jaisalmer. These milestones, including the use of advanced AI and the trans-state transport of fertile eggs, represent a turning point for the species, with plans now shifting toward **"rewilding"** or releasing captive-bred birds into their natural habitats.

Key Conservation Milestones (March 2026)

The "Jumpstart" Miracle (Rajasthan to Gujarat)

- **The Challenge:** Gujarat's Kutch region had only three surviving female GIBs and no males, making natural fertile nesting impossible.

- **The Operation:** Scientists from the **Wildlife Institute of India (WII)** transported a 15-day-old fertile egg from Rajasthan to Gujarat.
- **The Journey:** The egg made a **770-km, 19-hour halt-free journey** in a handheld portable incubator.
- **The Result:** The egg was placed in the nest of a wild female in Kutch on March 22; she successfully incubated and hatched the chick on **March 26, 2026**—the first GIB birth in Gujarat in 10 years.

Technological Breakthrough at Ramdevra

- **Artificial Insemination (AI):** For the first time, a chick was born at the Ramdevra facility (established 2022) using AI from a female named "Jerry" and a male named "Parv."
- **Breeding Success:** A total of **five new chicks** were added during the current breeding season (March 2026), bringing the total captive tally to 73.

Profile: Great Indian Bustard (Godawan)

- **Status:** India's most critically endangered bird and the **State Bird of Rajasthan**.
- **Flagship Species:** Represents the health of the **grassland ecosystem**.
- **Physical Traits:** One of the heaviest flying birds in the world (up to 15 kg). It lacks frontal vision, making it highly vulnerable to **power line collisions**.
- **Diet:** Omnivorous; feeds on insects (grasshoppers, beetles), small rodents, and seeds.

Conservation & Distribution

- **Primary Habitat: Thar Desert** (Desert National Park, Jaisalmer). Small populations persist in Gujarat, Maharashtra, Karnataka, and Andhra Pradesh.
- **Legal Protection:**
  - **IUCN Red List:** Critically Endangered
  - **Wildlife (Protection) Act, 1972:** Schedule I
  - **CITES & CMS:** Appendix I

Strategic Conservation Roadmap (2024–2033)

- **Project GIB (Launched 2018):** A joint venture of MoEFCC, WII, and Rajasthan Forest Department funded by **CAMPA** (approx. Rs 77 crore allocated for 2024-2033).
- **Breeding Centres:** Two main facilities at **Sam (Sudasari)** and **Ramdevra** in Jaisalmer serve as the "founder population" hubs.
- **Rewilding Phase:** The government has indicated that "soft releases" into the wild are the next priority to prevent the species from slipping into extinction.

Conclusion

The success of the 2026 breeding season demonstrates that advanced reproductive technologies and inter-state cooperation can overcome the biological hurdles of a slow-breeding species. The focus now turns to protecting the vast grasslands of the Thar and Kutch from infrastructure threats to ensure a safe home for the next generation of GIBs.

EDITORIALS

Crux of The Hindu & Indian Express

Ecology & Environment

India Lacks National SO_2 Emission Standards for Steel Plants

1. Why in News?

- A report by the **Centre for Research on Energy and Clean Air (CREA)** stated that **India still lacks national standards for Sulphur Dioxide (SO_2) emissions** from **steel plant stacks**.
- The report highlighted the case of the **Bokaro Steel Plant (SAIL)** in **Jharkhand**, which is

significantly affecting **child health and local air quality**.

2. What is the Key Issue?

- India does not have **specific national SO_2 emission standards** for many **steel production units**, such as:
  - **Sinter Plants**
  - **Mill Zones**
  - **Refractory Material Plants**
- These units are recognised sources of **SO_2 emissions**, but **regulatory limits are absent**.
- This regulatory gap can increase **air pollution exposure** for nearby populations.

3. Health Impact of the Bokaro Steel Plant

- According to the **Health Impact Assessment (HIA)** conducted by **CREA**, the plant's emissions caused significant health effects.

Impact on Children (Per Year)

- **270 Low Birthweight Births**
- **280 Preterm Births**
- **25 New Cases of Child Asthma**

Impact on Adults

- Around **170 deaths annually** linked to exposure to **PM2.5 and Nitrogen Dioxide (NO_2)**
- About **290 asthma-related emergency hospital visits**

4. Economic Impact

- Air pollution from the plant also causes economic losses.
- Around **123,000 workdays lost annually** due to pollution-related illnesses
- Estimated **economic burden of about US$80 million (₹640 crore)** in 2023
- This reflects **lost productivity and healthcare costs**.

5. Reasons for High Pollution

- The report highlighted several issues:
  - Heavy use of **Coal and Coke** in steel production
  - Incomplete installation of **Electrostatic Precipitators (ESPs)**
  - Continued use of **Outdated Cyclone Dust Collectors**
- Out of **six sinter stack ducts**, only **two have modern pollution-control equipment**.

6. Steel Sector as a Major Polluter

- The **Central Pollution Control Board (CPCB)** classifies the **steel industry** as one of the **17 Highly Polluting Industries** in India.
- Key facts:
  - Current steel production capacity: **~200 million tonnes per year**
  - Planned capacity by **2030: 300 million tonnes**
  - India accounts for **57% of global coal-based steelmaking capacity under development**
- This indicates rapid expansion with **significant pollution risks**.

7. Weak Monitoring and Transparency

- In **2014**, CPCB mandated installation of **Continuous Emission Monitoring Systems (CEMS)** in highly polluting industries.
- However, problems remain:
  - **Incomplete implementation of CEMS**
  - Poor **calibration and regulation**
  - Limited **public access to emission data**
  - Lack of **historical pollution records**
- This reduces **transparency and accountability**.

8. Environmental Concerns

- Experts warn that rapid expansion of steel production may lead to:
  - Increased **Air Pollutant Emissions**
  - Higher **Greenhouse Gas Emissions**
  - Greater **Environmental Degradation**
- Without stricter regulations, India risks following a **"Pollute Now, Clean Later" industrial model**.

9. Importance of Stronger Regulation

Experts recommend:

- Setting **National SO_2 Emission Standards for Steel Plants**
- Strengthening **Pollution Monitoring Systems**
- Increasing **Data Transparency**
- Promoting **Cleaner Steel Production Technologies**

This is essential to protect **Public Health and Environment**.

Conclusion

The **CREA report on Bokaro Steel Plant** highlights a broader national issue — **weak pollution standards in India's steel sector**. As India expands steel production, it is crucial to introduce **strict emission standards, transparent monitoring, and cleaner technologies** to prevent long-term **health, environmental and economic damage**.

Bureau of Energy Efficiency (BEE) Celebrates 25th Foundation Day

1. Why in News?

- The **Bureau of Energy Efficiency (BEE)** celebrated its **25th Foundation Day** on **1 March 2026** at the **India Habitat Centre, New Delhi**.
- The event was attended by **Union Power Minister Shri Manohar Lal**, senior government officials, policymakers, and stakeholders from across the country.
- On this occasion, several initiatives were launched to strengthen **energy efficiency and climate action in India**.

2. Key Launches and Announcements

- During the event, the following initiatives were launched:
- **BEE@25 Logo** to mark the organisation's **25-year milestone**
- **BEE Star Label Mobile Application**
- **Renewable Consumption Obligation (RCO) Portal**
- These initiatives aim to promote **energy efficiency, transparency, and consumer awareness**.

3. Role of the Bureau of Energy Efficiency (BEE)

- The **BEE** works under the **Ministry of Power, Government of India**.
- Its main objective is to promote **energy conservation and efficient use of energy** across different sectors.
- The Minister described **energy efficiency as a preventive approach**, stating that:
- **Saving electricity today reduces the need for building new power plants and lowers carbon emissions.**

4. India's Progress in Climate Commitments

- The Power Minister highlighted India's achievements in **climate and energy transition**:
- **36% reduction in emissions intensity of GDP** since **2005**
- **52% of installed electricity capacity from non-fossil fuel sources**
- Achieved this **ahead of the 2030 target**
- These achievements reflect India's commitment to **sustainable development and climate action**.

5. Major BEE Initiatives Highlighted

Several important programmes led by **BEE** were highlighted during the event:

Key Schemes

- **Perform, Achieve and Trade (PAT) Scheme**
- **Carbon Credit Trading Scheme (CCTS)**
- **Renewable Consumption Obligation (RCO)**
- **Corporate Average Fuel Efficiency (CAFE) Standards**
- **ADEETIE Scheme for MSMEs**
- **Standards & Labelling (S&L) Programme**
- **Energy Conservation and Sustainable Building Code (ECSBC)**

These programmes help reduce **energy consumption and carbon emissions**.

6. BEE Star Label Mobile Application

- The **BEE Star Label App** was launched to help consumers verify **energy efficiency ratings of appliances**.
- Features:
- Scan **QR code** on star-labelled products
- Access **energy performance details**
- Check **product authenticity and compliance status**

- This will improve **consumer awareness and informed purchasing decisions**.

7. Renewable Consumption Obligation (RCO) Portal

- The **RCO Portal** was launched to improve monitoring of **renewable energy consumption obligations**.
- The portal will:
- Improve **data transparency**
- Strengthen **compliance monitoring**
- Support **data-driven policy decisions**
- It will also improve coordination between **government agencies and stakeholders**.

8. Energy Efficiency as India's "First Fuel"

- The **Power Secretary** described **energy efficiency** as India's **"First Fuel."**
- This means:
- The **cheapest and cleanest energy** is the energy that is **saved**.
- Efficient energy use helps balance **energy security, affordability, and sustainability**.

9. Emerging Areas of Focus

The government highlighted new sectors requiring **efficient energy management**, such as:

- **Data Centres**
- **Artificial Intelligence (AI) Infrastructure**
- **Industrial Decarbonisation**
- **Transport Fuel Efficiency**

These sectors will play a key role in India's **future energy demand**.

10. Significance of the 25th Foundation Day

- The celebration reflected BEE's **25-year journey** in promoting energy conservation in India.
- It reaffirmed India's commitment to:
- **Energy Efficiency**
- **Climate Action**
- **Sustainable Economic Growth**

Conclusion

The **25th Foundation Day of the Bureau of Energy Efficiency** highlights India's progress in promoting **energy efficiency as a key pillar of climate policy and sustainable development**.

Through initiatives like the **PAT Scheme, Carbon Market, Star Labelling Programme, and Renewable Consumption Obligations**, BEE continues to strengthen India's transition toward a **cleaner, more efficient and sustainable energy system**, supporting the vision of **Viksit Bharat @2047**.

Forest Owlet Rediscovered in Kuno National Park After 113 Years

1. Why in News?

- The **Forest Owlet**, a rare bird species **endemic to central India**, has been spotted in **Kuno National Park in Madhya Pradesh** after **113 years**.
- The sighting is significant for **biodiversity conservation** and indicates improving **ecosystem health in the region**.

2. Discovery in Kuno National Park

- The rare bird was first spotted by **Labh Yadav**, a local tourism operator, in the **Parond Beat area of Kuno National Park**.
- After the sighting:
  - **Forest officials were informed**
  - The species was confirmed by **Vivek Patel** from the **Wildlife Research and Conservation Society**
- This marks the **first recorded sighting of the Forest Owlet in Kuno National Park**.

3. Historical Background of the Forest Owlet

- First discovered in **1872**
- Last recorded sighting in **1884**
- After that, the species was **believed to be extinct**
- However, in **1997**, the bird was **rediscovered in Nandurbar district of Maharashtra**, surprising the scientific community.

4. Distribution of the Forest Owlet

- The species is **endemic to central India**.
- It has been observed in:
  - **Madhya Pradesh**
  - **Maharashtra**
  - **Gujarat**
  - **Odisha**
  - **Chhattisgarh**

Important habitats include:

- **Melghat Tiger Reserve (Maharashtra)**
- Forest areas in **Khandwa, Burhanpur and Betul districts of Madhya Pradesh**

5. Habitat of the Forest Owlet

The species prefers:

- **Tropical and Subtropical Moist Lowland Forests**
- **Dense Deciduous Forests**
- **Open Dry Deciduous Teak Forests**
- **Tropical Dry Forests**

These habitats are mostly found in **central Indian forest ecosystems**.

6. Unique Features of the Forest Owlet

- The Forest Owlet belongs to the **owl family Strigidae**.
- Important characteristics:
  - **Unspotted crown**
  - **Full throat collar**
  - **Heavily banded wings and tail**
  - **Thickly feathered legs**
- Unlike most owls, the **Forest Owlet is diurnal**, meaning it is active during the **daytime**.
- It usually hunts between **6 AM and 10 AM**.

7. Diet of the Forest Owlet

- The bird mainly feeds on:
  - **Rodents**
  - **Reptiles** such as **lizards and skinks**
  - **Insects**
- This makes it an important part of the **forest ecosystem and food chain**.

8. Conservation Status

- The **Forest Owlet** is a highly threatened species.
- Current status:
  - **IUCN Red List: Endangered**
  - **CITES: Appendix I** (highest level of protection against international trade)
- Global population estimate: **around 250–999 adult birds**.
- The biggest threat is **habitat loss and forest fragmentation**.

9. Importance of the Discovery

- The sighting in **Kuno National Park** is important because:
- It shows **improvement in biodiversity conservation**
- It indicates a **healthy forest ecosystem**
- It may be linked to broader conservation efforts such as the **Cheetah Reintroduction Project**
- Kuno National Park is already known for hosting **cheetahs and diverse wildlife**.

Conclusion

The rediscovery of the **Forest Owlet in Kuno National Park after 113 years** is a major milestone for **wildlife conservation in India**. It highlights the importance of **protecting forest habitats** and shows that **effective conservation efforts can help rare species survive and recover**.

Smog-Eating Coatings : Delhi's Passive Air-Cleaning Strategy (2026)

Why in News?

In **March 2026**, the **Delhi Government**, in collaboration with **IIT Madras**, launched a pilot project to apply **"smog-eating" photocatalytic coatings** on the city's urban infrastructure. This initiative aims to transform ordinary surfaces—such as roads, buildings, and pavements—into active air purifiers to combat Delhi's persistent air pollution crisis.

Note :

The technology utilizes **Titanium Dioxide (TiO_2)** as a photocatalyst. When these coatings are exposed to sunlight, they trigger a chemical reaction that breaks down harmful gases like **Nitrogen Dioxide (NO_2)** and **Volatile Organic Compounds (VOCs)**. Unlike energy-intensive smog towers, this is a **passive, zero-energy strategy** that works as a background process to prevent the formation of toxic ground-level ozone and secondary particulate matter.

How "Smog-Eating" Coatings Work

- **The Catalyst:** The coating contains **Titanium Dioxide (TiO_2)**, a stable and cost-effective material already common in paints and sunscreens.
- **The Reaction:** When ultraviolet (UV) light from the sun hits the surface, TiO_2 generates high-energy electrons. These electrons react with moisture in the air to create "oxidizing agents" that dismantle pollutant molecules.
- **The Result:** Harmful gases are converted into harmless substances (like trace nitrates) that are eventually washed away by rain or periodic cleaning.

Impact on Air Quality

- **Targeting Precursors:** While the coating does not filter dust (PM10) or soot (PM2.5) directly, it destroys the **chemical precursors** (NOx and VOCs) that react in the atmosphere to create secondary particles and **Ground-Level Ozone**.
- **Passive Mitigation:** Once applied, the system requires no electricity or manual operation, making it a continuous, decentralized cleaning mechanism for urban "canyons."

Comparative Analysis: Coatings vs. Other Tech

Feature	Smog-Eating Coatings	Smog Towers	Cloud Seeding
Energy Use	**Zero (Passive)**	High (Active Fans)	High (Aircraft/Flares)
Scalability	High (applied to all walls/roads)	Low (Fixed location)	Low (Weather dependent)
Primary Goal	Destroying toxic gases (NO_2)	Filtering dust (PM2.5)	Inducing rain for wash-out
Cost	Relatively Low	Very High	High per session

Environmental and Real-World Challenges

- **Dust Accumulation:** Delhi's high dust levels can coat the TiO_2 layer, blocking sunlight and "blinding" the catalyst. Regular maintenance/washing is required to keep the surfaces active.
- **Smog Intensity:** During peak winter smog, **sunlight intensity drops**, which can significantly reduce the photocatalytic efficiency of the coatings.
- **Yamuna Eutrophication:** A major concern is **Nitrate Runoff**. When rain washes the neutralized pollutants off buildings, they enter urban drains. High nitrate levels in the **Yamuna** can trigger **eutrophication** (algal blooms), potentially harming aquatic life.
- **Wind Dynamics:** Shifting winds can move pollutants away from the coated surfaces before the reaction can occur, making placement strategy critical.

Conclusion

The partnership with **IIT Madras** marks a shift from "reactive" technologies like smog towers to "integrated" urban design. While not a "silver bullet" for Delhi's air, photocatalytic coatings provide a vital, low-cost layer of defense. For the 2026-27 winter season, the project's success will depend on how well the city manages the **trade-off between air purification and water body protection**, ensuring that cleaning the sky doesn't accidentally pollute the river.

Hudsonian Godwit : A Crisis in Migration and CMS COP15 Protection (2026)

Why in News?

In **March 2026**, the **Hudsonian godwit** emerged as a primary focus at the **15th Conference of the Parties (COP15)** of the UN Convention on the Conservation of Migratory Species (CMS) held in **Campo Grande, Brazil**. The bird is among **42 species** (including the Hudsonian whimbrel and lesser yellowlegs) that were proposed for—and successfully granted—enhanced international protection. A staggering **95% population decline** has triggered an urgent global call to save this long-distance marathon flier.

Note

The Hudsonian godwit is a migratory marvel, flying nearly **11,000 km non-stop**. However, its population is in freefall due to a combination of **Arctic climate mismatches**, habitat loss in South American wetlands, and the degradation of stopover sites in

North America. At **CMS COP15**, it was officially included in **Appendix I**, mandating strict protection across its entire migratory range. This move comes as the "Interim State of the World's Migratory Species Report 2026" warns that **49%** of protected migratory species are now in decline.

The Hudsonian Godwit: A 30,000 km Journey

- **Migration Route:** Travels annually from Arctic breeding grounds to the southern tip of South America (**Patagonia**).
- **Endurance:** Capable of non-stop flights of **11,000 km**, relying on high-fat reserves built up at specific stopover points.
- **Conservation Status:** Currently classified as **Vulnerable** on the IUCN Red List.

Primary Threats to Survival

- **Arctic Ecological Mismatch:** Due to climate change, insects (the chicks' primary food) are hatching earlier. By the time godwit chicks hatch, the peak food supply has often already passed.
- **South American Industrialization:** In **Chile and Argentina**, the expansion of **salmon and oyster farming** has destroyed the intertidal mudflats where the birds feed during the southern summer.
- **North American Wetland Loss:** Changes in US agricultural land use have drained the shallow "prairie potholes" and wetlands required for the birds to refuel mid-journey.

Outcomes of CMS COP15 (March 23–29, 2026)

- **Appendix I Inclusion:** The Hudsonian godwit was moved to **Appendix I**, the highest level of protection, which prohibits "taking" (hunting/capturing) and mandates habitat restoration by range states.
- **Worsening Global Trend:** The conference highlighted that extinction risks are rising, with **24% of all migratory species** now facing the threat of total extinction.
- **Regional Cooperation:** Brazil, Argentina, and Chile agreed on a coordinated conservation plan to protect the "Blue Corridors" and intertidal zones essential for shorebirds.

Understanding the CMS (Bonn Convention)

- **About:** A legally binding UN treaty (1979) that provides a framework for countries (Range States) to protect species that cross national borders.
- **Appendix I (Endangered):** Requires strict protection. India's **Great Indian Bustard** and the **Siberian Crane** are notable members.
- **Appendix II (Favorable Status Needed):** Focuses on species that would benefit from international cooperation and MoUs.
- **The "Range State" Obligation:** Countries along the migration path are legally bound to remove obstacles to migration and conserve vital habitats.

Conclusion

The **Hudsonian godwit** serves as a "sentinel species" for the health of our global ecosystems. Its 2026 listing at **CMS COP15** is a critical legal victory, but its survival depends on the immediate implementation of "connectivity conservation"—ensuring that the Arctic, the North American wetlands, and the Patagonian coast remain linked and healthy. As the **Campo Grande Declaration** emphasizes, "Where nature flows, life grows," and for the godwit, the clock is ticking.

India's NDC 3.0 : Climate Action Plan for 2031–2035

Why in News?

The Union Cabinet has approved India's updated **Nationally Determined Contribution (NDC 3.0)** for the period **2031–2035**. This official climate strategy will be communicated to the **UNFCCC** under the framework of the Paris Agreement. By submitting this

update in early 2026, India joins 128 other parties in aligning with the outcomes of the **2021 Global Stocktake**, which highlighted the urgent need to increase global ambition to limit warming to **1.5°C**.

Note

India's NDC 3.0 sets progressive targets that balance the nation's developmental needs with global environmental responsibilities. The plan focuses on three primary pillars: increasing **non-fossil energy capacity to 60%**, reducing **emissions intensity of GDP by 47%**, and expanding the **carbon sink to 4 billion tonnes**. While India has already met several of its 2030 goals ahead of schedule, the 2035 roadmap addresses the "implementation gap" by focusing on battery storage, green hydrogen, and a "just transition" for coal-dependent regions.

Key Targets Under NDC 3.0 (2031–2035)

- **Non-Fossil Fuel Energy:** India pledges that **60%** of its total installed electricity capacity will come from non-fossil sources (solar, wind, nuclear, etc.) by 2035.
    - *Current Status:* As of February 2026, India reached **52.57%**, surpassing its original 2030 target of 50%.
- **Emissions Intensity:** The goal is to reduce the emissions intensity of the GDP by **47%** by 2035 (relative to 2005 levels).
    - *Current Status:* A **36% reduction** was already achieved by 2020, putting the 45% target for 2030 well within reach.
- **Carbon Sink Expansion:** Targeting an additional carbon sink of **3.5 to 4.0 billion tonnes** of CO_2 equivalent through enhanced forest and tree cover.
    - *Current Status:* As of 2025, India has successfully created a sink of **2.29 billion tonnes**.

India's Strategic Approach

- **Equity & CBDR-RC:** The strategy is rooted in "Common but Differentiated Responsibilities," ensuring India's growth is not sacrificed for global mitigation.
- **Technology Integration:** Emphasis on **Green Hydrogen**, **Carbon Capture (CCUS)**, and a massive scale-up of **Nuclear Energy**.
- **Mass Movements:** Leveraging the **"LiFE" (Lifestyle for Environment)** principle to turn climate action into a citizen-led movement.
- **Coastal Resilience:** Strengthening natural barriers through the **MISHTI** initiative (mangrove restoration) and advanced early warning systems.

Major Challenges to Implementation

Challenge	Impact on NDC 3.0
Generation Gap	Renewables form 52% of capacity but only **25% of actual generation** due to intermittency.
Storage Limits	Heavy dependence on imported lithium and a lack of affordable **Utility-Scale Battery Storage**.
Coal Dependency	Coal still powers **75% of generation**; a sudden exit threatens the stability of the national grid.
Financial Barriers	India requires **USD 40–50 billion annually**, but global climate finance remains inconsistent.
Land Scarcity	Large solar parks face intense competition with agricultural land and local communities.

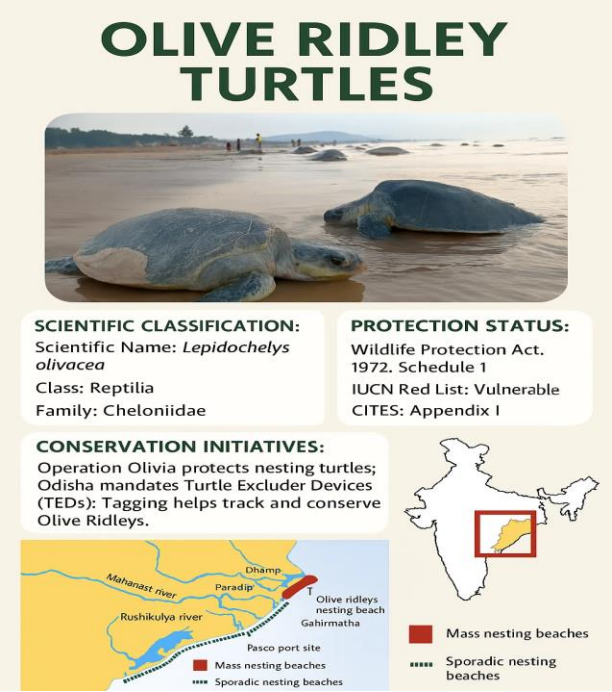
Measures to Strengthen the 2035 Roadmap

1. **Round-the-Clock (RTC) Power:** Moving toward PPAs that bundle solar/wind with **Pumped Hydro Storage (PHS)** to ensure a steady 24/7 green supply.
2. **Repurposing Legacy Sites:** Converting abandoned coal mines into solar parks or hydro-storage facilities to solve land acquisition hurdles.
3. **Just Transition Fund:** Establishing a statutory fund to reskill workers in the "coal belt" (Jharkhand, Odisha, Chhattisgarh) as thermal plants phase out.
4. **Agri-Voltaics:** Scaling up the installation of elevated solar panels over active farmland to provide farmers with a dual income of "food and fuel."
5. **Domestic Carbon Market:** Operationalizing the **Carbon Credit Trading Scheme (CCTS)** to incentivize heavy industries (steel, cement) to decarbonize.

Conclusion

India's **NDC 3.0** is a blueprint for **"Viksit Bharat @2047"** that refuses to choose between the economy and the environment. By setting ambitious yet realistic targets for 2035, India is positioning itself as a leader of the **Global South**, demonstrating that large-scale industrialization can coexist with a commitment to **Net-Zero by 2070**. The success of this plan will depend on India's ability to master energy storage and mobilize the massive domestic and international capital required for a green transformation.

Olive Ridley Turtle Conservation on Hope Island (2026)



Why in News?

In **March 2026**, the Wildlife Management Authority and officials from the **Coringa Wildlife Sanctuary** successfully conserved nearly **20,000 Olive Ridley turtle eggs** on **Hope Island** in Kakinada Bay, Andhra Pradesh. On **March 26, 2026**, local district officials personally oversaw the release of 585 hatchlings into the sea, marking a successful peak in the current nesting season.

Note

Hope Island serves as one of the most critical and safe nesting grounds for **Olive Ridley turtles (ORTs)** in Andhra Pradesh. For the 2025-26 season, authorities collected **19,858 eggs** from **174 nests** across the island. These eggs are protected using the **in-situ conservation** method, where they are monitored in their natural environment to ensure high hatching success rates. This initiative is vital for maintaining the marine ecological balance, as turtles help regulate jellyfish populations and maintain healthy seagrass beds.

Olive Ridley Turtles: Profile

- **Smallest in the World:** They are the world's smallest and most abundant sea turtles, recognized by their heart-shaped, olive-green carapace.
- **Habitat:** They inhabit tropical waters across the Pacific, Indian, and Atlantic Oceans.
- **Arribada:** They are famous for their unique **synchronized mass nesting**, where thousands of females come ashore simultaneously to lay eggs.
- **Nesting Timeline:** They typically arrive on Indian coasts between **November and December**, with the nesting and hatching process continuing until **April–May**.

Key Conservation Sites in India

State	Primary Nesting Sites
Odisha	**Gahirmatha** (world's largest), Rushikulya, and Devi River mouth.
Andhra Pradesh	**Hope Island (Kakinada)**, Visakhapatnam, and Krishna estuary.
Others	Andaman and Nicobar Islands, and parts of the Maharashtra and Tamil Nadu coasts.

Legal Status and Protection

- **Wildlife Protection Act, 1972:** Listed under **Schedule I**, providing them the highest level of legal protection in India.
- **IUCN Red List:** Classified as **Vulnerable**.
- **CITES:** Listed in **Appendix I**, which strictly prohibits international trade in turtle products.
- **Operation Olivia:** An annual mission by the **Indian Coast Guard** (active since the early 1980s) that utilizes aircraft and patrol vessels to enforce fishing bans near nesting sites from November to May.

Major Threats

1. **Accidental Bycatch:** The single largest cause of mortality is turtles getting trapped in **trawl and gill nets**.
2. **Illegal Poaching:** Demand for turtle meat and eggs in local and international black markets.
3. **Coastal Degradation:** Lighting from beach resorts (which disorients hatchlings), sand mining, and plastic pollution.
4. **Predation:** Eggs are often destroyed by feral dogs, pigs, and birds if not protected by forest officials.

About Coringa Wildlife Sanctuary

- **Location:** Situated in the **Godavari estuary** near Kakinada, Andhra Pradesh.

- **Mangrove Heritage:** It is home to the **second-largest stretch of mangrove forests** in India (after the Sundarbans).
- **Biodiversity:** Apart from turtles, it supports endangered species like the **smooth-coated otter**, the **fishing cat**, and the **critically endangered white-backed vulture**.
- **Ecological Role:** The mangroves act as a natural barrier against storm surges and coastal erosion, while the 18-km long **sand spit** on the northeastern side provides the perfect secluded environment for the Olive Ridleys.

Conclusion

The success on **Hope Island in 2026** demonstrates that localized **in-situ conservation**, supported by district administration and forest authorities, can effectively stabilize vulnerable species populations. As the 2026 season concludes in May, the focus will shift toward satellite tagging and community-led awareness programs to ensure that the "Gate of Hope" remains open for future generations of these ancient mariners.

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Geography

Nor'wester Storms : Pre-Monsoon Atmospheric Dynamics

Why in News?

In early **April 2026**, a severe **Nor'wester storm** struck Odisha's Mayurbhanj district, leaving a trail of destruction including uprooted trees, toppled electricity poles, and extensive damage to thatched houses. This event marks the onset of the pre-monsoon storm season in Eastern India, characterized by sudden, high-intensity weather disturbances.

What are Nor'westers?

- **Definition:** Intense, short-lived thunderstorms driven by convection that occur across Eastern and Northeastern India.
- **Timing:** They typically strike during the **pre-monsoon** months (**April to June**), usually in the late afternoon or evening.
- **Direction:** They originate over the **Chota Nagpur Plateau** and travel from the **northwest towards the southeast**, giving them the name "Nor'wester."
- **Nomenclature:**
    - **Kalbaisakhi (Bengal):** "Calamity of the month of Baisakh."
    - **Bordoisila (Assam):** Named after a "fierce, speedy goddess."

Formation and Dynamics

1. **Heating:** Intense daytime heating over the Chota Nagpur Plateau creates a **low-pressure zone**.
2. **Moisture Inflow:** This draws in warm, moist air from the **Bay of Bengal**.
3. **Interaction:** The moist air meets cool, dry air from the northwest, creating extreme atmospheric instability and high **CAPE** (Convective Available Potential Energy).
4. **Cloud Formation:** This results in the rapid vertical development of massive **Cumulonimbus clouds**, leading to sudden gales and torrential rain.

Socio-Economic Impact of Nor'westers

Significance (Positives)	Impacts (Negatives)
Heat Relief: Provides a sharp temperature drop, offering respite from the scorching summer heat.	**Structural Damage:** Gale-force winds (>100 km/h) destroy *kutcha* houses and power infrastructure.
Agricultural Boon: Critical for watering dry-season crops like **Tea** (Assam) and **Paddy/Jute** (Bengal).	**Crop Loss:** Heavy hailstorms can devastate ready-to-harvest **Mango** orchards and litchis.
Water Replenishment: Refills ponds and local water bodies ahead of the peak dry season.	**Casualties:** Frequent lightning strikes and falling trees lead to loss of human and animal life.

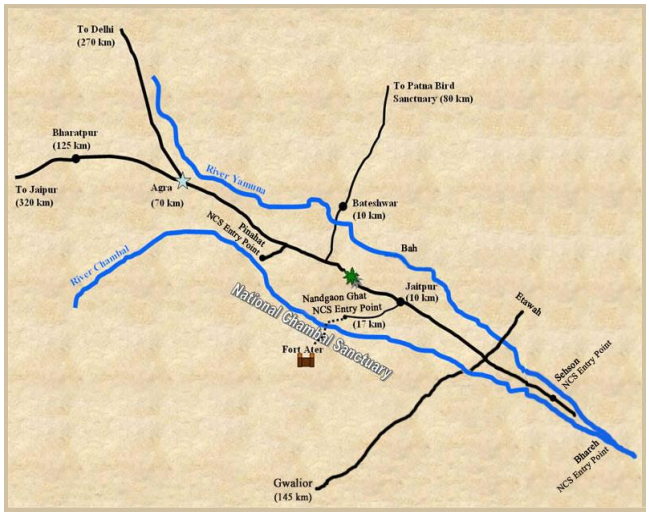
Local Winds of India and Their Influence

Local Wind	Region(s)	Season	Socio-Economic Influence
Loo	Northern India (**UP**, Punjab, Rajasthan)	May–June	Causes **heatstroke**; reduces labor productivity; aids in winnowing grains.
Mango Showers	Kerala, Karnataka	April–May	Essential for the **ripening of mangoes**; signals monsoon onset.
Blossom Showers	Kerala	March–May	Triggers the **flowering of coffee**; vital for coffee plantations.
Aandhi	NW India (**UP**, Rajasthan)	May–June	Violent dust storms that reduce visibility and cause soil erosion.
Elephanta	Malabar Coast	Sept–Oct	Moist winds that help in the final stages of the **Kharif crop**.

Conclusion

While Nor'westers are essential for the ecology and agriculture of Eastern India, their violent nature poses a recurring threat to life and property. As global temperatures rise, the intensity of these convective storms is projected to increase, necessitating better **early warning systems** (like the *Damini* app for lightning) and resilient rural infrastructure.

Supreme Court Intervenes in National Chambal Sanctuary (2026)



Why in News?

On **March 13, 2026**, the **Supreme Court of India** took **suo motu cognisance** of rampant and well-organized **illegal sand mining** in the **National Chambal Sanctuary**. In a follow-up hearing on **March 20, 2026**, a Bench of Justices Vikram Nath and Sandeep Mehta warned that state officials from Rajasthan, Madhya Pradesh, and Uttar Pradesh could be held **"vicariously liable"** for aiding the destruction of this fragile ecosystem through "lethargy and inaction."

Note :

The Supreme Court expressed deep concern over media reports showing that even areas where gharials were recently released by State Chief Ministers have been subjected to illegal mining. The court noted that the **"sand mafia"** is forcing the critically endangered gharials to relocate from their natural nesting sites. To address this, the Court has impleaded the Principal Secretaries and DGPs of all three states and sought assistance from the **Centrally Empowered Committee (CEC)**.

National Chambal Sanctuary (NCS)

- **About:** Also known as the **National Chambal Gharial Wildlife Sanctuary**, it is India's only **tri-state protected area**, co-administered by Rajasthan, Madhya Pradesh, and Uttar Pradesh.
- **Extent:** Spans approximately **5,400 sq km** along a **600 km stretch** of the 960-km long Chambal River.
- **Ecological Uniqueness:** The river is one of India's cleanest, featuring a **lotic (flowing water) ecosystem** of deep channels, sandbanks, and the famous **Chambal ravines (beehad)**.
- **Biodiversity:** * Harbors **90%** of the world's remaining wild **Gharial** population.
    - Home to the **Endangered Ganges River Dolphin**.
    - Other key species: Red-crowned roof turtle, Smooth-coated otter, Marsh crocodile (Mugger), and over 330 bird species like the **Indian Skimmer**.

Key Observations of the Supreme Court (March 2026)

- **Official Liability:** The Court observed that officials from the Forest, Mining, Water Resources, and Police departments could face penal consequences under the **Wildlife Protection Act** and **Environment Protection Act** for failing to stop the mining.

- **Denotification Concerns:** The Court noted that the **Rajasthan government** recently (January 2026) approved the denotification of **732 hectares** from the sanctuary for "boundary rationalisation," a move experts fear could intensify mining pressure.
- **Relocation Crisis:** Due to the destruction of sandbanks—which are essential for nesting and basking—gharials are being forced into less suitable habitats, threatening decades of conservation gains under **Project Crocodile (1975)**.

Threats and Challenges

- **The "Sand Mafia":** Highly organized, often armed networks that operate with local administrative collusion.
- **Habitat Degradation:** Sand mining destabilizes riverbeds, alters natural water flow, and destroys the specific sand-nesting sites required by gharials and turtles.
- **Water Extraction:** Excessive lifting of water for agriculture reduces the river's depth, further compressing the habitat for dolphins and crocodiles.

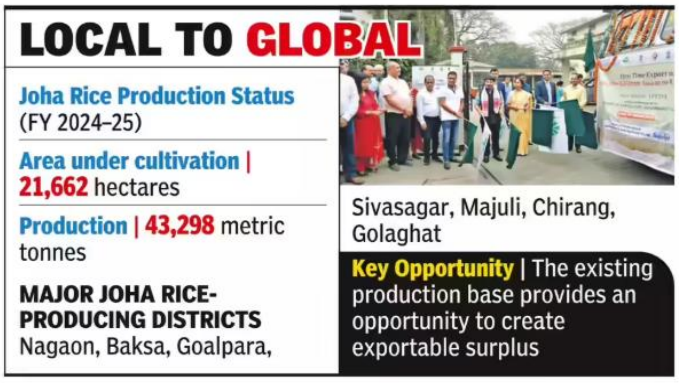
Conservation Status & Recognitions

- **Important Bird Area (IBA):** Vital for migratory and resident riverine birds.
- **Proposed Status:** It is a proposed **Ramsar Site** and a candidate for **UNESCO World Heritage** status.
- **IUCN Category:** Classified as a **Category IV** protected area (Habitat/Species Management Area).

Conclusion

The Supreme Court's intervention marks a critical moment for the Chambal River. By shifting the focus toward **official accountability** and the "vicarious liability" of the state, the judiciary aims to break the political-administrative nexus that has allowed the sand mafia to thrive. The next hearing is scheduled for **April 2, 2026**, where specific directions for a court-monitored enforcement mechanism are expected.

First Export of GI-Tagged Joha Rice to UK and Italy (2026)



Why in News?

On **March 12, 2026**, the **Agricultural and Processed Food Products Export Development Authority (APEDA)** facilitated the first commercial export consignment of **Geographical Indication (GI)-tagged Joha Rice** from Assam to the **United Kingdom** and **Italy**. The shipment, comprising **25 metric tonnes**, marks a significant milestone in bringing Assam's premium aromatic rice to the European market.

Note :

Joha rice, an indigenous aromatic variety from Assam, was granted a **GI tag in 2017**. Known for its unique fragrance and nutraceutical properties, it is cultivated in major clusters such as Nagaon, Baksa, and Goalpara. While the rice is nutritionally superior to many conventional varieties, it faces challenges of **low productivity** (approx. 1–1.5 tonnes per hectare), which the government aims to address through global market expansion and better price realization for farmers.

Profile: Joha Rice ("Scented Gold")

- **About:** An aromatic, short-grain winter paddy (*Sali* crop) exclusive to **Assam** and parts of the Northeast. It has been cultivated in the region for over **600 years**.
- **Aroma:** Known for a mild floral fragrance (comparable to popcorn or sandalwood) caused by the aromatic compound **2-acetyl-1-pyrroline**.
- **Varieties:** Over **20 traditional varieties** exist, including *Kola Joha*, *Keteki Joha*, *Boga Joha*, and *Kunkuni Joha*.

Key Features and Health Benefits

Scientific studies by the **Institute of Advanced Study in Science and Technology (IASST)** have confirmed its status as a "nutraceutical":

- **Anti-Diabetic Properties:** Effectively helps in **lowering blood glucose levels** and preventing the onset of Type-2 diabetes.
- **Essential Fatty Acids:** Contains **Omega-6 (linoleic acid)** and **Omega-3 (linolenic acid)**. It possesses a more balanced Omega-6 to Omega-3 ratio compared to common non-scented rice.
- **Cardio-Protective:** Rich in antioxidants, flavonoids, and phenolic compounds like **oryzanol** and **ferulic acid**, which support heart health.
- **Nutritional Density:** High in protein and amino acids while being naturally low in sodium and cholesterol-free.

Export and Production Logistics (2025–26)

- **Production Scale:** Cultivated across roughly **21,662 hectares** in Assam with an annual production of approximately **43,298 metric tonnes** for FY 2024–25.
- **Major Clusters:** Nagaon, Baksa, Goalpara, Sivasagar, Majuli, Chirang, and Golaghat.
- **The Consignment:** Dispatched from Guwahati, the 25 MT shipment was processed and packed by *Pratik Agro Food Processing* and exported by *Safe Agritrade Pvt. Ltd.*
- **Global Footprint:** Prior to this large shipment, APEDA facilitated smaller pilot exports to **Vietnam** (1 MT) and various Middle Eastern countries including **Saudi Arabia, Qatar, and Kuwait**.

Challenges to Sustainability

- **Low Yield:** Traditional Joha varieties have significantly lower productivity compared to high-yielding hybrid varieties, leading some farmers to switch crops.
- **Extinction Risk:** Without commercial viability and global demand, several rare sub-varieties of Joha are at risk of disappearing.
- **Market Awareness:** Unlike Basmati, Joha rice is still establishing its brand identity in international premium "fine-dining" segments.

Conclusion

The export to the UK and Italy is a strategic step toward ensuring that "scented gold" remains a viable crop for Assamese farmers. By leveraging its unique health benefits—particularly for diabetes management—the government aims to position Joha rice as a premium functional food in the global health-wellness market.

Kharg Island and Fujairah Attacks : Strategic Oil Hubs Under Fire

Why in News?

Geopolitical escalation in **West Asia** has reached a critical tipping point in **March 2026** following reported **U.S. bombing strikes** on Iran's **Kharg Island**, the nation's primary oil export terminal. In a swift retaliation, Iran launched drone and missile strikes against oil facilities in **Fujairah**, United Arab Emirates (UAE). These attacks on two of the world's most vital energy nodes have triggered the largest oil supply disruption in history, with Brent crude prices surging past **125 USD per barrel**.

Note :

The conflict, which entered its third week in mid-March, centers on the **Strait of Hormuz crisis**. After Iran effectively halted shipping through the strait, the U.S. carried out precision strikes on Kharg Island to "obliterate" military assets while officially aiming to preserve oil infrastructure. Iran responded by targeting Fujairah, a strategic hub that allows the UAE to bypass the Hormuz chokepoint. The attacks have forced major energy producers to declare *force majeure* and have suspended operations at several global bunkering and storage facilities.

Kharg Island: Iran's "Forbidden" Energy Vital

- **Location:** A small Iranian island in the **Persian Gulf**, situated about 25 km off the southwestern coast. Access is strictly controlled by the **Islamic Revolutionary Guard Corps (IRGC)**.
- **Strategic Role:** It is the "lungs" of the Iranian economy, handling nearly **90%** of the country's crude oil exports (approx. 1.3 to 1.6 million barrels per day).
- **Infrastructure:** Connected via subsea pipelines to massive mainland fields like Ahvaz and Gachsaran. It features deep-water berths capable of hosting supertankers and storage for **30 million barrels**.
- **Historical Context:** Known historically as the "orphan pearl," it served as a trade link between **India and Iraq** as early as the 10th century before being fortified by the Dutch and British.

Fujairah: The UAE's Strategic Bypass

- **Location:** One of the seven emirates of the UAE, uniquely positioned on the **Gulf of Oman**. It is the only emirate without a Persian Gulf coastline.
- **The Bypass Mechanism:** The **Habshan–Fujairah pipeline** (ADCOP) is critical for global energy security, as it allows UAE crude to reach international markets without passing through the vulnerable **Strait of Hormuz**.
- **Global Hub:** The Port of Fujairah is the world's **second-largest ship bunkering hub** (after Singapore) and a top-tier oil storage destination.
- **2026 Impact:** Despite Iranian drone strikes causing fires in the industrial zone, the UAE has attempted to surge exports through Fujairah to nearly **1.9 million barrels per day** to compensate for the Hormuz closure.

Implications for Global Energy Markets

- **Supply Shock:** The disruption of flows through the Persian Gulf and the damage to storage hubs have removed millions of barrels from the daily global supply.
- **Shipping Disruption:** Major container companies (Maersk, Hapag-Lloyd) have suspended transits through the region, rerouting ships around **Africa's Cape of Good Hope**, adding weeks to transit times.
- **Strategic Stalemate:** The U.S. maintains that its strikes on Kharg targeted naval mine storage and missile bunkers, while Iran claims the UAE is a "legitimate target" for hosting U.S. assets used in the strikes.

Conclusion

The attacks on Kharg Island and Fujairah represent a direct assault on the world's energy "pressure valves." For India and other major importers, the crisis underscores the extreme vulnerability of energy supply chains to regional warfare. The focus now shifts to whether diplomatic intervention can prevent a total "force majeure" across the remaining Gulf producers or if the conflict will lead to a prolonged global economic recession.

World Water Day Conclave 2026 : Toward a Circular Water Economy

Why in News?

The **Ministry of Jal Shakti** hosted the **World Water Day Conclave 2026** on **March 23, 2026**, in New Delhi. Organized to mark **World Water Day (March 22)**, the event carried the national theme **"Industry for Water,"** signaling a major policy shift toward a **circular water economy**. The conclave served as a platform to integrate industrial accountability with advanced data governance to address India's plummeting per-capita water availability.

Note :

The 2026 Conclave transitioned India's water strategy from "extraction" to "stewardship." Key outcomes included a **Joint Industry Declaration** by major associations (CII, FICCI, ASSOCHAM) to reduce their water footprint by 50% by 2030. The government also released the **National Water Data Policy 2026** and several landmark census reports to enable precision water governance. By focusing on **glacier monitoring** and **wastewater recycling**, India aims to decouple economic growth from water depletion.

Key Highlights of the 2026 Conclave

- **Circular Water Economy:** Promoted a "Reduce, Reuse, Recycle" model to replace the traditional linear system. The goal is to treat wastewater as a finite resource, ensuring climate resilience.
- **National Water Data Policy 2026:** Launched to create a standardized, transparent data ecosystem for better planning and crisis management.
- **Release of Landmark Censuses:** The Ministry released the **7th Minor Irrigation Census**, the **2nd Census of Water Bodies**, and the first-ever **Census of Springs** and **Major & Medium Irrigation Projects**.
- **Joint Industry Declaration:** Leading industrial bodies committed to:
    - Regular **Water Audits** by 2027.
    - Achieving **Zero Liquid Discharge (ZLD)** and becoming "Water Positive" by 2030.
    - Reducing corporate water footprints by **50% by 2030**.
- **Glacial Monitoring Framework:** In partnership with **ISRO-NRSC**, the conclave emphasized using the **Bhuvan** platform for real-time monitoring of Himalayan glaciers and **Glacial Lake Outburst Floods (GLOF)**.

World Water Day: Global Context

- **About:** Observed annually on **March 22** since 1993 to advocate for the sustainable management of freshwater.
- **Global Theme 2026: "Water and Gender"** (Slogan: *"Where water flows, equality grows"*). It highlights how the water crisis disproportionately affects women, who spend **250 million hours daily** collecting water globally.
- **SDG Alignment:** Directly supports **SDG 6** (Clean Water and Sanitation for all by 2030).

Water Challenges in India (2024–2026)

- **Per-Capita Decline:** India's per-capita water availability has dropped from 5,200 cubic meters (1950) to approximately **1,400–1,500 cubic meters (2024)**, nearing the "scarcity" threshold of 1,000 cubic meters.
- **Groundwater Crisis:** India is the world's largest consumer of groundwater, with nearly **25% of global usage**. States like Punjab and Rajasthan face critical water table declines.
- **Contamination:** Nearly **70% of surface water** is contaminated. High levels of **Arsenic and Fluoride** affect millions, while "Cancer Trains" in Punjab highlight the impact of uranium and pesticide residues.
- **The Himalayan "Third Pole":** Melting glaciers threaten the perennial flow of the Ganga and Indus, posing a long-term threat to Northern India's water security.

Key Water Conservation Initiatives

- **Government Schemes: Jal Jeevan Mission 2.0** (urban focus), **Atal Bhujal Yojana** (groundwater), and **Jal Sanchay Jan Bhagidari** (community participation).
- **Technological Tools:** Use of **AI, IoT, and SCADA**-enabled systems for real-time monitoring of leakage and industrial discharge.
- **Traditional Wisdom:** Reviving ancient systems like **Ahar-Pynes** (Bihar), **Johads** (Rajasthan), and **Baolis** (Delhi) to recharge aquifers naturally.

Measures to Strengthen Water Security

1. **Agricultural Reform:** Shifting from flood irrigation to **micro-irrigation** (drip/sprinkler) for water-intensive crops like paddy and sugarcane.
2. **Water Credits:** Introducing a system similar to Carbon Credits to allow industries to

trade "surplus savings" and incentivize conservation.

3. **Urban Decentralization:** Implementing small-scale **Sewerage Treatment Plants (STP)** and **dual-piping systems** in new apartments to reuse greywater.
4. **Jan Andolan:** Strengthening the **"Catch the Rain"** campaign to make water conservation a household responsibility.

Conclusion

The **World Water Day Conclave 2026** marks a definitive turn toward **precision water governance**. By combining industrial accountability with the first-ever comprehensive census of springs and irrigation projects, India is building a data-rich foundation to combat its water crisis. The shift to a **circular water economy** is no longer a choice but a necessity for ensuring that India's growth remains sustainable and inclusive.

Resumption of India-China Border Trade via Lipulekh Pass (2026)

Why in News?

Border trade between **India and China** through the **Lipulekh Pass** in Uttarakhand's Pithoragarh district is scheduled to resume in **June 2026** after a six-year hiatus. The trade was suspended in 2019 due to the COVID-19 pandemic and subsequent bilateral tensions. While the reopening marks a diplomatic thaw between New Delhi and Beijing, it has reignited territorial friction with **Nepal**, which continues to claim the Lipulekh-Kalapani region as its sovereign territory.

Note

The decision to reopen the pass follows a landmark **August 2025 agreement** to restore three traditional Himalayan trade routes (**Lipulekh, Shipki La, and Nathu La**). This new phase of trade will be significantly more efficient due to the completion of the **motorable road to Lipulekh** in 2020, replacing the traditional reliance on mules and sheep. However, the move faces a diplomatic challenge from Kathmandu, which argues that the tri-junction area falls within its borders under the 1816 Treaty of Sugauli.

Key Highlights of the 2026 Trade Cycle

- **Infrastructure Leap:** For the first time, trade will benefit from the **80-km Ghatiabagar-Lipulekh motorable road**, drastically reducing logistics costs and travel time for Kumaoni and Tibetan traders.
- **Economic Impact:** The resumption is expected to revive the local economy of the **Vyas Valley**, which historically traded items like wool, jaggery, and electronic goods.
- **Strategic Tri-junction:** Lipulekh is a high-altitude pass (5,200m) in the Kumaon region, serving as the first Indian border post opened for trade with China in **1992**.
- **Religious Significance:** The pass remains a primary gateway for the **Kailash Mansarovar Yatra**, holding immense spiritual value for pilgrims.

The Territorial Dispute with Nepal

The reopening of the pass has brought the **Kalapani-Lipulekh-Limpiyadhura** dispute back to the forefront of South Asian politics:

- **The Treaty of Sugauli (1816):** Signed between the East India Company and the Kingdom of Nepal, it established the **Kali River** (Mahakali) as Nepal's western boundary.
- **The Origin of the Kali River: * Nepal's Claim:** Kathmandu asserts the river originates at **Limpiyadhura**, placing the entire triangular landmass (including Lipulekh) within Nepal. In 2020, Nepal issued a **new political map** reflecting this claim.
    - **India's Stand:** New Delhi maintains the river originates from springs near **Kalapani village**, placing the pass firmly within the Pithoragarh district of Uttarakhand. India views the area as strategically vital for monitoring the Himalayan frontier.

India-China Border Trade Routes

Pass Name	Location	Opened for Trade
Lipulekh	Uttarakhand	1992 (First post opened post-1962)
Shipki La	Himachal Pradesh	1994
Nathu La	Sikkim	2006

Strategic and Diplomatic Implications

1. **Techno-Diplomacy:** The use of the new motorable road signals India's intent to strengthen its border infrastructure despite external protests.
2. **Neighborhood First vs. Regional Claims:** Balancing trade with China while managing the "Cartographic War" with Nepal remains a major challenge for the Ministry of External Affairs in 2026.
3. **Security Monitoring:** The pass is a critical vantage point for the Indian Army to oversee the Tibetan plateau, making its operational status a matter of national security.

Conclusion

The June 2026 reopening of the **Lipulekh Pass** is a double-edged sword: it promises a return to economic normalcy for Himalayan border communities but tests the resilience of India's relations with its "brotherly" neighbor, Nepal. As trucks replace mules on these ancient paths, the success of this trade route will depend as much on **border tranquility** as it does on the quality of the new asphalt.

Dwarka Basin : Miocene Fossils and Submerged Heritage (2026)

Why in News?

In **March 2026**, researchers uncovered extensive fossil beds in the **Dwarka Basin** that offer a rare glimpse into the **early Miocene epoch** (23 million to 5.3 million years ago). The discovery of **42 species of snails** (gastropods), including four newly identified species like *Cerithium bardhani*, suggests that this region was a tropical, nutrient-dense marine environment millions of years ago. These findings are reshaping our understanding of the **Middle Miocene Climatic Optimum (MMCO)** and its impact on the Indian subcontinent's western margin.

Note

The Dwarka Basin, located off the **Saurashtra Peninsula** in Gujarat, is a unique intersection of prehistoric geology and ancient archaeology. While paleontologists study its **Miocene-era** sedimentary layers—rich in foraminifera and gastropods—archaeologists from the **ASI** are currently conducting "deeper digs" (as of **January-March 2026**) to trace the submerged remains of the legendary city associated with **Lord Krishna**. The basin is also a focal point for the energy sector, with exploration ongoing for **oil and gas deposits** trapped beneath the thick **Deccan Trap (volcanic rock)** layers.

The Miocene Fossil Discovery (2026)

- **Biological Markers:** Identified **42 species of snails**, primarily turritelline-dominated assemblages. The presence of specific **foraminifera** (tiny shell-bearing organisms) confirms a warm, well-oxygenated shelf environment.
- **New Species:** Four new species were described: *Cerithium bardhani*, *Clelandella saurashtraensis*, *Jujubinus dwarkaensis*, and *Nassarius anisi*.
- **Climatic Insights:** The fossils provide evidence of the **Middle Miocene Climatic Optimum**, showing how ancient global warming influenced faunal evolution and migration from the Tethys Region toward the Indo-Pacific.

Archaeological Heritage: The Submerged City

The Dwarka Basin is traditionally revered as the site of the sunken kingdom of **Lord Krishna**, which according to the **Mahabharata**, was reclaimed by the Arabian Sea.

- **Ongoing Excavations (2026):** The **Archaeological Survey of India (ASI)** launched an extensive new phase of land and underwater exploration in **early 2026**. This mission uses **ground-penetrating radar**

and advanced marine survey tools to examine the mouth of the **Gomti River** and the **Vyas Valley**.

- **Key Findings Since the 1980s:**
    - **Stone Anchors:** Over **120 anchors** (triangular and grapnel types) confirm the site was a major protohistoric port.
    - **Structural Remains:** Massive sandstone blocks, wall-like formations, and semicircular structures found at depths of 20-40 meters.
    - **Artifacts:** Pottery shards, iron ingots, copper objects, and a famous **seal** depicting a three-headed animal.
- **Timeline:** Late archaeologist **Dr. S.R. Rao** dated the remains to **1500–2000 BCE**, aligning with the late Harappan or post-Harappan transition.

Modern Significance and Tourism

- **Submarine Tourism:** The **Gujarat Government** has officially planned the launch of **submarine services** (announced for 2024-2026) to allow pilgrims and tourists to view the submerged archaeological ruins firsthand.
- **Spiritual Hub:** Dwarka is one of the **Char Dham** (four sacred pilgrimage sites) and houses the **Dwarkadhish Temple** (Jagat Mandir) and the **Sharada Peeth** (established by Adi Shankaracharya).
- **Industrial Interest:** Energy companies are intensifying seismic surveys in the basin to locate **hydrocarbon "plays"** hidden under the volcanic basalt of the Deccan Traps.

Comparison: Geological vs. Archaeological Layers

Layer	Period	Key Findings
Sedimentary (Top)	**Holocene (Ancient-Present)**	Submerged walls, stone anchors, Harappan-style pottery.
Gaj Formation	**Early Miocene (23–16 Ma)**	42 snail species, foraminifera, evidence of tropical warming.
Basement/Trap	**Cretaceous-Paleocene**	**Deccan Volcanic Rocks;** potential oil and gas targets beneath.

Conclusion

The **Dwarka Basin** is a multi-layered archive of India's past. In 2026, it serves as a bridge between **Miocene paleontology** and **Vedic archaeology**. Whether viewed as a site of significant oil reserves, a window into prehistoric climate change, or the physical evidence of a legendary era, the basin remains one of the most strategically and culturally vital underwater sites in the world.

Bab el-Mandeb Strait : Strategic Crisis in West Asia

Why in News?

Amidst the **escalating West Asia conflict** in early **2026**, Iran and its aligned **Houthi forces** in Yemen have threatened to weaponize the **Bab el-Mandeb Strait**. This follows a month of active hostilities that began in late February 2026. As of now, the Houthis have claimed responsibility for multiple missile attacks targeting "sensitive sites," effectively turning the Red Sea into a secondary front alongside the already volatile **Strait of Hormuz**.

Note

The Bab el-Mandeb, or the **"Gate of Tears,"** is a primary maritime chokepoint connecting the Indian Ocean to the Mediterranean via the Suez Canal. With the Strait of Hormuz facing "virtual closure" due to the ongoing war, the Bab el-Mandeb has become even more critical for global energy flows. However, Houthi-led disruptions have forced major shipping lines (Maersk, MSC, Hapag-Lloyd) to abandon the Suez route, opting for the **Cape of Good Hope** reroute, which adds **10–14 days** to transit times and significantly spikes global inflation.

Geographic and Strategic Profile

- **Location:** A narrow strait separating the **Arabian Peninsula** (Yemen) from the **Horn of Africa** (Djibouti and Eritrea).

- **Connectivity:** Links the **Red Sea** in the northwest to the **Gulf of Aden** and the Arabian Sea in the southeast.
- **Dimensions:** Approximately **32 km wide**, split into two channels by **Perim Island** (Yemen).
- **Vulnerability:** Its narrowness allows land-based non-state actors (Houthis) to use drones and anti-ship missiles to target commercial vessels from elevated coastal positions like **Jabal Ras**.

Global Economic Impact (2026 Status)

- **Trade Volume:** Typically handles **10-12% of global trade** and 30% of container traffic.
- **Energy Chokepoint:** Vital for Persian Gulf crude oil and **Liquified Natural Gas (LNG)** bound for Europe. In March 2026 alone, nearly **4 million barrels** of oil per day transited the strait—the highest in years—as Saudi Arabia bypassed the blocked Strait of Hormuz via its East-West pipeline to the Red Sea.
- **Rerouting Crisis:** Most Western-flagged vessels are now avoiding the area. Rerouting around South Africa has:
    - Increased transit times by **35-40 days** for India-US/Europe routes.
    - Doubled **War Risk Insurance** premiums.
    - Impacted nearly **70% of India's exports**, leading the **RBI** to extend export credit periods to 450 days to support distressed traders.

Geopolitical Dynamics

- **Iran's "Second Strait" Strategy:** Analysts view the threat to Bab el-Mandeb as Tehran's way of exerting pressure beyond the Persian Gulf. By utilizing the Houthis, Iran can disrupt European energy supplies without a direct naval confrontation.
- **The "Hormuz Deadline":** The U.S. has reportedly given Iran until **April 6, 2026**, to reopen the Strait of Hormuz, failing which regional tensions are expected to peak further.
- **Military Buildup:** Approximately **2,500 U.S. Marines** arrived in the region in late March to bolster maritime security, while Israel has targeted Iranian naval production facilities to curb the supply of advanced sea-mines and drones.

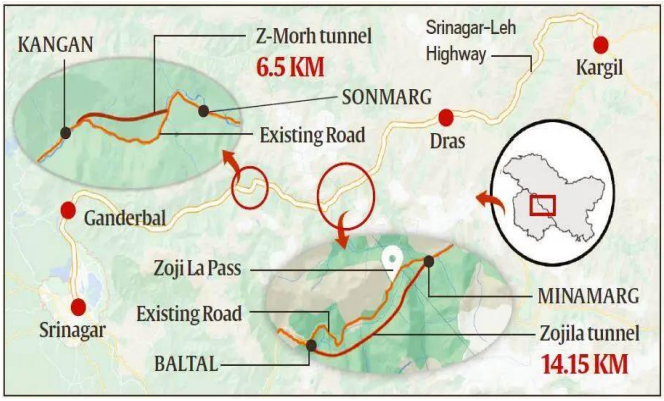
Comparison: Bab el-Mandeb vs. Strait of Hormuz

Feature	Bab el-Mandeb	Strait of Hormuz
Primary Link	Red Sea to Indian Ocean	Persian Gulf to Gulf of Oman
Key Risk	Houthi drone/missile attacks	Direct Iranian Naval blockade
Impact	Threatens Asia-Europe trade/Suez	Threatens global oil supply/Asia
2026 Status	**High Risk** (Self-imposed carrier avoidance)	**Critical** (Effectively closed to Western ships)

Conclusion

In **April 2026**, the Bab el-Mandeb is no longer just a "Gate of Tears" for ancient sailors but a focal point of **"Conflictual Maritime Federalism."** The strait's stability is now inextricably linked to the broader Iran-Israel-US war. For India, the disruption is a dual blow to its **energy security** and **export competitiveness**, prompting a faster push toward the **India-Middle East-Europe Economic Corridor (IMEC)** as a long-term strategic alternative to vulnerable maritime chokepoints.

Zojila Pass : Avalanche Crisis and the Quest for All-Weather Connectivity (2026)



Why in News?

In **early 2026**, a devastating snow avalanche struck near the **Zojila Pass**, resulting in multiple fatalities and injuries. The incident has reignited a critical debate over the safety protocols for the **Srinagar-Leh National Highway (NH-1)**. While the pass achieved a historic milestone by remaining operational throughout the **2025-26 winter season**—a first in its history—this tragic event underscores the inherent risks of maintaining high-altitude corridors during peak "avalanche months."

Note

Zojila Pass is a strategic lifeline connecting the **Kashmir Valley to Ladakh**. Situated at an elevation of **11,575 feet**, it traditionally shuts down for six months due to heavy snow. An **avalanche**—a rapid, gravity-driven slide of snow and debris—typically occurs on slopes of **30°–45°**, and Zojila's topography makes it a high-risk zone. To permanently solve this isolation and safety crisis, the government is fast-tracking the **Zojila Tunnel**, which will be India's longest road tunnel upon completion.

Geographic and Strategic Profile

- **Location:** Situated in the **Great Himalayan Range**, it serves as the natural gateway between the lush Kashmir Valley and the arid, high-altitude desert of **Dras and Kargil**.
- **Connectivity:** It is the primary link on the **434 km Srinagar-Leh road**. Along with the Manali-Leh route, it is one of only two land arteries connecting Ladakh to the rest of India.
- **Climate Defiance (2025-26):** For the first time, advanced snow-clearance machinery and round-the-clock operational planning by the **Border Roads Organization (BRO)** kept the pass open during the mid-winter months of 2025-26.

Historical and Military Significance

- **Operation Bison (1948):** The pass was a major battleground during the first Indo-Pak war. In a feat of military engineering, the Indian Army deployed **Stuart light tanks** at this extreme altitude for the first time in history to recapture the pass from Pakistani raiders.
- **Border Security:** The pass is vital for the rapid movement of troops and heavy equipment to the **Line of Actual Control (LAC)** facing China and the **Line of Control (LoC)** facing Pakistan.

The Solution: Zojila Tunnel Project

To eliminate the "Gate of Tears" reputation of the pass during winters, the **Zojila Tunnel** is under construction:

Feature	Details (2026 Project Status)
Length	**14.15 km** (India's longest road tunnel).
Type	Asia's longest **bi-directional** tunnel.
Time Saved	Reduces travel time from **3.5 hours to 15 minutes**.
Strategic Goal	Provides **365-day all-weather connectivity** to Ladakh.
Completion	Targeted for full operationality by **late 2026/early 2027**.

Understanding Avalanches at Zojila

- **Triggers:** Structural instability in snow layers, fresh heavy snowfall (loading), or sudden temperature rises (melting/lubrication).
- **Slope Factor:** Most dangerous on slopes between **30° and 45°**. Zojila's steep "funnel" topography often traps snow, leading to "powder snow avalanches" that can travel at speeds exceeding **300 km/h**.
- **2026 Incident:** High-velocity winds and unseasonal warming in March 2026 were cited as the primary triggers for the recent slide that caught several vehicles in the "Captain Morh" sector.

Conclusion

The **Zojila Pass** remains one of the most difficult terrestrial challenges in the world. While the record-breaking opening during the **2025-26 winter** proved India's growing engineering prowess, the recent avalanche serves as a sobering reminder of nature's volatility. The completion of the **Zojila Tunnel** later this year is not just an infrastructure goal but a humanitarian and strategic necessity to ensure that no more lives are lost to the "snow-slides" of the Great Himalayas.

EDITORIALS

Crux of The Hindu & Indian Express

Geography

Agri-Photovoltaics (AgriPV) : Integrating Solar Energy with Sustainable Farming

Why in News?

The **Union Budget 2026–27** has earmarked **5,000 crore** for the **PM-KUSUM scheme**, nearly doubling its previous funding. This surge is specifically designed to

accelerate **Agri-Photovoltaics (AgriPV)**, a dual-use land strategy that addresses the competition between renewable energy expansion and national food security. By late March 2026, the government also initiated consultations for a dedicated **10-GW National Agri-photovoltaics Mission** under the upgraded PM-KUSUM 2.0 framework.

Note :

Agri-Photovoltaics (AgriPV) is a transformative approach where solar panels and crops share the same land. This "co-generation" model helps India pursue its **300 GW solar target** by 2030 while protecting its agrarian base. While early experiments at **ICAR-CAZRI** and **BAIF** have shown a **40% increase in land productivity** (Land Equivalent Ratio of 1.41), wide-scale adoption is currently hampered by high installation costs and a lack of standardized regional guidelines.

Understanding AgriPV: The Symbiotic Model

- **The Concept:** Unlike traditional solar parks that require clearing land, AgriPV elevates or spaces panels to allow farming underneath.
- **Mutual Benefits:** * **For the Soil:** Panels act as a canopy, lowering **evapotranspiration** and helping the ground retain moisture longer—critical for arid states like Rajasthan.
    - **For the Technology:** Natural moisture released by plants (**transpiration**) provides a cooling effect for the solar modules, enhancing their electricity generation efficiency.

Innovative System Designs

- **Stilt-Mounted (Elevated):** Panels are placed 2–3.5 meters high, ensuring enough clearance for tractors and harvesters.
- **Vertical Bifacial:** Double-sided panels are installed like fences, capturing morning and evening sun while leaving the maximum ground area for sun-loving crops.
- **Inter-spatial Layouts:** Standard ground panels are used, but with wide aisles for "sun-rows" where crops like tomatoes and onions thrive.
- **Greenhouse Solar:** Semi-transparent panels are built into the roofs of polyhouses, providing power for climate control and high-value horticulture.

Regional Crop Matrices (2026 Observations)

State	Successful Crop Combinations
Maharashtra & Karnataka	Ragi, Jowar, Brinjal, and Grapes
Madhya Pradesh	Turmeric, Ginger, Onion, and Tulsi
Rajasthan & Gujarat	Cumin, Moth bean, and Fodder crops

Strategic Advantages for India

- **Solving "Food vs. Fuel":** With over half of India's geography dedicated to farming, AgriPV prevents the loss of fertile land to energy projects.
- **Economic Cushion:** Farmers can save on irrigation costs by replacing diesel with solar and earn **secondary income** by selling extra units to DISCOMs.
- **Rural Industrialization:** Generated power can directly run local **cold chains**, reducing post-harvest wastage in remote clusters.
- **Decarbonization:** Contributes to the national goal of **Net-Zero emissions by 2070** without compromising the 4% agricultural growth target.

Major Implementation Hurdles

1. **Investment Gap:** Elevated structures require more steel and specialized engineering, making them **significantly pricier** than ground-mounted arrays.
2. **Design Risks:** If panels are too low or too dense, "shadow stress" can stunt crop growth and lead to yield losses.
3. **Policy Ambiguity:** There is currently no uniform national rule on **dual-use land classification**, leading to confusion over property taxes and grid access.
4. **Operational Maintenance:** Panel cleaning requires careful water management to avoid soil erosion or over-watering the crops below.

The Way Forward: PM-KUSUM 2.0

To move from the current **50 pilot projects** to a national movement, the 2026 roadmap suggests:

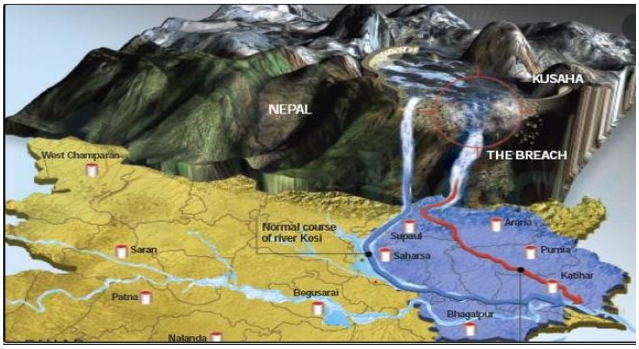
- **Viability Gap Funding (VGF):** Direct subsidies to cover the extra cost of elevated mounting structures.
- **KVK Integration:** Using **Krishi Vigyan Kendras** to provide farmers with hands-on training for managing "solar-shaded" farms.

- **Standardized Tariffs:** Setting a fixed, attractive price for electricity generated from dual-use lands to ensure investor confidence.

Conclusion

AgriPV represents a "win-win" for India's future. By turning traditional farms into **energy-agriculture hubs**, the country can secure its energy independence while fortifying its food supply. As the **National Agri-photovoltaics Mission** takes shape in 2026, the focus must remain on scientific precision—matching the right panel height with the right local crop to truly harvest the sun and the soil together.

Kosi River – The "Sorrow of Bihar"



1. Why in News?

- The **Kosi River**, often called the **"Sorrow of Bihar"**, has shifted its course by **more than 100 km in the last 200 years**.
- Because of this shifting river channel and frequent floods, the river causes **large-scale damage to lives, agriculture and infrastructure in Bihar**.

2. Why is the Kosi River Called the "Sorrow of Bihar"?

The river is known for its **frequent and destructive floods**.

Reasons:

- The river **changes its course frequently**
- It carries **heavy sediment (silt)** from the **Himalayas**
- The riverbed becomes unstable during the **monsoon season**

As a result:

- Villages are **washed away**
- Crops and infrastructure are **destroyed**
- **Lakhs of people are displaced**

Due to repeated flood disasters, locals started calling it the **"Sorrow of Bihar."**

3. Origin of the Kosi River

- The **Kosi River** originates in the **Himalayan region of Tibet and Nepal**.
- It is formed by the confluence of three major rivers:
  - **Sun Kosi**
  - **Arun**
  - **Tamur**
- Together they form the **Sapta Kosi System**.

4. Course of the River

Key geographical features of the **Kosi River**:

- Flows through **China (Tibet), Nepal and India**
- A major **tributary of the Ganga River**
- Enters India in **Bihar**
- Finally joins the **Ganga near Katihar district (south of Purnea)**

Total length of the river: **about 724 km**

5. Major Tributaries

The **Kosi river system** includes **seven major tributaries**:

- **Sun Koshi**
- **Tama Koshi**
- **Dudh Koshi**
- **Indravati**
- **Likhu**
- **Arun**
- **Tamur**

These tributaries originate in the **Himalayan mountains**.

6. Major Flood Events

- One of the most severe disasters occurred in **2008**.
- Cause:
  - **Embankment breach near the Nepal border**
- Impact:
  - The river shifted into an **old channel**
  - Nearly **30 lakh people were affected**
  - Large areas of **Bihar were flooded**
- This event showed how **unpredictable the river is**.

7. Why the River Changes its Course

The **Kosi River** is famous for its **shifting channels**.

Main reasons:

- **Heavy silt deposition**
- **Steep Himalayan slopes**
- **Strong monsoon flow**

- **Unstable riverbed**

Over the last **250 years**, the river has shifted **more than 100 km from east to west**.

8. Flood Control Measures

Several steps have been taken to control floods:

- Construction of **Embankments**
- Building of the **Kosi Barrage (near India–Nepal border)**

However, controlling the river remains difficult because of:

- **Heavy sediment load**
- **Strong water current**
- **Changing river channels**

9. A River of Both Fertility and Fear

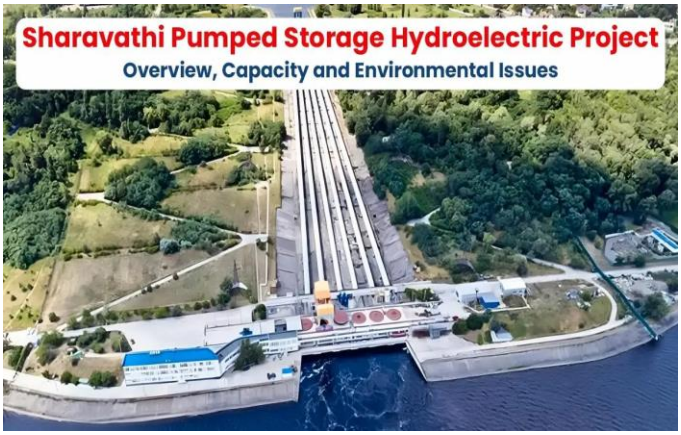
- Despite the floods, the **Kosi River** also brings benefits.
- The river deposits **fertile alluvial soil** across **north Bihar**.
- This soil supports crops like:
  - **Maize (Corn)**
  - Other agricultural crops
- Thus, the river is both:
  - A **lifeline for agriculture**
  - A **major natural disaster source**

Conclusion

The **Kosi River**, known as the **"Sorrow of Bihar,"** is one of the most **unpredictable rivers in India** due to its **frequent floods and shifting course**.

While it causes large-scale destruction, it also provides **fertile soil for agriculture**, making it both a **blessing and a threat** for the people of **North Bihar**.

Karnataka High Court Notice on Sharavathi Pumped Storage Hydroelectric Project



1. Why in News?

- The **Karnataka High Court** issued a notice to the **Central Government and Karnataka State Government** on a **Public Interest Litigation (PIL)** challenging approvals granted for the **₹10,000 crore Sharavathi Pumped Storage Hydroelectric Project**.
- The petition questions the legality of approvals given by:
  - **State Wildlife Board**
  - **Standing Committee of the National Board for Wildlife (NBWL)**
- The project is proposed in **Shivamogga and Uttara Kannada districts of Karnataka**.

2. Reason for the Petition

- The petitioners argue that the project violates provisions of the **Wildlife (Protection) Act, 1972**.
- According to the petition:
  - The project is located within the **Sharavathi Valley Lion-Tailed Macaque Sanctuary**
  - A part of the project area lies inside the **Eco-Sensitive Zone (ESZ)** of the sanctuary
- Petitioners claim the project could cause **serious damage to wildlife habitats**.

3. Relevant Law: Section 29 of the Wildlife (Protection) Act, 1972

- **Section 29** of the Act states that:
  - No person shall **destroy, exploit or remove wildlife or forest produce from a sanctuary**
  - No activity should **damage or divert wildlife habitat**
  - Flow of water into or out of the sanctuary cannot be altered
- Such actions can only be allowed with **permission from the Chief Wildlife Warden** and must be justified for the **improvement and management of wildlife in the sanctuary**.
- The petitioners argue that the current project **does not benefit wildlife conservation**.

4. Land Area Involved in the Project

According to the petition:

- Total land required: **142.763 hectares**

Break-up:

- **102 hectares inside the wildlife sanctuary**
- **39.715 hectares inside the Eco-Sensitive Zone (ESZ)**

This raises concerns about **habitat destruction and ecological damage**.

5. About the Sharavathi Pumped Storage Hydroelectric Project

- The project is a **Pumped Storage Hydropower Project (PSHP)** proposed on the **Sharavathi River in Karnataka**.
- Key details:
  - Planned capacity: **2,000 MW**
  - Estimated cost: **₹10,000 crore**
  - Developed by **Karnataka Power Corporation Limited (KPCL)**
- If completed, it would become **India's largest pumped storage hydropower project**.

6. How Pumped Storage Hydropower Works

- A **pumped storage power plant** uses two reservoirs at different heights.
- Working mechanism:
  - **During low electricity demand**, water is pumped from the **lower reservoir to the upper reservoir**
  - **During high electricity demand**, water flows back down through turbines
  - The flowing water generates **electricity**
- This technology helps **store energy and stabilise power supply**, especially with **renewable energy sources**.

7. Reservoirs Used in the Project

The project will use **two existing dams**:

Talakalale Dam

- Height: **62.48 metres**
- Will function as the **upper reservoir**

Gerusoppa Dam

- Height: **64 metres**
- Will function as the **lower reservoir**

Additional infrastructure includes:

- **Five tunnels**
- **Eight pumping stations**

8. Environmental Concerns

- The project area lies within the **Western Ghats**, a globally recognised **biodiversity hotspot**.
- The **Sharavathi Wildlife Sanctuary** is home to several rare species, including:
  - **Lion-tailed macaque (endangered)**
  - **Hornbills**
  - **King cobras**
  - Several **endemic plant species**
- Environmentalists argue the project could threaten these **fragile ecosystems**.

9. About the Sharavathi River

- The **Sharavathi River** is located in **Karnataka**.
- Key facts:
  - One of the few **west-flowing rivers in India**
  - Originates in the **Western Ghats**
  - Flows northwest and drains into the **Arabian Sea at Honnavar**
- Total length: **128 km**

10. Important Geographic Feature

- The river forms the famous **Jog Falls**, one of the **highest waterfalls in India**.
- Height of the falls: **253 metres**.

11. Major Tributaries of the Sharavathi River

Important tributaries include:

- **Nandihole**
- **Haridravathi**
- **Mavinahole**
- **Hilkunji**
- **Yennehole**
- **Hurlihole**
- **Nagodihole**

About the National Board for Wildlife (NBWL)

- The **National Board for Wildlife (NBWL)** is a **statutory body** established by the **Central Government in 2003**.
- It was constituted under **Section 5A of the Wildlife (Protection) Act, 1972**.
- NBWL serves as the **top advisory body in India on wildlife conservation**.
- It advises the government on issues related to:
  - **Wildlife protection**

- **Management of Protected Areas (PAs)**
- **Approval of development projects in wildlife habitats**

2. Role and Importance of NBWL

The **National Board for Wildlife** guides the government in making decisions related to:

- **Wildlife conservation policies**
- **Protection of biodiversity**
- **Development projects in protected areas**

It plays a key role in ensuring that **development activities do not harm wildlife ecosystems**.

3. Organisational Structure of NBWL

The **NBWL is a 47-member body**.

Leadership

- **Chairperson: Prime Minister of India**
- **Vice-Chairperson: Union Minister of Environment, Forest and Climate Change**

Members Include

- **Chief of Army Staff**
- **Defence Secretary**
- **Expenditure Secretary of the Government of India**
- Representatives from **wildlife and conservation institutions**

In addition, the government nominates:

- **10 eminent conservationists, ecologists and environmentalists**

4. Member Secretary of NBWL

- The **Additional Director General of Forests (Wildlife)** and **Director of Wildlife Preservation** serves as the **Member Secretary** of the Board.
- The Member Secretary helps in:
  - Coordinating meetings
  - Implementing board decisions
  - Managing administrative functions

5. Major Functions of NBWL

- The main functions of the **National Board for Wildlife** include:
- ***Wildlife Conservation***
- Advising the **Central and State Governments** on matters related to **wildlife protection**.
- Recommending strategies to **control poaching and illegal wildlife trade**.
- ***Protected Area Management***
- Providing recommendations for:
  - **National Parks**
  - **Wildlife Sanctuaries**
  - **Other Protected Areas**
- ***Environmental Impact Assessment***
- ***Monitoring Conservation Efforts***
- Preparing and publishing a **Wildlife Status Report at least once every two years**.

6. Standing Committee of the NBWL

- The **Standing Committee** is a smaller body formed under the NBWL.
- ***Composition***
- Consists of **not more than 10 members**
- **Chairperson: Union Minister of Environment, Forest and Climate Change**

7. Role of the Standing Committee

- The **Standing Committee** mainly deals with **project approvals in protected areas**.
- Its functions include:
- Examining **development projects in wildlife sanctuaries**
- Regulating **land diversion in protected areas**
- Reviewing activities within **Eco-Sensitive Zones (ESZs)**
- Thus, it acts as a **project clearance authority**.

8. Difference Between NBWL and Its Standing Committee

Aspect	**National Board for Wildlife (NBWL)**	**Standing Committee of NBWL**
Nature	Policy-level advisory body	Project clearance body
Leadership	Chaired by **Prime Minister**	Chaired by **Environment Minister**
Role	Wildlife conservation policy and strategy	Approves projects in **Protected Areas and ESZs**
Size	**47 members**	Up to **10 members**

Government Prioritises Natural Gas Supply Amid LNG Disruption

1. Why this news?

- India is facing a shortage of **Liquefied Natural Gas (LNG)** due to conflict in **West Asia**.
- Shipping through the strategic **Strait of Hormuz** has nearly stopped.
- To manage the crisis, the government invoked emergency powers under the **Essential Commodities Act**.
- Natural gas supply is now prioritised for **households, transport (CNG), and LPG production**, while supply to some industries has been reduced.

1. Strait of Hormuz Disruption

- The **Strait of Hormuz** is a narrow waterway between **Iran** and **Oman**.

Why it is important

- Connects the **Persian Gulf with the Arabian Sea**.
- Handles about **one-fifth of global oil and LNG trade**.

For India

- Around **80% of LPG imports** pass through this route.
- About **40% of India's crude oil imports** use this corridor.
- Over **50% of LNG imports** also transit through it.
- Because of security threats and attacks on vessels, shipping traffic has been largely halted, disrupting energy supplies to India.

2. India's Dependence on Imported Gas

- India's natural gas demand is about **190 million standard cubic metres per day (mscmd)**.

Key facts:

- Around **50% of demand is met through LNG imports**.
- Major suppliers include:
  - **Qatar**
  - **United Arab Emirates**

For LPG:

- About **60% of India's LPG demand is met through imports**.
- More than **80% of LPG imports travel through the Strait of Hormuz**.

Thus, geopolitical instability in West Asia directly affects **India's energy security**.

3. What is LPG and Why it is Important for India

- **Liquefied Petroleum Gas** is a fuel mainly made of **propane and butane**.

Uses

- Household cooking
- Heating
- Some industrial applications

Importance in India

- Used by **more than 33 crore households**.
- A major cooking fuel promoted under **Pradhan Mantri Ujjwala Yojana**.

Benefits of LPG

- Burns cleaner than firewood or coal
- Reduces **indoor air pollution**
- Improves **public health and household welfare**

Therefore, uninterrupted LPG supply is critical for **energy security and social welfare**.

4. Government Action: Emergency Powers

- The government invoked **Section 3 of the Essential Commodities Act, 1955**.
- It also used provisions under the:
  - **Petroleum Products (Maintenance of Production, Storage and Supply) Order**
- These laws allow the government to:
  - Regulate production
  - Control supply and distribution
  - Prevent shortages during emergencies.

5. Four-Tier Priority System for Gas Allocation

- Gas supply is now allocated based on **four priority categories** using the **average gas consumption of the past six months**.

Priority Category I – 100% Supply

- Includes sectors that directly affect citizens:
  - Domestic **PNG (Piped Natural Gas)**
  - **CNG (Compressed Natural Gas)** for vehicles
  - Gas used for **LPG production**
  - Gas required for **pipeline operations**

Priority Category II – 70% Supply

Includes:

- Fertiliser plants

Conditions:

- Gas must be used **only for fertiliser production**.
- Compliance must be certified through the **Petroleum Planning and Analysis Cell**.

Priority Category III – 80% Supply

Includes:

- Tea industry
- Manufacturing units
- Industrial consumers connected to the national gas grid.

Priority Category IV – 80% Supply

Includes:

- Commercial and industrial consumers supplied through **City Gas Distribution (CGD)** networks.

6. Curtailment to Non-Priority Sectors

- To ensure supply to essential sectors, gas supply has been reduced for:
  - Petrochemical manufacturing units
  - Gas-based power plants
  - Consumers using domestic gas from difficult blocks
- Gas supply to refineries has been cut to **65% of recent average consumption**.
- The public sector company **GAIL** is managing gas allocation and distribution.

7. Measures to Increase LPG Supply

The government has directed refineries to:

- Maximise LPG production.
- Use **propane and butane streams exclusively for LPG production**.
- Avoid diverting these inputs to petrochemical manufacturing.
- All LPG produced must be supplied to **Oil Marketing Companies (OMCs)** for distribution.
- These steps have increased domestic LPG production by **around 10%**.

8. Role of Oil Marketing Companies (OMCs)

Three public sector companies manage LPG distribution in India:

- **Indian Oil Corporation**
- **Bharat Petroleum Corporation Limited**
- **Hindustan Petroleum Corporation Limited**

Functions

- Procurement of LPG
- Storage and transport
- Distribution through millions of distributors.

These companies ensure **last-mile delivery of LPG cylinders across the country**.

9. Measures to Protect Household LPG Supply

- India has **over 33 crore domestic LPG consumers**.
- Steps taken:
  - Domestic LPG users prioritised over commercial users.
  - Minimum refill booking gap increased from **21 days to 25 days**.
  - Daily distribution remains around **60 lakh cylinders**.
- Some commercial users like hotels and restaurants are facing supply disruptions.
- A **committee of oil marketing company executives** has been formed to review requests from commercial consumers.

10. Diversification of LNG Imports

India is exploring LNG imports from alternative suppliers such as:

- **United States**
- **Norway**

Challenges:

- Shipping time from these regions may take **around two months**.
- LNG prices have risen from **$6–8 per MMBtu to about $15 per MMBtu**.

However, imports from distant markets become viable when prices exceed **$10 per MMBtu**.

11. Structural Challenges in LPG Supply

High Import Dependence

- India consumed about **31 million tonnes of LPG in 2024–25**.
- Domestic production is only about **13 million tonnes**.

Major suppliers include:

- Saudi Arabia
- UAE
- Qatar
- Kuwait

Infrastructure Constraints

- LPG production depends on propane and butane output from refineries.
- Limited domestic gas production restricts expansion.

Global Market Risks

- Geopolitical conflicts disrupt shipping routes.
- Rising energy prices increase subsidy burden on the government.

12. Way Forward for India's Energy Security

To strengthen energy security, India may need to:

- Diversify LPG and LNG import sources to regions like **the US, Africa, and Latin America**.
- Expand **Strategic Petroleum Reserves (SPR)** and explore gas storage systems.
- Increase domestic gas exploration in **deepwater and difficult basins**.
- Promote alternative cooking fuels such as:
  - Biogas
  - Compressed Biogas (CBG)
  - Electric cooking
  - Green hydrogen (long term).
- Strengthen maritime security and international cooperation to protect **major sea lanes**.

National Highways Green Cover Index (NH-GCI) Report 2025-26

1. Why this news?

- **National Highways Authority of India** released the **first Annual Report on the National Highways Green Cover Index (NH-GCI)**.
- The report measures **how much green cover (plants and trees)** exists along India's national highways.
- It was prepared with help from **National Remote Sensing Centre**, which works under **Indian Space Research Organisation**.

1. What is NH-GCI?

- **National Highways Green Cover Index (NH-GCI)** is a system used to **measure the amount of vegetation along National Highways**.
- ***Purpose***
  - To check **how green the highways are**.
  - To track **tree plantation and greenery along roads**.
  - To support **environment-friendly highway development**.
- In simple words, it tells **how much area near highways is covered with plants and trees**.

2. How the Green Cover is Measured

- The measurement uses **satellite technology**.

Method

- Satellites detect **chlorophyll** in plants.
- Chlorophyll is the **green pigment in leaves** that helps plants do photosynthesis.

Using satellite sensors:

- Scientists detect the **presence of vegetation**.
- They calculate how much of the land has greenery.

The result is shown as a **percentage value**.

Example

- If NH-GCI = **40%**, it means **40% of land along that highway area has green cover**.

3. Area Covered in the First Report

- In the first assessment:
  - Around **30,000 km of National Highways** were studied.
  - The highways were located in **24 states of India**.
  - The data covers the period **July–December 2024**.
- Future reports will be released **every year** to track improvements in greenery.

4. What is Right of Way (RoW)?

- The index measures greenery within the **Right of Way (RoW)** of highways.

Right of Way (RoW) means:

- The **official land area reserved for a highway**.

- It includes:
    - Road lanes
    - Roadside land
    - Space for utilities and plantations.

NH-GCI measures **green cover on both sides of the highway within this area**.

5. Role of Space Technology

- The study uses **advanced satellite-based monitoring**.
- Benefits of this approach:
    - **Scientific and accurate measurement**
    - **Large area coverage**
    - **Cost-effective**
    - **Time efficient**
- Instead of manual surveys, satellites can **quickly analyse thousands of kilometres of highways**.

6. Institutional Cooperation

- The initiative is based on a **3-year Memorandum of Understanding (MoU)** signed in **January 2024** between:
    - **National Highways Authority of India**
    - **National Remote Sensing Centre**
- This collaboration combines:
    - **Highway infrastructure data**
    - **Satellite remote sensing technology**

7. Why NH-GCI is Important

- The index will help the government to:
    - Monitor plantation along highways
    - Compare green cover between different highways
    - Rank states and highway sections
    - Identify areas where more tree plantation is needed
- This helps in better planning and management of green highways.

8. Environmental Significance

The initiative supports:

- **Sustainable infrastructure development**
- Reduction of **air pollution**
- Improvement in **roadside ecosystems**
- Creation of **green corridors along highways**

It reflects the government's focus on **environment-friendly transport infrastructure**.

❐❐❐

Internal Security

Missile Defence Systems : The Sky Shield in the 2026 West Asia Conflict

Why in News?

In **February and March 2026**, the **US–Israel–Iran conflict** transformed from a localized shadow war into a massive high-intensity missile and drone exchange. Waves of thousands of projectiles have tested the world's most advanced multi-layered air defence networks. These systems have moved from being "deterrents" to active "survival mechanisms" for entire nations, highlighting a critical **"race of attrition"** where the speed of interceptor production is now as vital as the technology itself.

1. How a Missile Interceptor Works

A missile defence system is a synchronized "kill chain" that operates in milliseconds:

- **Detection & Lock:** Ground-based X-band radars (like the **AN/TPY-2**) and orbital satellites spot a launch. Computers calculate the target's speed and trajectory to achieve a "lock."
- **Launch & Guidance:** The **Engagement Control Station (ECS)** fires the interceptor. During flight, the ground radar continuously updates the interceptor on the enemy's changing position.
- **Terminal Destruction:** In the final seconds, the interceptor uses one of two methods:
    - **Proximity Fuse:** Explodes a warhead near the target to shred it with shrapnel.
    - **Hit-to-Kill:** Uses sheer kinetic energy to shatter the target by direct physical impact (the standard for modern systems like THAAD).

2. United States: The Global Shield

The US has deployed a massive "interceptor umbrella" across its bases and allied territories in 2026:

- **THAAD (Terminal High Altitude Area Defense):** Specifically designed to intercept ballistic missiles in their final (terminal) phase. In **March 2026**, the US reportedly redeployed THAAD batteries from South Korea to the Middle East to counter Iranian salvos.
- **Patriot (PAC-3):** The "workhorse" for last-line defence against cruise missiles and aircraft. It has been heavily utilized to protect US assets like the **Prince Sultan Air Base** in Saudi Arabia.
- **Aegis System (SM-3 & SM-6):** Sea-based interceptors on Navy destroyers. SM-3 handles exo-atmospheric (space) intercepts, while SM-6 provides terminal protection against drones and missiles.
- **IFPC (Indirect Fire Protection Capability):** A newer, lower-cost system using **AIM-9X** missiles to shoot down cheap drones, preserving expensive Patriot stocks.

3. Israel: The Multi-Layered "Iron" Network

Israel's air defence is considered the most battle-hardened in the world, featuring four distinct layers:

- **Arrow-2 & Arrow-3:** The top tier. **Arrow-3** intercepts long-range ballistic missiles outside the atmosphere. In **March 2026**, military commanders faced a "strategic dilemma" over whether to use the expensive Arrow-3 ($2.5 million per shot) or cheaper layers against Iran's new cluster-warhead missiles.
- **David's Sling:** The middle tier, designed for cruise missiles and medium-range rockets. It successfully intercepted several projectiles launched from **1,500 km** away during the early stages of the 2026 war.
- **Iron Dome:** The famous short-range protector against rockets and mortars. In 2026, it has achieved a **90% success rate** against low-speed threats.
- **Iron Beam:** A **high-power laser system** declared fully operational in late 2025. It destroys drones and mortars at a fraction of the cost of a physical missile, though its range is limited.

4. UAE and Iran: Regional Capabilities

- **UAE - Cheongung II (M-SAM):** A South Korean-made system that has seen emergency acceleration in 2026. A **third battery** was rushed into service in March 2026, achieving a reported **96% success rate** against Iranian drones over the Gulf.
- **Iran - Bavar-373:** Iran's premier long-range system, claimed to be comparable to the Russian S-400, designed to intercept aircraft and stealth targets.
- **Iran - Sevom-e-Khordad:** A mobile system famous for its high survivability and rapid relocation capabilities, used to protect Iran's nuclear sites during the **Operation Midnight Hammer** strikes in 2025.

Key Performance Data (February–March 2026)

System	Country	Success Rate	Cost per Intercept
Arrow-3	Israel	**~99%**	**$2.5M - $3M**
Cheongung II	UAE	**90-96%**	**$1M - $1.5M**
Iron Dome	Israel	**90%**	**$40,000 - $50,000**
Iron Beam	Israel	**100%** (within range)	**~$2** (Electricity cost)
THAAD	US	**High** (Limited data)	**$10M+**

Conclusion

The 2026 conflict has proven that while missile defence technology is highly effective, it faces a **resource crisis**. The US and its allies are currently expending interceptors faster than they can be manufactured, with some estimates suggesting that half of the global stockpile could be exhausted within weeks of sustained combat. This "attrition" reality is driving a massive shift toward **directed-energy weapons** like the Iron Beam and lower-cost interceptors like the Cheongung II to ensure that the sky shield remains sustainable in a prolonged war.

Sinking of IRIS Dena : The US–Iran Conflict Enters the Indian Ocean (2026)

Why in News?

In **March 2026**, the **US–Israel–Iran conflict** spilled into the Indian Ocean Region (IOR) when a US submarine torpedoed and sank the Iranian frigate **IRIS Dena**. The incident occurred approximately **40 nautical miles off the southern coast of Sri Lanka**, near Galle. This marked the **first time a US submarine has torpedoed and sunk an enemy vessel since World War II**. Notably, the IRIS Dena was targeted while returning from the **International Fleet Review (IFR) 2026** in Visakhapatnam, placing India in a complex diplomatic position.

1. International Convention on Maritime Search and Rescue (SAR)

Following the sinking, the Sri Lankan Navy launched a rescue operation for the Iranian sailors, fulfilling its obligations under the **1979 SAR Convention**.

- **The Framework:** Adopted under the **International Maritime Organization (IMO)**, the convention ensures that any person in distress at sea receives assistance regardless of nationality.
- **SAR Regions:** The world's oceans are divided into specific zones where coastal states are responsible for coordinating rescue through **Rescue Coordination Centres (RCCs)**.
- **India's Role:** A signatory since 2001, India's rescue operations are coordinated by the **Indian Coast Guard (ICG)** within the **Indian Search and Rescue Region (ISRR)**. India also operates **INDSAR**, a voluntary ship reporting system for rapid distress response.

2. Understanding Torpedo Technology

The sinking of the IRIS Dena highlighted the lethality of the modern **torpedo**—a self-propelled underwater missile designed to detonate at a ship's most vulnerable point, usually beneath the hull.

- **Mechanism:** Modern torpedoes use **thermal or electric propulsion** and can exceed speeds of 50 knots.
- **Guidance Systems:**
  - **Active Acoustic:** Emits sonar pulses and tracks the echo from the target.
  - **Passive Acoustic:** Silently "listens" and follows the noise of the target's engines or propellers.
- **Classification:**
  - **Heavyweight:** Deployed by submarines to destroy large warships (used in this incident).
  - **Lightweight:** Launched from aircraft or ships primarily to target submarines.

3. India's Torpedo Capabilities

India has developed a robust indigenous suite of torpedo technologies to secure its maritime interests:

- **Varunastra:** India's first indigenous **advanced heavyweight** anti-submarine torpedo, capable of being launched from both ships and submarines.
- **Shyena (TAL):** An advanced **lightweight** torpedo that is highly versatile, launchable from helicopters, ships, and submarines.
- **Maareech (ATDS):** A critical **Advanced Torpedo Defence System** that detects incoming enemy torpedoes and diverts them using towed decoys.

4. Strategic and Diplomatic Implications

- **The IFR Connection:** The IRIS Dena was an invited participant in India's **International Fleet Review 2026**, an event meant to build "Bridges of Friendship." The attack on a guest vessel shortly after leaving Indian waters is a major diplomatic challenge for New Delhi.
- **Strategic Tightrope:** India must now balance its **Major Defense Partnership** with the US against its long-standing **civilizational and energy ties** with Iran.
- **Regional Security:** The incident signals the end of the "protected" status of the IOR, as the US-Iran shadow war transitions into direct kinetic engagement in neutral waters.

Conclusion

The 2026 sinking of the IRIS Dena has brought the "Red Sea" intensity of the US-Iran conflict to the doorstep of South Asia. While Sri Lanka acted within the humanitarian framework of the **SAR Convention**, the military nature of the strike underscores a shift in maritime warfare where stealthy, underwater assets are again becoming the primary tools of escalation. For India, the challenge lies in ensuring that the **Indian Ocean Region** remains a zone of peace while its strategic partners engage in open hostilities nearby.

Alleged Use of White Phosphorus in Lebanon

Why in News?

A report by **Human Rights Watch** has accused **Israel** of deploying **white phosphorus munitions** in residential areas of **Lebanon**. The report raises serious concerns regarding potential violations of **international humanitarian law** as the Israel–Lebanon conflict intensifies, leading to significant civilian casualties and infrastructure damage.

What is White Phosphorus?

- **Nature:** A toxic, wax-like chemical substance that ignites upon contact with oxygen.
- **Temperature:** It burns at temperatures exceeding **800°C**, which is hot enough to melt metal.
- **Appearance:** Typically white, yellow, or colorless with a distinct garlic-like odor.
- **Persistence:** It is extremely difficult to extinguish and continues to burn until either the chemical is completely consumed or it is deprived of oxygen.

Military Utility: Incendiary Munition

- **Primary Use:** Militaries use it as an **incendiary weapon** to create dense smokescreens, provide illumination, or mark targets on the battlefield.
- **Mechanism:** It ignites rapidly, producing thick smoke that can cover large areas, effectively masking troop movements.
- **Definition:** An incendiary weapon is designed to set fire to objects or cause burn injuries through intense heat or chemical reactions upon impact.

Severe Health and Environmental Hazards

- **Physical Injuries:** Causes exceptionally deep burns that can penetrate to the **bone**.
- **Internal Damage:** Absorbed chemicals can lead to systemic toxicity, damaging the **liver, kidneys, and heart**.
- **Metabolic Impact:** Can trigger severe metabolic disorders, such as abnormal potassium levels, often resulting in heart failure.
- **Urban Risk:** When used in populated zones, it frequently ignites buildings and causes indiscriminate harm to civilians.

Legal Status Under International Law

- **Not a "Chemical Weapon":** White phosphorus is not strictly banned as a chemical weapon when used for non-incendiary purposes (like smoke or signaling).
- **Convention on Certain Conventional Weapons (CCW), 1980:** This treaty restricts weapons that cause excessive injury or indiscriminate harm. **India** is a party to all five Protocols of the CCW.
- **Protocol III (Incendiary Weapons):** This protocol specifically restricts the use of incendiary weapons against civilians.
- **The Loophole:** Because white phosphorus is often labeled a "multipurpose" munition (for smoke/light), militaries argue it falls outside the scope of Protocol III.
- **Accountability Gap: Israel** is not a signatory to Protocol III, which further complicates the legal framework for holding forces accountable for its use in civilian areas.

AI Sovereignty and National Security

Why in News?

The integration of **Artificial Intelligence (AI)** into defense, surveillance, and geopolitics has turned **AI sovereignty** into a top-tier national security priority. For India, maintaining independent control over its AI ecosystem is now seen as essential to protecting its borders and social fabric amidst rising global AI rivalries.

Note :

AI is fundamentally altering national security by offering high-precision military advantages while simultaneously introducing risks like **autonomous weapons**, **AI-driven cyber-attacks**, and **mass disinformation**. To protect its sovereignty, India is focusing on building indigenous "compute" power, securing data infrastructure, and creating resilient defense frameworks.

How AI Promotes National Security

- **Military Precision:** AI is used for lethal operations and high-value targeting (e.g., Israel's "Where's Daddy?" tool) to increase accuracy and reduce collateral damage.
- **C4ISR Modernization:** AI acts as the military's "nervous system," processing vast satellite and sensor data to identify "dark ships" and predict adversary movements.
- **Infrastructure Hardening:** Proactive defense systems use AI to detect anomalies in power grids and provide video analytics for securing nuclear and military sites.
- **Cognitive Defense:** Security agencies leverage AI to identify coordinated bot networks and deepfakes, preserving the integrity of public discourse.

Understanding AI Sovereignty

- **Definition:** A nation's independent authority over its **compute infrastructure, data, and algorithms** to ensure technology aligns with national interests.
- **India's Position (March 2026):** Driven by the **IndiaAI Mission**, the country has expanded its compute capacity to over **58,000 GPUs**.
- **Strategic Approach:** India follows an **application-led strategy**, focusing on multilingual models (e.g., **Sarvam AI**, **BharatGen**) and domestic data utilization rather than full hardware self-sufficiency.

AI Weaponization: Threats to India

- **Asymmetric Warfare:** China's demonstration of a **200-drone autonomous swarm** and AI-enhanced strategies in the Indian Ocean challenge India's conventional edge.
- **Cyber-Aggression:** Vulnerabilities were highlighted by the **"Iron Wall"** attack (May 2025), which caused a power grid collapse across 23 Indian states.
- **Information Warfare:** During the **2024 General Elections**, AI-generated deepfakes were weaponized to incite communal divisions and erode institutional trust.
- **Economic Espionage:** Actors like **APT41** use AI to steal intellectual property from India's pharma and IT sectors.
- **Bioweapons & Data Poisoning:** Generative AI can be used to design novel pathogens or "poison" training data to make defense systems malfunction silently.

Steps to Secure India's Future

- **Defense AI Agency (DAIA):** Establishing a specialized body to lead projects like **Project Drona** (drone swarms) and **Project Kavach** (infrastructure defense).
- **Sovereign AI Backbone:** Developing a **National Secure Data Set** and domestically designed semiconductors to process sensitive defense data.
- **National Cognitive Security Centre:** A dedicated hub for real-time deepfake detection and digital literacy campaigns to "immunize" the public against disinformation.
- **Regulatory Frameworks:** Formulating strict guidelines for **Lethal Autonomous Weapons (LAWS)**, ensuring human oversight remains in the loop to prevent accidental escalation.

Conclusion

The weaponization of AI is an unprecedented challenge to India's military and social stability. By transforming these vulnerabilities into strategic strengths through **indigenous development** and **global partnerships**, India can ensure its security in an increasingly automated world.

Cybersecurity Talent Crisis in India's Enterprise Sector (2026)

Why in News?

India's enterprise sector is facing a severe security crisis in **2026** as a massive deficit in skilled professionals leaves critical digital assets vulnerable. While the digital economy is projected to contribute **20% of India's GDP** this year, the workforce gap has reached a breaking point, coinciding with a sophisticated surge in AI-driven cyberattacks.

The Talent Deficit & Workforce Gap

- **Massive Shortfall:** India has approximately **380,000 cybersecurity professionals** against an enterprise demand of over **1.2 million**.
- **The Mid-Career Paradox:** According to the *India Skills Gap Report 2026*, the most acute shortage is in the **6–15 years experience segment**. While 46% of employers recruit from this pool, it remains the most constrained.
- **Niche Skill Scarcity:** There is a **30-40% shortfall** in roles requiring expertise in **Identity and Access Architecture**, cloud-native security, privileged access management, and digital forensics.

Escalating Threat Landscape (2025–26)

Corporate India is currently being targeted for its "data goldmine" of financial flows and intellectual property:

- **Malware Explosion:** The *Data Security Council of India (DSCI)* recorded over **369 million malware detections** across 8.44 million endpoints in 2024-25—averaging **702 detections every minute**.
- **Spyware & Malware Trends:** Spyware attacks surged **273%** in early 2025. **Trojans** (43%) and **Infectors** (34%) remain the predominant threat vectors.
- **AI-Powered Attacks:** 94% of organizations identify **AI as the biggest driver of change**, with attackers using Generative AI for polymorphic malware and hyper-personalized phishing.
- **Financial Impact:** Indians lost over **₹11,000 crore** to cyber frauds in just the first half of 2024, with losses projected to hit **₹70,000 crore** by the end of 2025.

Operational & Strategic Challenges

- **Extended Hiring Cycles:** Cybersecurity roles now take an average of **90 days to fill**, with senior-level vacancies often remaining open for a year or more.
- **Hiring Friction:** Offer acceptance rates have dropped to **70%** (down from 85%), as talent poaching and high stress levels (reported by 45% of pros) lead to rapid attrition.
- **Strategic Vacuum:** These vacancies lead to slower threat detection, fragmented incident response, and delayed compliance with new regulations like the **DPDP Act**.

Adaptation & Mitigation Strategies

- **SOC-as-a-Service (SOCaaS):** 92% of senior IT professionals now prefer **outsourcing security operations** to specialized providers for 24/7 monitoring.
- **Upskilling Over Hiring:** 85% of employers now prefer **upskilling existing staff** rather than external hiring, with 38% prioritizing industry certifications over traditional degrees.
- **Zero Trust & AI Defense:** Enterprises are moving toward **Zero Trust Architecture** and AI-driven anomaly detection to counter autonomous malicious code.
- **Diversity in Skilling:** 44% of organizations have integrated **Diversity & Inclusion (D&I)** goals into their skilling programs to widen the talent pipeline.

Conclusion

The shift from "just-in-time" hiring to **"skills-first" resilience** is no longer optional. To safeguard the 2026 digital economy, Indian enterprises must bridge the **1.2 million-strong workforce gap** through aggressive internal re-skilling, academia-industry partnerships, and a transition to AI-augmented defense models.

Defence Forces Vision 2047 : Roadmap for a Future-Ready Military

Why in News?

On **March 10, 2026**, the Union Defence Minister officially released the **"Defence Forces Vision 2047: A Roadmap for a Future-Ready Indian Military."** Articulated by the Headquarters Integrated Defence Staff (HQ IDS), this blueprint outlines the transformation of the Indian Armed Forces into an integrated, multi-domain, and technologically advanced force by the centenary of India's independence.

Note

The Vision 2047 is a long-term meta-strategy that links military modernization with economic growth and indigenous industrial capacity. It aims to shift the military from a "net-centric" to a **"data-centric"** force, emphasizing jointness among the Army, Navy, and Air Force while building a self-reliant defense ecosystem to support the goal of **Viksit Bharat**.

Core Pillars of Vision 2047

- **Technological Advancement:** Focused on **Artificial Intelligence (AI)**, quantum sensing, autonomous systems, and directed-energy weapons to maintain "decision superiority" on the battlefield.
- **Jointness and Synergy:** Deepening operational integration across the three services to eliminate duplication and optimize resource allocation.
- **Multi-Domain Capability:** Operating seamlessly across traditional (land, sea, air) and emerging (cyber, space, cognitive) domains.

Key Proposals & Structural Reforms

- **Next-Gen Specialized Forces:** The roadmap proposes dedicated commands, including a **Space Command, Cyber Command, Drone Force**, and a **Cognitive Warfare Action Force**.
- **Mission Sudarshan Chakra:** Announced on August 15, 2025, this mission aims to build an indigenous, multi-layered air defense shield (similar to an enhanced Iron Dome) by **2035** to protect strategic and civilian assets.
- **Phased Transition:**
  1. **Era of Transition (till 2030):** Structural restructuring and boosting indigenous tech like drones.
  2. **Era of Consolidation (2030–2040):** Fully integrating cyber-space warfare and layered missile defense.
  3. **Era of Excellence (2040–2047):** Achieving a world-class, self-reliant all-domain military.

Challenges in the Defence Sector (2026)

- **Import Dependency:** Despite progress, India remains the **world's second-largest arms importer** (approx. 8.3% of global imports). Russia still accounts for nearly **40%** of these imports.
- **Structural Friction:** The rollout of **Integrated Theatre Commands (ITCs)** has faced inter-service institutional resistance, though a roadmap for 2026 aims to establish three primary adversary-based commands.
- **Budgetary Constraints:** A significant portion of the defense budget (approx. 2% of GDP) is consumed by salaries and pensions, limiting the funds available for capital acquisition.

Measures to Boost Capability

- **Capital Earmarking: 75%** of the capital acquisition budget for FY 2026-27 is reserved for procurement from **domestic industries**.
- **Export Surge:** India achieved record defense exports of **Rs 23,622 crore** in FY 2024-25, with a target of **Rs 50,000 crore by 2029**.

- **Innovation Ecosystem:** The **ADITI (Acing Development of Innovative Technologies with iDEX)** scheme is currently funding 30 deep-tech critical technologies for defense.
- **Institutional Leadership:** The **Chief of Defence Staff (CDS)**, General Anil Chauhan (tenure extended to May 2026), is leading the $20 billion theaterization upgrade.

The Path Forward

To realize the 2047 vision, India must prioritize:

1. **Accelerated Theaterization:** Prioritizing the Northern, Western, and Maritime Theatre Commands to ensure unified responses.
2. **Technological Sovereignty:** Moving from an "assembler" to an "innovator" in chokepoint technologies like **jet engines and semiconductors**.
3. **Agile Procurement:** Implementing faster acquisition cycles for software and AI-based tools.
4. **Specialized Manpower:** Recruiting civilian tech experts into military cyber and cognitive warfare wings.

Conclusion

"Defence Forces Vision 2047" acknowledges that future wars will be won in tech incubators and data centers as much as on the borders. By securing technological independence and enforcing service jointness, India aims to build a military that not only defends but actively deters in an increasingly volatile world.

China's "Xiaokang" Villages Along the LAC (2026)

Why in News?

In **March 2026**, Indian military leadership issued a fresh warning regarding China's rapid construction of **628 "Xiaokang" villages** along the **Line of Actual Control (LAC)**. Approximately **90%** of the clusters in the Eastern Sector are positioned directly opposite **Arunachal Pradesh**. These settlements are viewed as "dual-use" fortified outposts designed to solidify territorial claims through permanent civilian habitation, posing a long-term sovereignty challenge for India.

Note :

China is utilizing **"Xiaokang" (moderately prosperous) villages** to implement **"salami-slicing" tactics**—gradually changing the status quo on the ground without triggering a full-scale war. These villages facilitate **military-civil fusion**, providing the People's Liberation Army (PLA) with constant surveillance and rapid mobilization capabilities. In response, India has launched **Phase II of the Vibrant Villages Programme (VVP)** and accelerated the **1,840 km Arunachal Frontier Highway**.

What are Xiaokang Border Defence Villages?

- **Concept:** Launched around **2017**, these are high-standard residential settlements built in the **Tibet Autonomous Region (TAR)** along disputed frontiers.
- **Scale:** The project involves **628 villages** across 21 border counties, backed by a state investment of approximately **30 billion yuan**.
- **Legal Shield:** Supported by China's **2022 Land Border Law**, which mandates the state to settle populations and build infrastructure to "strengthen border defense."
- **Dual-Use Infrastructure:** While officially for "poverty alleviation," these villages feature all-weather roads, communications towers, and often helipads, capable of housing PLA personnel during crises.
- **Demographic Engineering:** By settling loyal populations in remote areas, China aims to monitor cross-border activity and promote the **Sinicization** of Tibet.

The Line of Actual Control (LAC): Context

- **Nature:** A **de facto** demarcation line emerged after the 1962 war; it is not a formally delineated international border.

- **Sectoral Division:**
  1. **Western Sector:** Ladakh/Aksai Chin (highest friction).
  2. **Middle Sector:** Himachal/Uttarakhand (least disputed).
  3. **Eastern Sector:** Arunachal/Sikkim (follows the **McMahon Line**; China refers to Arunachal as "South Tibet").
- **The Perception Gap:** India estimates the LAC at **3,488 km**, while China claims it is only **2,000 km**. This discrepancy leads to "grey zones" where overlapping patrols result in face-offs.

Strategic Threats to India

- **Civilian Buffer:** By establishing a "settled population," China can argue that the territory is no longer "disputed" but "administered," complicating future negotiations.
- **Eyes and Ears:** Residents act as a civilian defense force, providing **early warning** and intelligence on Indian troop movements.
- **Psychological Pressure:** The visible modernization on the Chinese side (electricity, 5G, superior roads) can create a sense of **relative neglect** among Indian border communities.
- **Strategic Chokepoints:** Many villages are located near the **Siliguri Corridor ("Chicken's Neck")**, threatening India's only land link to its Northeast.

India's Strategic Response (2026)

1. Vibrant Villages Programme (VVP) Phase II

- **Launch:** Formally launched by the Union Home Minister in **February 2026**.
- **Scope:** Expanded to **1,954 villages** across 17 states (including non-China borders).
- **Budget: Rs 6,839 crore** allocated for FY 2024-25 to 2028-29.
- **Goal:** To create "Growth Centres" with 100% saturation of welfare schemes (roads, power, internet) to prevent out-migration and ensure the local population acts as India's "eyes and ears."

2. Arunachal Frontier Highway (NH-913)

- **Details:** A massive **1,840 km** strategic road running parallel to the LAC, often within 20 km of the border.
- **Status:** Multiple greenfield packages (e.g., Tato to Monigong, Hunli to Hayuliang) are under active construction in **March 2026**, with completion targets ranging from **2027 to 2028**.

3. Strategic Tunnels & Connectivity

- **Sela Tunnel:** Fully operational, providing all-weather access to Tawang.
- **Zojila Tunnel:** Expedited to ensure winter connectivity to Ladakh.
- **Advanced Landing Grounds (ALGs):** Upgrading bases like **Nyoma** (Ladakh) to support heavy-lift military operations.

Conclusion

China's "Great Wall of Villages" represents a shift from military patrols to **permanent administrative control**. India's response marks a transition from a "defensive posture" to "strategic parity," where infrastructure and civilian resilience are treated as critical components of national defense.

INS Taragiri : Strengthening India's Naval Stealth & Aatmanirbharta (2026)

Why in News?

The **Indian Navy** is set to commission **INS Taragiri**, the fourth stealth frigate under the ambitious **Project 17A**. This induction marks a significant milestone in India's maritime deterrence strategy, particularly in the Indian Ocean Region (IOR). Built by **Mazagon Dock Shipbuilders Ltd (MDL)**, the vessel represents the cutting edge of indigenous warship design and stealth technology.

Note :

INS Taragiri is part of a seven-ship series of advanced guided-missile frigates. With over **75% indigenous**

content, the project has energized the domestic defense ecosystem, involving over **200 MSMEs**. The ship is designed for multi-dimensional warfare—including anti-submarine (ASW), anti-air (AAW), and anti-surface (ASuW) operations—while maintaining a "lethal stealth" profile to evade enemy radar.

Key Features of INS Taragiri

- **Indigenous Prowess:** A flagship of the **Aatmanirbharta in Defence** initiative; most of its critical components, from steel to sonar, are sourced domestically.
- **Advanced Stealth:** Features a **reduced radar cross-section (RCS)** and a specialized hull form that minimizes acoustic and infrared signatures, making it difficult for enemy sensors to detect.
- **Weaponry & Combat:** * **Surface-to-Surface:** Equipped with **BrahMos** supersonic cruise missiles.
    - **Surface-to-Air:** Armed with **Barak-8** Medium Range Surface-to-Air Missiles (MRSAM).
    - **ASW Suite:** Features indigenously developed triple-tube torpedo launchers and rocket launchers.
- **Propulsion:** Uses a **Combined Diesel or Gas (CODOG)** configuration, allowing the ship to switch between high-speed gas turbines for combat and fuel-efficient diesel engines for long-endurance patrols.

Understanding Project 17A

Project 17A (Nilgiri-class) is a follow-on to the Project 17 (Shivalik-class) frigates but with vastly improved stealth features, advanced weapons, and sensors.

- **Naming Convention:** All seven ships are named after iconic Indian mountain ranges:
    1. **INS Nilgiri**
    2. **INS Himgiri**
    3. **INS Udaygiri**
    4. **INS Taragiri**
    5. **INS Dunagiri**
    6. **INS Vindhyagiri**
    7. **INS Mahendragiri**
- **The Role of a Frigate:** A frigate is a versatile, medium-sized warship. It is faster and more maneuverable than a destroyer, typically used for **escorting aircraft carriers** or merchant convoys and performing independent "blue-water" operations.

Strategic Significance

1. **Countering Regional Threats:** The commissioning comes amid a **growing Chinese naval presence** in the IOR. INS Taragiri provides the Navy with a high-tech platform to monitor and deter maritime incursions.
2. **Maritime Diplomacy:** Beyond combat, the ship is designed for **Humanitarian Assistance and Disaster Relief (HADR)** operations, strengthening India's role as a "Net Security Provider" in the region.
3. **Economic Impact:** By sourcing 75% of its requirements locally, Project 17A has become a major driver for the **Indian shipbuilding industry**, creating thousands of skilled jobs.

Conclusion

The commissioning of **INS Taragiri** in 2026 is a testament to the Indian Navy's transition from a "Buyer's Navy" to a "Builder's Navy." As the fourth of seven sisters, Taragiri significantly enhances India's ability to project power across the high seas while ensuring that the "teeth" of the Indian fleet are designed and forged within the country.

Indo-Myanmar Border Security : Porous Frontiers and Fencing Delays (2026)

Why in News?

The recent arrest of **seven foreign nationals** attempting to cross into Myanmar via **Mizoram** has

once again brought the vulnerabilities of the **1,643-km Indo-Myanmar border** into sharp focus. The incident has intensified the debate over the slow progress of border fencing and the suspension of the **Free Movement Regime (FMR)**, as India struggles to balance national security with the deep-rooted ethnic ties of border communities.

Note :

India shares a high-altitude, porous border with Myanmar through **Arunachal Pradesh, Nagaland, Manipur, and Mizoram**. Despite a **31,000 crore** project approved by the Cabinet Committee on Security (CCS) in 2024 to fence the entire stretch, ground progress remains sluggish, with less than **44 km** completed by early 2026. The frontier, guarded by the **Assam Rifles**, faces multifaceted challenges ranging from narcotics smuggling from the "Golden Triangle" to the influx of refugees following Myanmar's 2021 coup.

Border Profile and Management

- **Total Length:** 1,643 km.
- **State-wise Breakup:** Arunachal (520 km), Mizoram (510 km), Manipur (398 km), and Nagaland (215 km).
- **Guarding Force: Assam Rifles** (India's oldest paramilitary force).
    - **Dual Control:** It operates under the **administrative control** of the Ministry of Home Affairs (MHA) and the **operational control** of the Indian Army—a structure often criticized for creating command delays.

The Free Movement Regime (FMR) Crisis

- **Background:** Historically, the FMR allowed tribes on both sides to travel up to 16 km into each other's territory without a visa to maintain cultural and familial ties.
- **Regulation (Dec 2024):** Due to rising insurgency and illegal migration, the MHA restricted visa-free movement to **10 km**.
- **Current Status (2026):** Many border gates remain shut due to local resistance against **biometric-enabled entry systems**, reducing the number of functional gates from a planned 43 to just **20**.

Infrastructure and Fencing Bottlenecks (2026 Status)

Category	Approved/Planned	Completed (as of 2026)
Border Fencing	1,643 km	**43.75 km**
Border Roads	3,194.8 km	**11.5 km**
Functional Gates	43	**20**

- **Reasons for Delay:** Extreme Himalayan terrain, dense forests, and strong opposition from local ethnic groups in Nagaland and Mizoram who view the fence as a "Berlin Wall" dividing their communities.

Major Security Challenges

1. **Insurgent Safe Havens:** Groups like the NSCN and various Meitei insurgent factions use the thick canopy of the Myanmar jungles to set up camps and launch hit-and-run attacks in India.
2. **Narcotics and the 'Golden Triangle':** The border is a major transit point for high-grade heroin and synthetic drugs (Yaba) entering India's Northeast.
3. **Refugee Influx:** Following the 2021 military coup in Myanmar, thousands of Chin refugees have sought shelter in Mizoram and Manipur, complicating local demographics and security.
4. **Human Trafficking:** The porous nature of the border facilitates the illegal movement of people, as evidenced by the recent arrest of foreign nationals in Mizoram.

The Path Forward: CIBMS and Unified Command

- **Smart Fencing (CIBMS):** India must transition to a **Comprehensive Integrated Border Management System**, utilizing infrared cameras, laser walls, and motion sensors in areas where physical fencing is topographically impossible.
- **Resolving Dual Control:** There is a growing demand to bring the **Assam Rifles** under a unified command structure to streamline decision-making during border exigencies.
- **Community Engagement:** To reduce local hostility, the government must provide "border haats" (markets) and ensure that fencing does not completely sever the socio-economic lifeline of border tribes.

Conclusion

The Indo-Myanmar border is no longer just a "soft" frontier; in 2026, it has become a critical theater of national security. While the **31,000 crore** allocation shows political intent, the dismal completion rate of fencing and roads highlights a massive execution gap. For India to secure its "Act East" gateway, it must bridge the distance between Delhi's policy and the difficult terrain of the Northeast.

S-400 'Sudarshan Chakra' : India's Strategic Air Defence Shield (2026)

Why in News?

As of **April 2, 2026**, India is fast-tracking the induction of its remaining **S-400 Triumf** squadrons, officially named **'Sudarshan Chakra'** in Indian service. Following the successful operational performance of the first three units during **Operation Sindoor (2025)**, the government has moved to accelerate the delivery of the final two squadrons. The **fourth squadron** is scheduled for arrival by **May 2026**, marking the first anniversary of Operation Sindoor, while the **fifth and final unit** is expected to be delivered by **November 2026**.

Note

The S-400 is a mobile, long-range **Surface-to-Air Missile (SAM)** system designed to create an impenetrable, multi-layered defensive "bubble." India signed a **5.43 billion dollar** deal with Russia in 2018 for five squadrons. Despite global supply chain disruptions, the induction is now nearing completion. Strategically, these systems act as a critical "operational bridge" while India's indigenous long-range shield, **Project Kusha**, undergoes final user trials in early 2026.

Technical Capabilities of the Sudarshan Chakra

- **Layered Interception:** The system utilizes a mix of four missile types with ranges from **40 km to 400 km**, allowing it to engage targets at altitudes up to **30 km**.
- **High-Volume Tracking:** Equipped with advanced panoramic and engagement radars, it can track up to **300 targets** and simultaneously engage **36 threats** with terminal velocities exceeding **Mach 14**.
- **Target Spectrum:** Capable of neutralizing stealth fighters (like the J-20), ballistic missiles, cruise missiles, and swarm drones.
- **Anti-AWACS Role:** Its 400 km reach allows it to target high-value enemy assets like **Airborne Early Warning and Control (AWACS)** aircraft and mid-air refuelers deep within adversary territory.

Operational Status and Deployment (2026)

Squadron Status	Timeline	Strategic Deployment
Squadrons 1, 2, & 3	Fully Operational	Western Frontier (Rajasthan/Gujarat), Pathankot (J&K/Punjab), and Siliguri Corridor ("Chicken's Neck").
Squadron 4	**Expected May 2026**	To be deployed in the Northern Sector to counter LAC tensions.
Squadron 5	**Expected Nov 2026**	Final unit to complete the pan-India multi-layered umbrella.

- **Operation Sindoor (May 2025):** The system saw its first combat use by India, successfully intercepting multiple hostile drones and missiles during a border conflict. This validation prompted the **Defence Acquisition Council (DAC)** to approve an additional **10,000 crore** in March 2026 for 288 interceptor missiles to replenish and expand stocks.

Indigenous Synergy: Project Kusha

While the S-400 provides immediate deterrence, India is simultaneously developing **Project Kusha** (Extended Range Air Defence System):

- **Status:** As of **January 2026**, Project Kusha moved into **Critical User Trials**.
- **Capability:** It is a three-tier system (interceptors at 150 km, 250 km, and 350 km) designed to eventually surpass the S-400's parameters, including the ability to intercept **hypersonic glide vehicles**.

- **Goal:** To provide a sovereign, "Made in India" sky shield that integrates seamlessly with the **Sudarshan Chakra** AI-networked command and control.

Strategic Significance

1. **Two-Front Deterrence:** The 400 km range forces adversary aircraft to fly lower or stay farther from the border, effectively creating a "no-fly zone" over sensitive sectors.
2. **Strategic Autonomy:** By maintaining the S-400 deal despite international pressure, India has signaled its commitment to its own security requirements and its "diversified procurement" strategy.
3. **Infrastructure Protection:** The system is specifically tasked with guarding high-value targets, including nuclear power plants, command centers, and major metropolises like New Delhi and Mumbai.

Conclusion

By the end of **2026**, India will possess one of the world's most dense and sophisticated integrated air defence networks. The **S-400 Sudarshan Chakra** provides the high-end strategic "reach" today, while the maturing **Project Kusha** ensures long-term technological sovereignty. For India, this multi-layered umbrella is not just a defensive tool but a powerful deterrent that reshapes the military calculus across its northern and western frontiers.

FATF 2026 : India's Crackdown on Offshore Crypto Platforms (oVASPs)

Why in News?

The **March 2026 FATF report**, 'Understanding and Mitigating the Risks of Offshore Virtual Asset Service Providers,' has lauded India's aggressive regulatory stance against **Offshore Virtual Asset Service Providers (oVASPs)**. The report highlights India's success in neutralizing money laundering and terror financing risks by forcing international crypto platforms to comply with domestic laws or face immediate digital blockades.

Note

oVASPs are entities providing crypto-related services (exchange, transfer, or safekeeping) from outside India's jurisdiction. To curb "Regulatory Arbitrage," where platforms exploit lenient overseas laws, India's **Financial Intelligence Unit (FIU-IND)** has mandated that all oVASPs serving Indian users must register locally and appoint a **Principal Officer based in India**. As of early 2026, authorities have already utilized the **Sahyog Portal** to take down **85 non-compliant URLs** and are actively probing "scam compounds" in Southeast Asia linked to crypto fraud.

Key FATF Highlights: India's Enforcement Strategy (2026)

- **Virtual Asset Lab:** India has launched a high-tech facility for **automated web surveillance** and open-source intelligence (OSINT) to identify unregistered platforms in real-time.
- **Physical Accountability:** The FIU now mandates that the **Principal Officer (PO)** of any VASP must be physically present in India to ensure legal accountability under the **PMLA, 2002**.
- **URL Takedowns:** Leveraging the **Sahyog Portal**, the Home Ministry has directed the blocking of 85 URLs belonging to offshore entities that bypassed Indian tax and AML (Anti-Money Laundering) norms.
- **Targeting "Scam Compounds":** Indian agencies (CBI, ED, and NIA) are investigating cyber-hubs in **Cambodia, Laos, and Myanmar** where trafficked citizens were used to run "Pig Butchering" and other crypto scams.
- **Working Group on Red Flags:** A specialized group including banks and payment gateways has been formed to detect **suspicious deposit patterns** from offshore wallets into the domestic banking system.

Understanding Offshore Virtual Asset Service Providers (oVASPs)

- **The Concept:** Entities headquartered outside India that offer trading (INR to USDT),

transfers, or digital wallet services to Indian residents.

- **The Challenge (Regulatory Arbitrage):** Many oVASPs operate from "tax havens" or jurisdictions with weak KYC (Know Your Customer) rules, allowing them to bypass India's **30% VDA Tax** and **1% TDS**.
- **Modus Operandi:** Illicit funds are often converted into crypto via oVASPs and then "laundered" by moving them into **compliant Indian exchanges** to be withdrawn as clean fiat currency.

Virtual Digital Assets (VDA) in the Indian Context

Under the **Finance Act, 2022**, India uses the term **Virtual Digital Asset (VDA)** to classify cryptocurrencies, NFTs, and stablecoins.

Regulatory Aspect	Policy Details (2026 Status)
Taxation	**30% flat tax** on income from the transfer of any VDA (no set-off for losses).
Tracking (TDS)	**1% TDS** on every transaction to maintain a digital paper trail of the "sender" and "receiver."
Legal Status	Covered under the **PMLA, 2002** since 2023; exchanges are "Reporting Entities."
Exclusions	**Central Bank Digital Currency (CBDC)** like the **e-Rupee** is NOT a VDA; it is digital fiat.

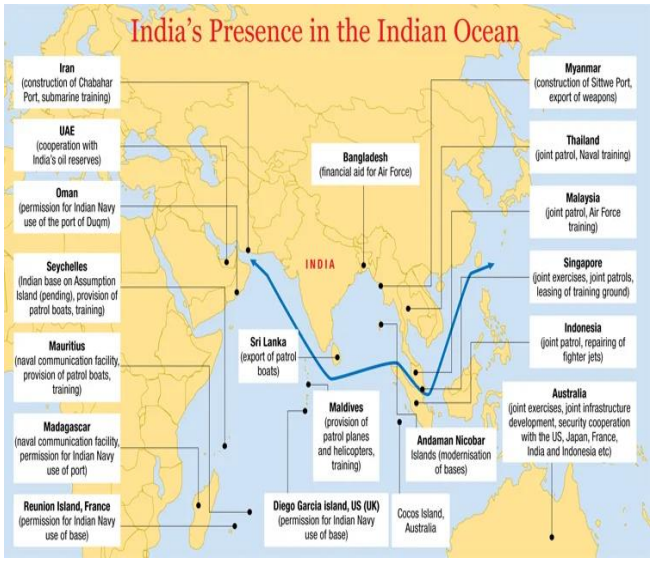
Common Virtual Assets

1. **Cryptocurrencies:** Decentralized mediums of exchange like **Bitcoin** and **Ethereum**.
2. **Stablecoins:** Pegged to stable assets like the USD or Gold (e.g., **USDT, USDC**) to avoid volatility.
3. **Non-Fungible Tokens (NFTs):** Unique digital certificates of ownership for art, music, or virtual real estate.
4. **Governance Tokens:** Assets that grant voting rights within a decentralized project (DAO).

Conclusion

India's 2026 strategy marks the end of the "wild west" era for offshore crypto. By integrating **AI-driven surveillance (Virtual Asset Lab)** with strict **PMLA enforcement**, New Delhi has made it clear that "offshore" does not mean "off-limits." As the FATF report notes, India's model of requiring a **local Principal Officer** and **mandatory FIU registration** is now becoming a global benchmark for preventing the "weaponization" of virtual assets by organized crime and terror networks.

IONS Maritime Exercise (IMEX) 2026 : India's Strategic Leadership in the IOR



Why in News?

In **early 2026**, the Indian Navy successfully hosted the **IONS Maritime Exercise (IMEX) Table Top Exercise (TTX) 2026** in Kochi, Kerala. This high-level strategic gathering coincided with a historic milestone: **India assuming the Chairmanship of the Indian Ocean Naval Symposium (IONS)** for the **2026–2028 cycle**. This marks India's return to the leadership role after a 16-year gap, reinforcing its position as a "Net Security Provider" in the region.

Note :

The IMEX-26 Table Top Exercise brought together delegates from **12 member nations**, including Bangladesh, France, Kenya, Maldives, Singapore, Sri Lanka, and Timor-Leste. Unlike live-fire drills, the **TTX** focused on simulated scenarios to address **non-traditional security threats**—such as piracy, maritime terrorism, and illegal trafficking—that currently disrupt global energy flows and trade routes in the Indian Ocean. The exercise is a key component of India's broader **MAHASAGAR** vision for regional stability.

Key Highlights of IMEX-26 (Kochi)

- **Participant Profile:** Attended by 12 nations across the South Asian, West Asian, East African, and South East Asian littorals.
- **Thematic Focus:** Navigating the "Gray Zone" of maritime security, specifically focusing on

Humanitarian Assistance and Disaster Relief (HADR) and counter-piracy operations.

- **Information Sharing:** Emphasis on enhancing **Maritime Domain Awareness (MDA)** through real-time intelligence exchange between the navies of the littoral states.
- **Observer Expansion:** The **Philippines** joined as the latest **Observer** nation in 2026, joining a group that includes China, Russia, Japan, and Spain.

Understanding the Indian Ocean Naval Symposium (IONS)

- **Origin:** Launched by the **Indian Navy in 2008**, it is a voluntary and cooperative forum for the navies of the Indian Ocean littoral states.
- **Membership:** Consists of **25 member countries** categorized into four geographic sub-regions.
- **The "Chairmanship" Shift:** After the 2024–2026 cycle led by Thailand, India has taken over the mantle for **2026–2028**, signaling a more proactive phase in regional naval diplomacy.

Strategic Sub-Regions of IONS

Sub-Region	Key Member Examples
South Asian	India, Bangladesh, Maldives, Pakistan, Sri Lanka.
West Asian	Iran, Oman, Saudi Arabia, UAE.
East African	Kenya, Mauritius, Seychelles, South Africa.
SE Asian & Australian	Australia, Indonesia, Singapore, Thailand, Timor-Leste.

Significance for India: The MAHASAGAR Vision

For New Delhi, leading IONS in 2026 aligns with its **MAHASAGAR** (Mutual and Holistic Advancement for Security and Growth Across Regions) policy:

1. **Net Security Provider:** India aims to be the first responder in times of maritime crises, providing HADR and protecting sea lanes of communication (SLOCs).
2. **Countering Hegemony:** By fostering a "voluntary and cooperative" local forum, India ensures that IOR security remains a collective responsibility of the littoral states, rather than outside powers.
3. **Diplomatic Outreach:** Including nations like **Timor-Leste** and the **Philippines** (as an observer) reflects India's expanding "Act East" footprint into the maritime domain.

Conclusion

The **IMEX-26** in Kochi is more than just a military exercise; it is a declaration of India's commitment to a **"Free, Open, and Inclusive Indian Ocean."** As the new Chair of IONS (2026–2028), the Indian Navy is set to steer the regional discourse toward collaborative security, ensuring that the "world's engine of trade" remains resilient against both traditional and emerging maritime threats.

EDITORIALS

Crux of The Hindu & Indian Express

Internal Security

Blue Sparrow Missile – Israel's Advanced Air-Launched Ballistic Missile

1. Why in News?

- Reports suggest that **Israel used the Blue Sparrow missile** in a strike on **Tehran on 28 February 2026**, which led to the death of **Iran's Supreme Leader Ayatollah Ali Khamenei**.
- The strike occurred during the **US–Israel–Iran conflict**, highlighting the role of **advanced missile technologies in modern warfare**.

2. What is the Blue Sparrow Missile?

- The **Blue Sparrow** is an **air-launched ballistic missile** developed by **Rafael Advanced Defense Systems**, an Israeli defence company.

- Key features:
  - Part of the **Sparrow missile family**
  - Designed primarily as a **target missile for missile defence testing**
  - Used to simulate **enemy ballistic missile threats**
- The **Sparrow missile family** includes:
  - **Blue Sparrow**
  - **Black Sparrow**
  - **Silver Sparrow**

3. Purpose of the Sparrow Missile Family

- These missiles were originally developed to test Israel's **Arrow Missile Defence System**.
- The **Arrow system** is designed to:
  - Detect **incoming ballistic missiles**
  - Intercept and destroy them **before they reach their targets**
- The **Sparrow missiles act as practice targets**, allowing the Arrow system to train against **realistic missile threats**.

4. Technical Specifications of Blue Sparrow

Important technical details:

- **Length:** 6.51 metres
- **Weight:** Around **1,900 kg**
- **Propulsion: Single-stage solid rocket motor**
- **Navigation: Dual GPS and Inertial Navigation System (INS)**

What is INS (Inertial Navigation System)?

- INS is an internal guidance system that:
  - Tracks the missile's **movement and direction**
  - Works **without external signals**
- This allows the missile to remain accurate even when **GPS signals are disrupted**.

5. How the Blue Sparrow Missile Works

- The missile follows a **ballistic flight path**.
- Step-by-step process:
  - The missile is **released from a fighter aircraft at high altitude**
  - It **accelerates upward into the upper atmosphere**
  - After reaching peak height, the **front section separates**
  - The separated section, called the **Re-entry Vehicle**, falls toward the target
- The re-entry vehicle uses **small thrusters** to maintain its **course and accuracy**.

6. Why the Missile is Difficult to Stop

- The **Blue Sparrow missile** becomes difficult to intercept due to its **steep descent trajectory**.
- Most air defence systems are designed to detect threats:
  - Approaching from the **horizon**
  - Moving at **angled trajectories**
  - However, the Blue Sparrow's **near-vertical drop from high altitude** gives **very little reaction time** to defence systems.
- This makes interception extremely challenging.

7. Connection with Real Ballistic Missiles

- The Blue Sparrow is designed to **imitate real missiles used in warfare**, such as:
  - **Shahab missiles**
  - **SCUD missile series**
- Because of this similarity, it is useful for **testing missile defence systems under realistic conditions**.

8. Role in the US–Israel–Iran Conflict

- During the **28 February 2026 strike on Tehran**:
  - Israel launched a **pre-emptive military strike**
  - The operation was reportedly coordinated with the **United States**
- The operation was named:
  - **Operation Roaring Lion** by Israel
  - **Operation Epic Fury** by the United States
- Following the attack, Iran declared **40 days of national mourning**.

9. Evolution into Advanced Combat Missiles

- Technology from the **Blue Sparrow missile** was later used to develop a more advanced weapon called **ROCKS**.

  Features of the ROCKS Missile

  - Highly **precision-guided missile**
  - Can hit targets **even when GPS signals are jammed**
  - Effective against **surface and underground targets**
  - Works **day or night and in all weather conditions**
  - Warhead capacity: **Up to 500 kg**
- Accuracy: **Within about 3 metres of the target**.

Conclusion

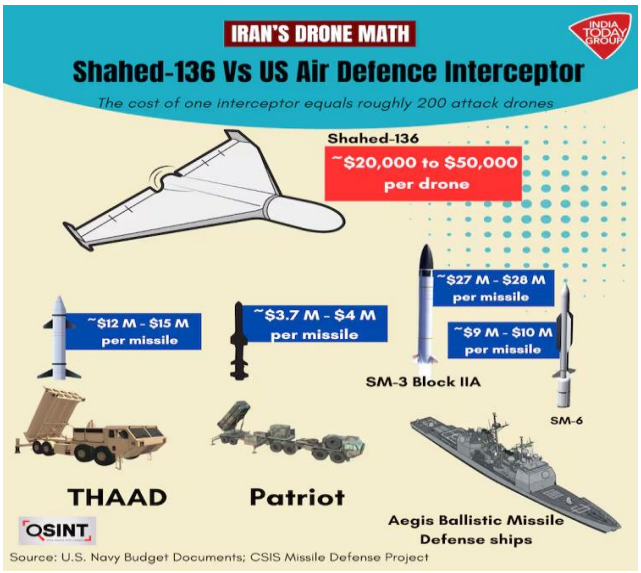
The **Blue Sparrow missile** is an advanced **air-launched ballistic missile system** originally designed for **missile defence testing** under Israel's **Arrow programme**. However, its advanced **ballistic flight profile, high speed and precision guidance systems** make it extremely difficult to intercept. The missile's technology has also contributed to the development of modern **precision strike weapons**, reflecting the rapid evolution of **missile technology in contemporary warfare**.

Shahed-136 Drone Attacks and Pressure on US Air Defence Systems

1. Why in News?

- During the ongoing **West Asia conflict**, **Iran has repeatedly used Shahed-136 drones** to attack military targets linked to **United States bases in the Gulf region**.
- Reports suggest these attacks have **damaged radar and communication infrastructure in several countries hosting US military facilities**.
- The conflict highlights a new warfare pattern where **low-cost drones challenge expensive air defence systems**.

2. What is the Shahed-136 Drone?



- The **Shahed-136** is an **Iranian loitering munition (suicide drone)**.
- Key characteristics:
  - Designed to **hover in the air before striking a target**
  - Operates as a **one-way attack drone**
  - Carries an **explosive payload**
- Because of its **low cost and simple design**, it can be **deployed in large numbers**.

3. Iran's Strategy: Projectile Saturation

- Iran is using a strategy known as **projectile saturation**.
- This means launching **large numbers of drones and missiles simultaneously** to overwhelm enemy **air defence systems**.
- Instead of relying on **precision weapons**, the strategy focuses on:
  - **Mass deployment**
  - **Continuous attacks**
  - **Exhausting enemy interception systems**

4. Cost Comparison: Drones vs Defence Missiles

- One major reason for the effectiveness of this strategy is the **huge cost difference** between attack drones and interception missiles.

  Cost of Shahed-136 Drone

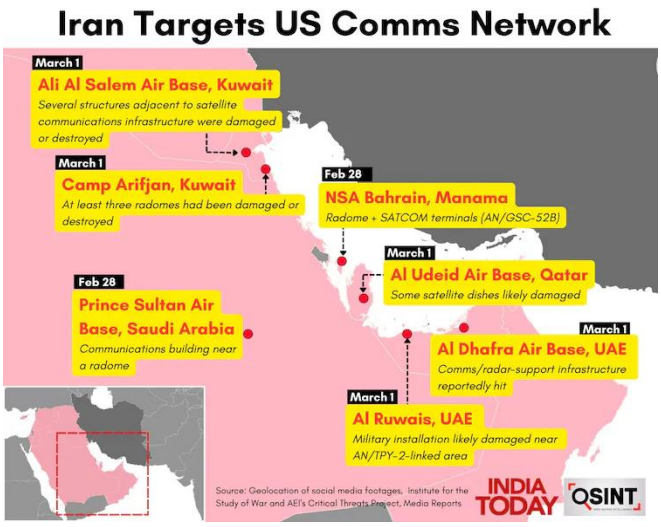
  - **USD 20,000 – USD 50,000**
  - About **₹18 lakh – ₹46 lakh**

Cost of Air Defence Interceptors

Defence System	Approx Cost per Interceptor
Patriot Missile System	USD **3.7 – 4 million** (₹34–37 crore)
THAAD Interceptor	USD **12 – 15 million** (₹110–137 crore)
SM-6 Missile	USD **9 – 10 million** (₹82–92 crore)
SM-3 Missile	USD **27 – 28 million** (₹247–256 crore)

- This means **one interceptor missile may cost as much as dozens or even hundreds of drones**.

5. Impact on US Air Defence Systems



- Iran's drone attacks are putting pressure on advanced **US missile defence systems**, including:
  - **Patriot Air Defence System**
  - **THAAD (Terminal High Altitude Area Defence)**
  - **Aegis Ballistic Missile Defence System**
- These systems rely on **high-cost interceptor missiles**, which are limited in number.
- If attacks continue at the same pace, there is concern that **interceptor stocks could be exhausted** faster than Iran runs out of drones.

6. Targeted Infrastructure in the Gulf Region

- Reports suggest Iranian strikes targeted **communication and radar infrastructure** at US-linked military bases in several Gulf countries.
- Possible affected locations include:
  - **Ali Al Salem Air Base – Kuwait**
  - **Camp Arifjan – Kuwait**
  - **Manama facilities – Bahrain**
  - **Prince Sultan Air Base – Saudi Arabia**
  - **Al Udeid Air Base – Qatar**
  - **Al Dhafra Air Base – United Arab Emirates**
  - **Al Ruwais military installation – UAE**

Damage reportedly included:

- **Radar domes (Radomes)**
- **Satellite communication terminals**
- **Communication buildings**

These facilities are part of the **regional air defence coordination network**.

7. Importance of Radar and Communication Systems

- These installations form the **communication backbone of US military operations in the Gulf**.
- They support:
  - **Missile detection systems**
  - **Satellite communication**
  - **Air defence coordination**
  - **Early warning networks**
- Damage to these systems can disrupt **regional defence coordination**.

8. About the THAAD Missile Defence System

- The **Terminal High Altitude Area Defence (THAAD)** system is one of the **most advanced missile defence platforms developed by the United States**.

Main Purpose

- Designed to intercept **short, medium and intermediate-range ballistic missiles** during the **final stage of flight**.

9. Key Features of THAAD

- Uses **"Hit-to-Kill" technology** (destroys targets through direct collision)
- Can intercept missiles **inside and outside the Earth's atmosphere**
- Engagement range: **150–200 km**
- Part of the broader **Ballistic Missile Defence System (BMDS)**.

10. Components of a THAAD Battery

A typical **THAAD battery** includes:

- **Interceptor missiles**
- **Truck-mounted launchers**
- **AN/TPY-2 radar system**
- **Fire control and communication unit**
- **Logistics and support equipment**

Personnel strength: around **90 personnel**.

A battery usually contains:

- **6 launchers**
- **48 interceptors**
- Each launcher carries **8 missiles**.

Conclusion

The increasing use of **Shahed-136 drones by Iran** shows a shift in modern warfare toward **low-cost, mass-produced weapons that can challenge expensive defence systems**. By launching large numbers of drones, Iran is attempting to **overwhelm and economically strain advanced US air defence systems**, highlighting a growing **asymmetry between inexpensive attack technologies and costly missile interception systems**.

India's Long-Range Swarm Attack Drone Sheshnaag-150

1. Why this news?

- India is developing a new long-range attack drone called **Sheshnaag-150**.
- It is designed to strengthen India's **future drone warfare capability**.
- The drone is currently **under testing and development**.

1. Background: Rise of Drone Warfare

Modern wars are increasingly using **unmanned aerial vehicles (UAVs)**.

Why drones are becoming important:

- They are **cheaper than missiles or fighter jets**.
- They can **stay in the air for long periods**.
- They can **strike targets with precision**.
- They reduce risk to soldiers.

Some well-known drones globally include:

- **Shahed-136** – used widely in modern conflicts.
- **LUCAS UAV** – an advanced American drone system.

These drones show that **low-cost drones can create strong battlefield impact**.

2. What is Sheshnaag-150?

- **Sheshnaag-150** is a **long-range swarm attack drone** being developed in India.
- It is designed by **Newspace Research Technologies** in **Bengaluru**.
- The drone completed its **first test flight about a year ago**.

Purpose

- To give India a **powerful indigenous unmanned strike capability**.
- To support the armed forces in **future high-technology warfare**.

3. Acceleration of Development

The development of the drone increased after **Operation Sindoor**.

During this period:

- The Indian military asked the company to **deploy some drone systems near the conflict zone**.
- This increased the need for **faster development of long-range swarm drones**.

So the project moved from a **research project to a system with operational importance**.

4. How the Sheshnaag-150 Works

Swarm Attack Concept

The drone uses a **swarm warfare strategy**.

Meaning:

- **Many drones fly together as a group**.
- They coordinate their actions.
- They attack targets **simultaneously**.

This helps to:

- **Overwhelm enemy air defence systems**.
- Increase the chances of hitting the target.

Key Capabilities

- **Range**
  - Operational range: **more than 1,000 km**
- **Endurance**
  - Can stay in the air for **over 5 hours**
- **Payload**
  - Can carry **25–40 kg warhead**
- **Possible targets**
  - Military vehicles

- Infrastructure
- Enemy positions

Autonomous Operation

- The drone is designed to work with **high automation**.
- It can:
  - **Identify targets**
  - **Track targets**
  - **Attack targets**
- All this can happen with **minimal human control**.

5. Technology Behind the Swarm

- The most important part of the system is its **control software**.
- A central **"mother code"** manages:
  - Sheshnaag-150 drones
  - Other drones built on the same platform

Role of Algorithms

- The software uses algorithms that allow drones to:
  - Communicate with each other
  - Coordinate movements
  - Adjust strategy during the mission
  - Continue operating even if some drones fail
- This makes the system **intelligent and resilient**.

6. Navigation Without Satellites

- Many drones rely on **satellite navigation systems (GPS)**.
- But in modern wars:
  - GPS signals can be **jammed by enemies**.
- To solve this problem, Sheshnaag-150 may use **visual navigation systems**.

Visual Navigation

- The drone navigates using **terrain images and onboard sensors**.
- It does not fully depend on satellites.

This improves its **survivability in electronic warfare environments**.

7. Comparison with Global Systems

Drone	Country	Special Feature
Shahed-136	Iran	Low-cost attack drone
LUCAS UAV	USA	Advanced communications, uses **Starlink**
Sheshnaag-150	India	Long-range swarm strike drone

8. Importance for India

The Sheshnaag-150 could help India:

- Strengthen **indigenous defence technology**
- Develop **low-cost precision strike capability**
- Improve **swarm warfare technology**
- Enhance **long-range unmanned attack capability**

It may become an important part of **India's future military drone fleet**.

Joint Military Exercise LAMITIYE – 2026

Why this news?

- An Indian military team has reached **Seychelles** to take part in **Exercise LAMITIYE – 2026**.
- The exercise is conducted between the **Indian Armed Forces** and the **Seychelles Defence Forces**.
- It will be held from **9 March to 20 March 2026** at the **Seychelles Defence Academy**.

1. What is Exercise LAMITIYE?

- **Exercise LAMITIYE** is a **joint military training exercise between India and Seychelles**.

Meaning of the name

- "LAMITIYE" means **"Friendship"** in the **Creole language**.

Key features

- It is a **biennial exercise** (held every two years).

- The exercise started in **2001**.
- It is usually conducted in **Seychelles**.

2. Participation in 2026 Exercise

- The **2026 edition** is special because **all three services of India's military are participating**.
- ***Indian participants***
  - Soldiers from the **Assam Regiment**
  - Personnel from the **Indian Navy**
  - Personnel from the **Indian Air Force**
- ***Important equipment involved***
  - **INS Trikand**
  - **Lockheed Martin C-130 Hercules** aircraft
- This shows **tri-service cooperation** from India.

3. Objectives of the Exercise

- The exercise aims to strengthen cooperation between the two countries.
- ***Main goals***
  - Improve **military coordination** between the forces.
  - Practice **joint operations** in difficult environments.
  - Share **skills, experience and best practices**.
- The exercise mainly focuses on **sub-conventional operations**.

What are sub-conventional operations?

These are military operations that deal with threats such as:

- Terrorism
- Insurgency
- Irregular armed groups

4. Training Activities During the Exercise

The 12-day exercise includes several activities:

1. **Field Training Exercises**
2. **Combat discussions**
3. **Case studies**
4. **Lectures and demonstrations**
5. **Tactical drills**

These drills help soldiers practice **real battlefield situations**.

5. Focus on Semi-Urban Warfare

- A major focus of the exercise is **operations in semi-urban areas**.
- Semi-urban areas are places that have:
  - Some urban features like buildings
  - But also open or rural surroundings.
- Military forces train to:
  - **Neutralize threats**
  - Use **modern equipment and technology**
  - Conduct **coordinated operations**

6. Final Validation Exercise

- The exercise will end with a **two-day validation exercise**.
- In this stage:
  - Soldiers apply everything they learned.
  - They perform **full mission simulations**.
- This helps check **readiness and coordination**.

7. Importance for India–Seychelles Relations

The exercise helps to:

- Strengthen **defence cooperation** between India and Seychelles
- Improve **interoperability between armed forces**
- Build **mutual trust and understanding**
- Enhance **security cooperation in the Indian Ocean region**

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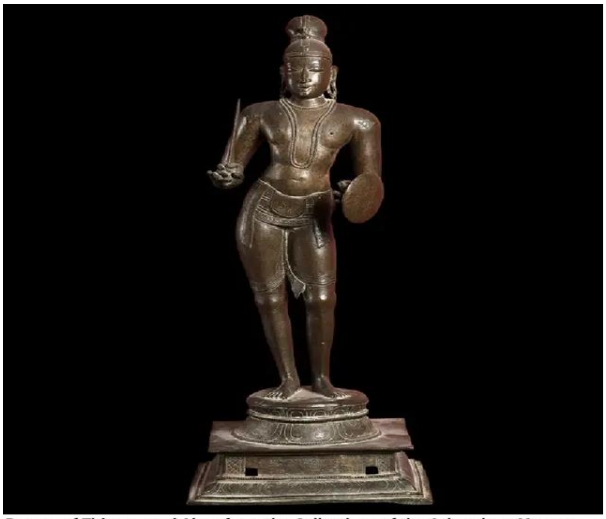
History, Art & Culture

Restoration of Saint Thirumangai Alvar Bronze Statue

Why in News?



Bronze of Thirumangai Alvar from the Collections of the Ashmolean Museum, Oxford

The **Ashmolean Museum, Oxford** returned a **16-century** bronze statue of **Saint Thirumangai Alvar** to the Government of India. Research established that the artifact originated from the **Soundararaja Perumal temple** in Tamil Nadu. The identification was coordinated by the **India Pride Project** using 1957 archival photographs from the French Institute of Pondicherry.

Thirumangai Alvar: Profile

- **Identity:** He was the **12th and last** of the Alvar saints.
- **Tradition:** Part of the Tamil poet-saints who devoted their lives to **Lord Vishnu** (Vaishnava tradition) during the **8th century CE**.
- **Spiritual Significance:** Considered an incarnation of Vishnu's **Sharanga bow**.

Early Life and Transformation

- **Original Name:** Kaliyan.
- **Background:** Born into the **Kallar community** (a warrior caste).
- **Military Career:** Served as a military commander and chieftain under the **Chola empire**, earning the title **Thirumangai Mannan**.
- **Skills:** Known as a highly skilled archer before his transformation to a life of Bhakti.

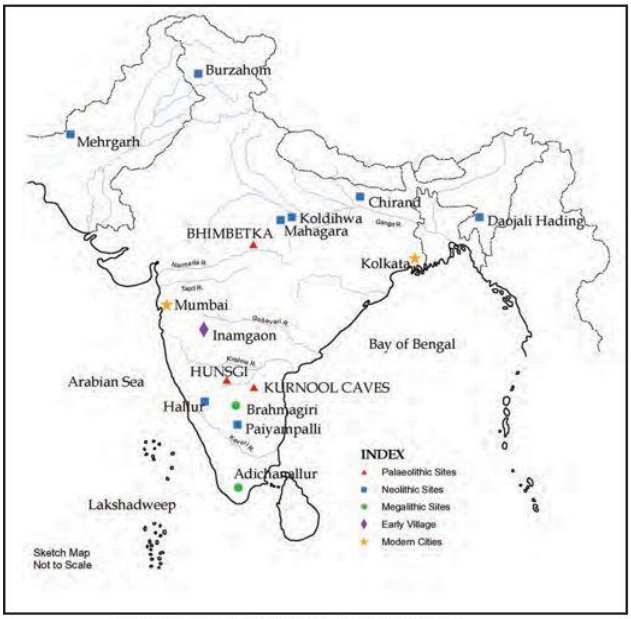
Literary and Temple Legacy

- **Poetic Title:** Renowned as **"Narkavi Perumal"** (excellent poet).
- **Major Works:** Authored over 1,000 verses, including:
    - **Periya Thirumozhi**
    - **Thirunedunthandakam**
    - **Thirukkuruthandakam**
- **Nalayira Divya Prabandham:** His works form a significant part of this sacred canon.
- **Temple Contributions:** * Visited all **108 Divya Desams** (sacred Vishnu temples).
    - Built one of the walls of the **Srirangam Sri Renganathaswamy Temple** in Tiruchirapalli.
    - Composed dedicated poems for Lord Sri Ranganathan.

Key Themes

- **Bhakti Movement:** His life represents the spiritual transition from worldly materialism and warfare to ultimate devotion.

Discovery of Megalithic Rock-Cut Chamber in Kasaragod



MAP: Some Important Archaeological Sites

Why in News?

A significant **Megalithic laterite rock-cut chamber** has been discovered in **Kasaragod district, Kerala**. The find offers fresh insights into prehistoric burial practices and the material culture of the region, featuring a burial complex where pottery of various shapes and sizes was interred as part of ritual belief systems.

Megalithic Culture: Overview

- **Definition:** A prehistoric cultural practice characterized by the erection of massive stone structures called **megaliths**.
- **Purpose:** These structures primarily served as **burial sites** and were typically located away from main habitation areas.
- **Time Period:** In South India, this culture spanned from **1000 BCE to 100 CE**, reaching its peak between 600 BCE and 100 CE.

Key Characteristics

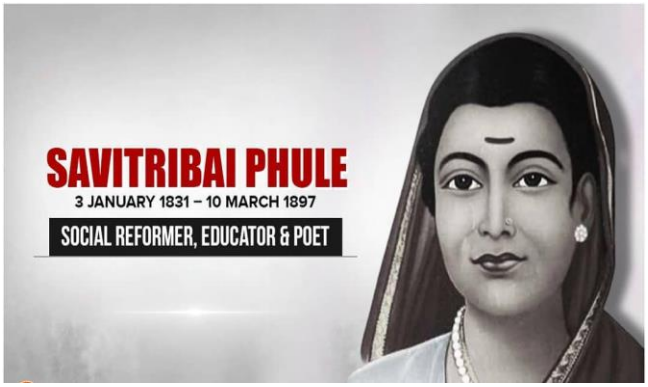
- **Iron Age Technology:** The Megalithic period in South India was a full-fledged **Iron Age culture**. Archaeological excavations have unearthed advanced iron objects, including weapons and agricultural implements.
- **Subsistence:** The Megalithic people practiced a mixed economy of **agriculture, hunting, fishing, and animal husbandry**.

- **Social Life:** Rock paintings found at various sites depict scenes of hunting, group dancing, and cattle raids, providing a glimpse into their social fabric.

Geographical Distribution

- **Primary Concentration:** Located in the **Deccan**, specifically south of the Godavari River.
- **Major Sites:** * **Karnataka:** Brahmagiri and Chandravalli.
    - **Maharashtra:** Junapani, Khapa, and Muhurjhari.
    - **Tamil Nadu:** Adichanallur.
    - **Others:** Presence also noted in the Punjab Plains, Indo-Gangetic basin, Rajasthan, Gujarat, and **Burzahom** (Jammu and Kashmir).

Tribute to Savitribai Phule : 129th Death Anniversary



Why in News?

On **10 March 2026**, the Union Home Minister paid tribute to **Savitribai Phule** on her death anniversary. He highlighted her pioneering role in bringing women into the fold of education and her relentless struggle against the deep-rooted social evils of the 19th century.

Savitribai Phule: A Profile

- **About:** A legendary social reformer from **Maharashtra**, she is widely regarded as the **"Mother of Indian Feminism"** and the first female teacher of India.
- **Early Life:** Born on **3 January 1831** in Satara, Maharashtra, into the **Mali community**. She was married at age 9 to the revolutionary thinker **Jyotiba Phule**, who educated her at home.
- **Resistance:** Throughout her life, she faced extreme orthodox opposition, including being pelted with stones and mud while walking to school, yet she never abandoned her mission.

Major Contributions to Indian Society

Pioneer of Women's Education

- **First Girls' School:** In **1848**, she and her husband founded India's first indigenous school for girls at **Bhide Wada, Pune**.
- **Expanding Reach:** The couple established a total of **18 schools** across the region.
- **Institutional Support:** She played a key role in the **Native Female School** in Pune and the **Society for Promoting the Education of Mahars, Mangs, and Others**, directly challenging caste-based educational barriers.

Advocate for Gender Justice

- **Mahila Seva Mandal (1852):** Founded this organization to raise awareness about women's rights, specifically campaigning against **child marriage** and the practice of shaving the heads of widows.
- **Widow Remarriage:** She was a vocal advocate for the rights of widows to remarry and live with dignity.

Social Protection and Equality

- **Balhatya Pratibandhak Griha (1863):** Established India's first home to prevent female infanticide. It provided a safe haven for pregnant Brahmin widows and rape victims to deliver their children.
- **Caste Equality:** She subverted non-Brahminical and patriarchal norms by initiating the first **Satyashodhak marriage**—a ceremony conducted without a priest and without a dowry.
- **Water Rights:** In a bold move against untouchability, she opened the well in her own house to people from the "untouchable" castes.

Literary Works

Savitribai was a prolific poet and author whose writings encouraged the marginalized to seek liberation through knowledge:

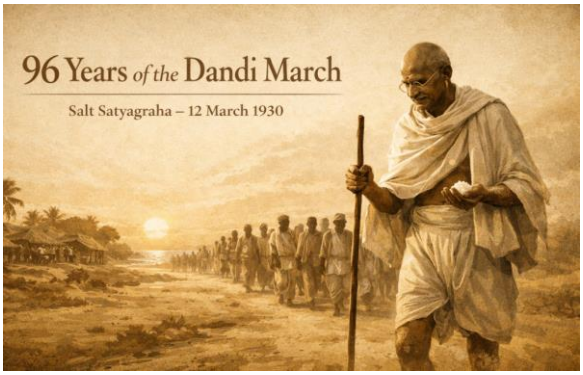
- ***Kavya Phule* (1854):** A collection of her poems.
- ***Bavan Kashi Subodh Ratnakar* (1892):** A biographical work in verse.

- **"Go, Get Education":** Her famous poem that urged the oppressed to break the shackles of slavery through schooling.

Legacy and Death

Savitribai Phule died a martyr's death in **1897**. She contracted the **bubonic plague** while selflessly carrying a plague-stricken child on her back to the clinic. Her legacy continues to inspire modern-day movements for Dalit rights and women's empowerment in India.

Dandi March : 96th Anniversary of Civil Disobedience



Why in News?

On **12 March 2026**, the Vice President paid homage to **Mahatma Gandhi** and the freedom fighters of the **Dandi March (1930)**. He noted that the march's spirit of self-reliance serves as a foundational guide for India's modern journey toward becoming an **Atmanirbhar** (Self-reliant) and **Viksit Bharat** (Developed India).

The Dandi March (Salt Satyagraha)

- **Context:** A non-violent protest led by Mahatma Gandhi against the **British Salt Tax**, which granted the Crown a monopoly and forced Indians to buy expensive, taxed salt.
- **Symbolism of Salt:** Gandhi chose salt because it was a **daily necessity** for every Indian regardless of caste or religion, making the British injustice universally relatable.
- **The 1882 Salt Act:** This law prohibited Indians from collecting or selling salt, even from their own shores, making it a powerful point of contention.

Timeline and Key Events

- **Commencement:** Started on **12 March 1930** from **Sabarmati Ashram** in Ahmedabad.
- **The Journey:** Gandhi set out with **78 initial followers** (Satyagrahis), covering a distance of **240 miles** over 24 days.
- **The Act of Defiance:** On **6 April 1930**, Gandhi reached the coastal village of **Dandi** (Gujarat) and broke the law by picking up a handful of natural salt from the shore.
- **Mass Movement:** This single act signaled the start of the **Civil Disobedience Movement** across India, involving millions in various forms of protest.

Pan-India Impact and Regional Leaders

The Dandi March inspired similar "Salt Marches" across the Indian coastline:

- **Tamil Nadu: C. Rajagopalachari** led a march from Trichinopoly to **Vedaranyam** on the Tanjore coast.
- **Kerala: K. Kelappan** (known as "Kerala Gandhi") organized a march from Calicut to **Payyanur**.
- **Odisha:** Under **Gopabandhu Chaudhury**, salt satyagraha was launched in the coastal districts of Balasore, Cuttack, and Puri.

British Repression

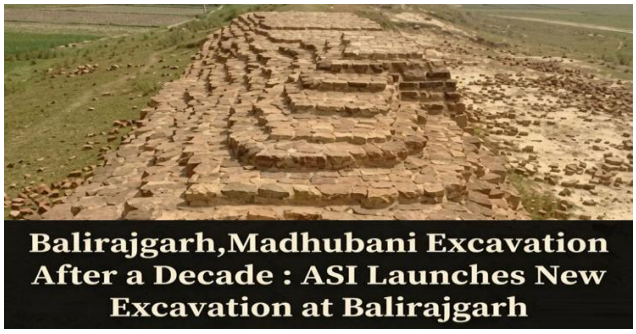
- **Mass Arrests:** Over 60,000 people were arrested, including Mahatma Gandhi on **5 May 1930**.
- **Dharasana Salt Works (21 May 1930):** After Gandhi's arrest, **Sarojini Naidu**, Imam Saheb, and Manilal Gandhi led a non-violent raid on the salt works.
- **Brutality:** American journalist **Webb Miller** reported on the horrific lathi-charge by police, which shocked the international community and exposed the moral bankruptcy of British rule.

Long-Term Significance

- **Global Influence:** The march proved the efficacy of **Satyagraha** (truth-force) and inspired future leaders like **Martin Luther King Jr.** in the US Civil Rights Movement.
- **Shift in Struggle:** It forced the British to recognize the Indian National Congress as an equal partner, leading to the **Gandhi-Irwin Pact (1931)** and the Second Round Table Conference.

Renewed Scientific Excavation at Balirajgarh Fort (2026)

Why in News?



On **March 28, 2026**, the **Archaeological Survey of India (ASI)** Patna Circle officially commenced a large-scale scientific excavation at the **Balirajgarh Fort** in Madhubani, Bihar. The fresh approval, granted in February 2026, aims to uncover the "virgin soil" of the site to determine the exact origins of human settlement in the **Mithila region**, potentially pushing its documented history back to the **Iron Age (1000–800 BCE)**.

Note :

The excavation is a strategic effort to explore the "Remains of Ancient Fort of Garh," a 176-acre fortified mound. This fifth round of digging seeks to bridge mythological narratives involving **King Bali** and the **Videha Kingdom** with material evidence. Using modern technology like **satellite mapping**, the ASI aims to overcome previous technical hurdles—such as a high water table—that halted work in 2014.

Key Highlights of Balirajgarh Fort

- **Historical Identity:** Locally known as *Raja Bali ka Garh*, it is traditionally associated with the benevolent asura King Bali and is considered a major administrative hub of ancient Mithila.
- **Protected Status:** Declared a **centrally protected monument** of national importance in 1938. It is one of 71 such sites in Bihar under the ASI's Patna Circle.
- **Structural Features:** The site features massive brick fortifications (approx. 5 meters wide at the base) and over 20 archaeological mounds spread across 176 acres.

Five-Fold Cultural Sequence

Previous digs have established that Balirajgarh was a continuously inhabited urban centre for over 1,500 years:

1. **Northern Black Polished Ware (NBPW) Phase (700–200 BCE):** Signifies early urbanization and the Mauryan era.
2. **Shunga Period:** Transition to massive brick-encased mud-core fortifications.
3. **Kushan Period:** Evidence of expanded trade and regional consolidation.
4. **Gupta Period:** Marks the cultural and economic peak of the settlement.
5. **Pala Period (up to 12th Century CE):** The final major phase of early medieval habitation.

Objectives of the 2026 Excavation

- **Search for "Virgin Soil":** Scientists aim to dig through all cultural layers to reach undisturbed ground, verifying if the site predates the Mauryan era and links to the **Iron Age Videha Kingdom**.
- **Modern Technology:** Deployment of **satellite imagery** and systematic mapping to identify high-interest areas and bypass environmental constraints.
- **Heritage Tourism:** JD(U) MP Sanjay Jha has proposed developing a **modern museum** at the site (modelled after the Patna Museum) to transform Balirajgarh into a global landmark for Mithila's legacy.

Archaeological Findings to Date

Past explorations (1962, 1972, 2013) have yielded a "treasure trove" of artifacts:

- **Pottery & Tools:** NBPW pottery shards, bone tools, and copper objects.
- **Art & Economy:** Terracotta figurines (human and animal), beads, inscribed seals, and **punch-marked coins**.
- **Defensive Architecture:** Massive boundary walls and a brick-concrete ramp built against the inner face of the fort.

Conclusion

The 2026 excavation at Balirajgarh is more than a simple dig; it is an attempt to give a scientific voice to the ancient civilization of Mithila. By integrating advanced dating techniques with traditional archaeology, the ASI hopes to place Balirajgarh on the global heritage map alongside legendary sites like Nalanda and Vikramshila.

60th Jnanpith Award: R. Vairamuthu Honoured

Why in News?

Eminent Tamil lyricist and author **R. Vairamuthu** has been selected for the **60th Jnanpith Award (2026)**. He is only the **3rd Tamil writer** to receive this prestigious honour and the **first ever** to be recognised specifically for his contributions to **Tamil poetry**. The award marks a historic milestone for Tamil literature, which last received the prize in 2002.

Note

The Jnanpith Selection Board announced Vairamuthu as the recipient for his lifetime contribution to Indian literature. A prolific figure in both literature and cinema, Vairamuthu has previously been honoured with the **Sahitya Akademi Award (2003)** for his seminal novel *Kallikattu Ithikasam*. His decorated career includes the **Padma Shri (2003)** and **Padma Bhushan (2014)**, alongside seven National Film Awards for Best Lyricist.

Profiles in Tamil Jnanpith History

Vairamuthu joins an elite group of Tamil literary giants who have received India's highest literary honour:

- **Akilan (1975):** The first Tamil recipient, awarded for his novel *Chittirappavai*.
- **Jayakanthan (2002):** Recognised for his profound impact on Tamil fiction and short stories.
- **R. Vairamuthu (2026):** The first to bring the award to the domain of Tamil poetry and lyrics.

About the Jnanpith Award

- **Nature:** Instituted in **1961** by Bharatiya Jnanpith, it is India's highest and most prestigious literary honour. It is often referred to as the **"Nobel Prize of Indian Literature."**
- **Inception:** Established by industrialist **Sahu Shanti Prasad Jain** and Rama Jain. The first award was presented in **1965** to **G. Sankara Kurup** (Malayalam).
- **Evolution of Criteria:** * **1965–1981:** Awarded for a specific outstanding book or work.
    - **1982–Present:** Awarded for an author's **lifetime contribution** to Indian literature.
- **Language Scope:** Covers all **22 languages** listed in the **Eighth Schedule** of the Constitution, as well as **English** (included since 2013).
- **Key "Firsts":**
    - **First Woman:** Ashapurna Devi (Bengali) in 1976.
    - **First English Winner:** Amitav Ghosh in 2018.

Prize and Symbolism

The award carries deep cultural and symbolic value:

- **Cash Prize: Rs 11 lakh**.
- **The Statuette:** A bronze replica of **Vagdevi (Saraswati)**, the goddess of knowledge, modelled after a 12th-century idol.
- **Citation:** A formal document detailing the author's literary impact.
- **Rule:** The award is **not given posthumously**. It is strictly for living Indian citizens.

Selection Process

The recipient is chosen by a high-level committee known as the **Selection Board (Selection Board/Pravara Parishad)**. This board consists of eminent scholars and literary critics who evaluate nominations based on:

- Originality and creative vision.
- Lasting impact on Indian society and literature.
- Consistent literary excellence over decades.

Conclusion

R. Vairamuthu's selection for the 60th Jnanpith Award underscores the vibrant and enduring nature of Tamil poetry. By bridging the gap between classical literary depth and modern mass-media appeal (through film lyrics), Vairamuthu has played a pivotal role in keeping the Tamil language central to India's contemporary cultural consciousness.

Sahitya Akademi Awards 2025 : Celebrating Multilingual Literary Excellence

Why in News?

The **Sahitya Akademi** has announced its prestigious annual awards for **2025**, recognizing outstanding literary contributions across **24 languages**. This year's selection follows a significant **July 2025 MoU** between the Ministry of Culture and its four autonomous bodies (including the Sahitya Akademi), which initiated a strategic restructuring of national cultural awards to enhance their prestige and transparency.

Note

The 2025 awards honor a diverse range of genres, including **8 poetry collections, 4 novels, 6 short story books, 2 essays, 1 literary criticism, 1 autobiography, and 2 memoirs**. The awards emphasize India's "unity in diversity" by placing regional languages on par with English and Hindi. Winners were selected based on works published within the preceding five years, ensuring that the honors reflect contemporary literary trends and social consciousness.

Notable Winners of 2025

- **English:** Former diplomat **Navtej Sarna** for his historical novel ***Crimson Spring***, which explores the Jallianwala Bagh massacre.
- **Hindi:** Renowned author **Mamta Kalia** for her evocative memoir ***Jeete Jee Allahabad***.
- **Tamil: Sa Tamilselvan** for his work of literary criticism, ***Thamiz Sirukathaiyin Thadangal***.
- **Linguistic Breadth:** Apart from the 22 languages in the **Eighth Schedule**, the Akademi also conferred awards in **English and Rajasthani**, fulfilling its mandate to support 24 distinct linguistic traditions.

About the Sahitya Akademi Award

- **Establishment:** Founded in **1954**, it is India's **second-highest literary honor** after the Jnanpith Award.
- **Institutional Role:** Conferred by the Sahitya Akademi, an autonomous organization under the **Ministry of Culture**, dedicated to the promotion of Indian letters.
- **Eligibility Criteria:** * The author must be an **Indian citizen**.
    - The work must be an **original contribution** (not a translation) published in the five years prior to the award year.
- **Nature of the Prize:** Winners receive a **copper plaque** (designed by Satyajit Ray), a shawl, a citation, and a **cash prize of Rs 1,00,000**.

The Selection Process

The awards are finalized through a rigorous three-tier process:

1. **Ground-level Recommendations:** Nominations from a vast network of language experts and literary bodies.
2. **Jury Evaluation:** A three-member jury for each language evaluates the shortlisted books.
3. **Executive Board Approval:** The final names are ratified by the Executive Board of the Sahitya Akademi.

Other Sahitya Akademi Recognitions

Beyond the main annual award, the Akademi also administers:

- **Yuva Puraskar:** Recognizing the best works by authors aged 35 and below.
- **Bal Sahitya Puraskar:** For excellence in children's literature.
- **Bhasha Samman:** Given to writers/scholars for significant contribution to classical or medieval literature and languages not formally recognized by the Akademi.
- **Sahitya Akademi Fellowship:** The highest honor of the Akademi, reserved for the "immortals of literature."

Conclusion

The Sahitya Akademi Awards 2025 reaffirm the vital role of literature in reflecting the evolving Indian identity. By honoring memoirs, criticism, and poetry alongside novels, the Akademi ensures a holistic celebration of the written word. This year's restructuring further aligns these awards with the national vision of fostering a vibrant, digitally-integrated, yet traditionally-rooted literary ecosystem.

Tribes Art Fest 2026 : Celebrating India's Tribal Heritage

Why in News?

The **Tribes Art Fest 2026**, organized by the **Ministry of Tribal Affairs**, concluded in late March 2026. The festival featured over **75 tribal artists** from across the country, showcasing more than **30 distinct tribal art traditions**. The event highlighted the role of tribal paintings in preserving indigenous knowledge and celebrated several art forms that have recently received **Geographical Indication (GI) tags**, including the **Saura paintings (2024)** and **Gond paintings (2023)**.

Major Tribal Painting Traditions of India

Painting Style	Primary State	Key Features & Technique	Core Themes
Warli Painting	Maharashtra	Uses basic geometric shapes (circle, triangle, square). Painted on **red ochre walls** using white rice-flour paste.	Social life, hunting, and the iconic **Tarpa dance**.
Gond Paintings	Madhya Pradesh	Famous for **intricate dots and lines** that create a sense of movement. Originally used charcoal and plant sap.	Nature, the **Tree of Life**, and Gond mythology.
Pithora Paintings	Gujarat / M.P.	A ritualistic tradition of the **Rathwa/Bhil** tribes. Features mandatory **horse motifs** (Baba Pithora).	Rituals to fulfill wishes or thank deities; painted by *Lakharas*.
Saura Paintings	Odisha	Similar to Warli but with **elongated figures** and decorative borders. Wall paintings are called *Ikons*.	Dedicated to the deity **Idital**; depicts village life and rituals.
Sohrai & Khobar	Jharkhand	**Sohrai** is for harvest/cattle; **Khobar** is matrimonial art using a **comb-cut technique** for bridal chambers.	Agricultural prosperity, fertility, and marriage.
Bhil Art	M.P. / Rajasthan	Recognized by **large, uneven dots**. Each artist has a signature dot pattern used to build the image.	Tribal myths, storytelling, and local legends (*Galo*).
Mandana Art	Rajasthan / M.P.	Practiced by the **Meena community**. Symmetrical white lime designs on a red clay/cow dung base.	Festivals, peacocks, and **footprints of Goddess Lakshmi**.

Significance of Tribal Art in 2026

- **GI Tag Momentum:** The recent surge in GI tagging (e.g., **Gond, Pithora, and Sohrai**) has provided legal protection to these styles, preventing "intellectual piracy" by commercial mass-market brands.
- **Economic Empowerment:** Through the **PM-JANMAN** mission and **TRIFED**, tribal artists are now directly linked to urban consumers, ensuring that **70-80% of the sale value** reaches the creator.
- **Environmental Sustainability:** These art forms are inherently "green," using sustainable materials like mud, cow dung, natural earth colors, and twigs instead of synthetic chemicals.

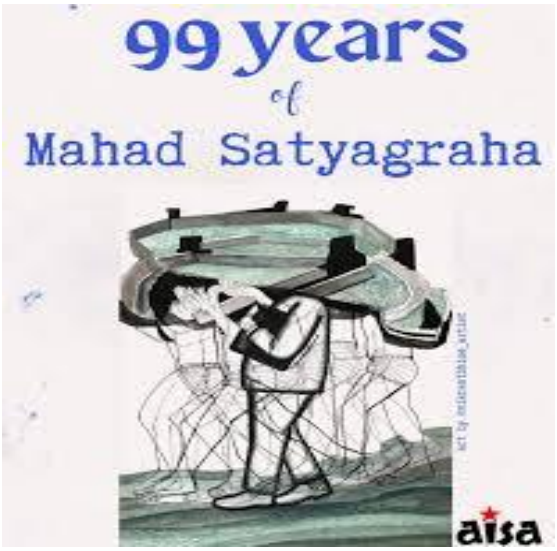
Challenges and the Path Forward

- **Preservation of Authenticity:** As tribal art enters the commercial space, there is a risk of "dilution" where traditional ritualistic meanings are lost to cater to modern aesthetics.
- **Digital Mapping:** Under the **Gyan Bharatam Mission (2026)**, the government has started geotagging traditional artist clusters to provide them with targeted infrastructure and training.
- **Youth Engagement:** Efforts are being made to include tribal art in school curriculums in states like **Madhya Pradesh and Odisha** to ensure the skill is passed to the next generation.

Conclusion

Tribal paintings are the "visual vocabulary" of India's oldest civilizations. The **Tribes Art Fest 2026** demonstrated that while these art forms are ancient, they remain highly relevant in a modern, digital world. By protecting these traditions through GI tags and providing them with global platforms, India is ensuring that its tribal heritage continues to thrive as a vibrant part of the **Viksit Bharat** cultural landscape.

Mahad Satyagraha : 99th Anniversary and the Centenary Countdown (2026)



Why in News?

On **March 20, 2026**, India observed the **99th anniversary** of the historic **Mahad Satyagraha**, marking the commencement of its **centenary year**. This day is officially celebrated as **Social Empowerment Day** across the nation to honor the landmark civil rights movement led by **Dr. B.R. Ambedkar** in 1927. The anniversary serves as a poignant reminder of the foundational struggle for human dignity and the right to basic resources like water.

Note :

The Mahad Satyagraha was a non-violent assertion by the "Depressed Classes" to exercise their legal right to use water from the **Chavdar Tale (Tasty Water Tank)** in Mahad, Maharashtra. It marked a definitive shift in Dalit politics from passive petitioning to **direct mass action**. The movement's legacy is directly woven into the Indian Constitution, specifically influencing **Article 15** (prohibition of discrimination) and **Article 17** (abolition of untouchability).

Key Facts: The Road to Mahad (1923–1927)

- **The Bole Resolution (1923):** Social reformer S.K. Bole passed a resolution in the Bombay Legislative Council to open public water sources and dharamshalas to all.
- **Local Resistance:** Despite the Mahad Municipal Council adopting this in 1924, dominant-caste groups blocked access, claiming the tank was private property.
- **The March (March 20, 1927):** Dr. Ambedkar led thousands to the Chavdar Tank. In a revolutionary act of defiance, he drank water from it, symbolically breaking the "purity-pollution" barrier.
- **The Aftermath:** Upper-caste groups performed a "purification ritual" using cow dung and urine. In December 1927, after being blocked from a second protest by a court injunction, Ambedkar famously **burned the Manusmriti**, rejecting the ideological basis of the caste system.
- **Legal Victory (1937):** After a decade of litigation, the **Bombay High Court** ruled that the tank was indeed public, granting legal access to all communities.

Significance and Modern Legacy

- **Feminist Assertion:** During the Satyagraha, Ambedkar addressed Dalit women, urging them to abandon symbols of "untouchability" (like specific ways of draping saris). Their immediate compliance made Mahad an early site of **intersectional feminism**.
- **Constitutional Blueprint:** The struggle at Mahad provided the moral and legal bedrock for the drafting of the Indian Constitution, ensuring that "access to shops, public restaurants, hotels, and places of public entertainment" became a fundamental right.
- **Direct Action Model:** It transformed the Dalit movement into a mass-mobilized civic force, moving beyond the "loyalty to the British" vs. "Congress" binary to focus on internal social reform.

Comparison: Mahad (1927) vs. Salt Satyagraha (1930)

The phrase **"Before salt, there was water"** highlights the parallel between Ambedkar and Gandhi's most iconic movements:

Feature	Mahad Satyagraha (1927)	Salt Satyagraha (1930)
The Oppressor	Internal (Caste System/Social Imperialism).	External (British Imperialism).
Core Resource	**Water:** A denial of humanity itself.	**Salt:** A denial of a natural economic right.
Objective	Social freedom and human dignity.	Political freedom and tax reform.
Vision of Swaraj	Social equality must precede political freedom.	Political independence is the primary goal.

Conclusion

As India enters the **centenary year** of the Mahad Satyagraha, the movement remains a North Star for social justice. It proved that "Swaraj" is incomplete without the democratization of basic resources. The 2026 celebrations emphasize that the struggle for water in 1927 was, at its heart, a struggle for the right to be human.

ASI Approves Excavations at 8 Key Sites in Tamil Nadu (2025–26)

Why in News?

In early **2026**, the **Archaeological Survey of India (ASI)**, acting under the *Ancient Monuments and Archaeological Sites and Remains Rules, 1959*, granted approval for scientific excavations at **8 key sites** across Tamil Nadu. This approval marks a significant phase in uncovering the "Sangam Age" urbanisation and its links to global maritime trade.

Note :

The excavations aim to bridge the historical gap between the **Iron Age** and the emergence of sophisticated urban settlements in the **Vaigai and Thamirabarani basins**. The Tamil Nadu government has allocated **7 crore** in its **2025-26 budget** for this archaeological mission, which will employ advanced scientific techniques like **Ancient DNA (aDNA) profiling** and **OSL dating** to rewrite the chronology of South Indian civilisations.

Key Sites and Their Archaeological Significance

Site Name	Historical Significance
Keeladi	A major urban settlement in the **Vaigai basin**; previous phases yielded evidence of the **Tamil-Brahmi script** and advanced drainage systems.
Adichanallur & Karivalamvanthanallur	Pre-eminent **Iron Age burial sites** providing deep insights into early mortuary practices and megalithic culture.
Vellalore	A crucial link to the **Roman Empire**, evidenced by the discovery of Roman jewelry and coinage, indicating ancient global trade.
Thelunganur	Signifies early technological mastery in **iron smelting and usage**, potentially dating back several millennia.
Nagapattinam & Pattinamarudur	Historical **Chola-era ports** reflecting early **Buddhist influence** and extensive Indian Ocean trade networks.
Manikollai	Identified as a major production center for **glass beads**, tied to long-distance trade with Southeast Asian countries.

Advanced Scientific Dating Techniques

To ensure the highest accuracy in establishing timelines, the 2026 excavations will utilize:

- **Ancient DNA (aDNA) Testing:** Extracting genetic material from skeletal remains found at sites like Adichanallur to trace the **migration patterns** and ancestral lineages of the ancient Tamil people.
- **Optically Stimulated Luminescence (OSL) Dating:** A geochronological technique that determines the last time **mineral grains** (quartz/feldspar) were exposed to sunlight. This is vital for dating soil layers where organic material for radiocarbon dating is missing.

Tamil Nadu's Archaeological Commitment

The state has positioned itself as a leader in "scientific archaeology" by:

- **Digital Mapping:** Geotagging all 8 sites for better conservation and future research.
- **Museum Integration:** Artefacts from these sites will be housed in state-of-the-art facilities like the **Keeladi Museum** to promote heritage tourism.
- **Global Collaboration:** Partnering with international labs for DNA sequencing to compare South Indian findings with global ancient civilisations.

Conclusion

The 2026 excavation cycle is more than a search for artefacts; it is an effort to provide a scientific foundation to the **Sangam literature**. By exploring port cities like Nagapattinam and industrial hubs like Manikollai, the ASI and the Tamil Nadu government are piecing together a story of a civilisation that was technologically advanced, literate, and globally connected over **2,500 years ago**.

Delhi High Court Slams ASI Over Tughlakabad Fort Encroachments (2026)

Why in News?

In **March 2026**, the **Delhi High Court** strongly criticized the **Archaeological Survey of India (ASI)** and a high-level committee for "prolonged delays" in surveying illegal encroachments at the historic **Tughlakabad Fort**. Expressing frustration that it took six months just to finalize a survey agency, the Court warned it would start summoning top officials if progress remained stalled. The Court granted a final **four-month extension** to complete the comprehensive survey, which is crucial for balancing heritage conservation with the rehabilitation of thousands of residents.

Note

The Tughlakabad Fort, a 14th-century citadel of "national importance," has been the subject of legal battles since 2001. While the **Supreme Court** ordered the removal of all encroachments in 2016, the process has been delayed by the "human problem" of displacing nearly **1,000 families** living in adjacent clusters. The current High Court intervention aims to implement a dual policy: freeing the fort's perimeter from illegal construction while ensuring a state-led **rehabilitation plan** for the evicted residents.

Key Facts About Tughlakabad Fort

- **Founder:** Built by **Ghiyasuddin Tughlaq** in **1321 CE**, the founder of the Tughlaq Dynasty.
- **The Third City:** It is recognized as the **third extant city of Delhi**, following Lal Kot and Siri.
- **Strategic Geography:** Constructed on the rocky southern spurs of the **Aravalli Hills**, utilizing natural granite for its massive, sloping (battered) walls.
- **Military Architecture:** Designed as an "impenetrable" defense against **Mongol invasions**, featuring massive bastions and a three-part layout (Citadel, Palace, and Residential City).
- **Rapid Decline:** Abandoned by **1325 CE** (just 4 years after construction) when Muhammad bin Tughlaq shifted the capital to **Daulatabad**.

The Encroachment Crisis and Judicial Orders (2025–2026)

- **The High-Level Committee:** In September 2025, the High Court formed a committee headed by the **Union Housing Secretary** to oversee a joint survey involving the DDA, MCD, and ASI.
- **The Delay (March 2026):** The Court noted with "displeasure" that between September 2025 and March 2026, the authorities failed to even issue a work order to a survey agency.
- **Contempt Warnings:** Simultaneously, the **Supreme Court** issued a **contempt notice** to the Director General of the ASI on March 28, 2026, for failing to submit status reports on 173 heritage monuments in Delhi, including Tughlakabad.
- **Police Protection:** Recognizing the volatility of demolition drives, the High Court has ordered the **Delhi Police Commissioner** to provide mandatory protection to survey teams facing threats from local encroachers.

Legend of the Curse: "Ya rahe ujjar, ya base gujjar"

A famous folklore attributes the fort's desolation to a curse by the Sufi saint **Nizamuddin Auliya**. When the Sultan prohibited laborers from working on the saint's stepwell (baoli) to prioritize the fort, the saint reportedly cursed the city: *"May it remain desolate or be inhabited by herdsmen."* Historically, the area was indeed inhabited primarily by nomadic **Gujjar** herdsmen for centuries before modern urban sprawl.

The Path Forward: Balancing Heritage and Humanity

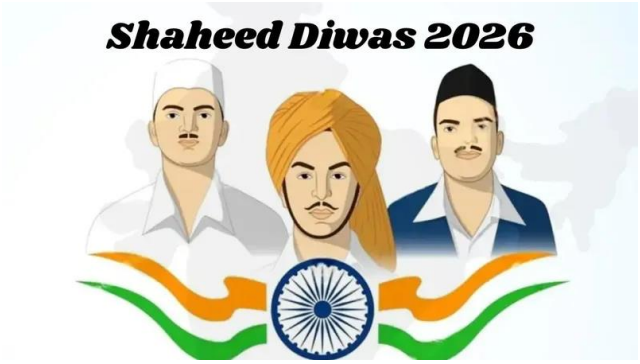
1. **Survey Deadline:** The ASI-appointed agency must now complete the mapping of illegal structures by **July 2026**.
2. **Rehabilitation Policy:** The Committee must draft a policy to distinguish between "original residents" and "commercial encroachers," potentially using schemes like **PM-Awas Yojana** for resettlement.

3. **Preservation Mandate:** Once cleared, the ASI intends to build a **3-km long boundary wall** and develop a "Heritage Zone" to prevent future land-grabbing.

Conclusion

The Tughlakabad case highlights the systemic struggle of the ASI in managing heritage sites within a densely populated metropolis. As the Court observes, the fort is a symbol of India's "historical ethos," but its preservation is currently trapped between **bureaucratic inertia** and the **socio-economic reality** of urban migration. The next four months will be a litmus test for whether the state can protect its past without compromising the dignity of its present-day citizens.

Shaheed Diwas (Martyrs' Day) 2026: Remembering the Trio of Revolutionaries



Why in News?

On **March 23, 2026**, India observed the **95th anniversary** of the martyrdom of **Bhagat Singh, Shivaram Rajguru, and Sukhdev Thapar**. This day, known as **Shaheed Diwas**, is honored across the nation to commemorate their supreme sacrifice in 1931 at the Lahore Central Jail. Their execution remains one of the most powerful catalysts in the history of the Indian independence movement, symbolizing the fire of youth and the hunger for complete sovereignty (*Purna Swaraj*).

Note :

The martyrdom of the trio—Bhagat Singh, Rajguru, and Sukhdev—represents the transition of the Indian freedom struggle from passive resistance to **revolutionary socialism**. Members of the **Hindustan Socialist Republican Association (HSRA)**, they sought to avenge the death of Lala Lajpat Rai and challenged the moral authority of the British Empire through symbolic acts of defiance. Their legacy continues to inspire the "Inquilab" (revolution) in Indian political and social thought.

Historical Context: The Path to Martyrdom

- **The Simon Commission Protest (1928):** During a peaceful protest, **Lala Lajpat Rai** was fatally injured in a lathi charge. His death sparked a vow of revenge among the young revolutionaries of the HSRA.
- **The Saunders Incident (1928):** In a plot to assassinate James A. Scott (the officer responsible for the lathi charge), Bhagat Singh and Rajguru accidentally killed **J.P. Saunders**. This became known as the **Lahore Conspiracy Case**.
- **Central Assembly Bombing (1929):** Bhagat Singh and **Batukeshwar Dutt** threw low-intensity smoke bombs into the Central Legislative Assembly to protest the repressive *Public Safety Bill* and *Trade Dispute Bill*. Their goal was not to kill, but "to make the deaf hear."
- **The Execution:** Despite massive public outpourings and pleas for clemency, the British government hanged the three revolutionaries on **March 23, 1931**. They were secretly cremated at **Hussainiwala** (Punjab) on the banks of the Sutlej River.

The Revolutionary Trio

1. Bhagat Singh (Shaheed-e-Azam)

- **Ideology:** A transition from a nationalist to a committed **Marxist and Atheist**. His essay *"Why I Am an Atheist"* is a classic in rationalist literature.
- **Organizations:** Joined the HRA (later HSRA) and founded the **Naujawan Bharat Sabha** in 1926 to mobilize the peasantry and youth.
- **Literary Contributions:** Wrote for journals like *Kirti* and *Akali* under pseudonyms such as **Balwant**, **Ranjit**, and **Vidhrohi**.
- **Iconic Slogan:** Popularized **"Inquilab Zindabad"** (Long Live Revolution), which replaced "Bande Mataram" as the primary slogan of the youth.

2. Sukhdev Thapar

- **The Strategist:** A core member of the HSRA's central committee and the chief organizer of revolutionary cells in Punjab.
- **Education:** Like Bhagat Singh, he was a product of the **National College, Lahore**, where he specialized in Indian history and revolutionary movements.

3. Shivaram Rajguru

- **The Marksman:** Hailing from Maharashtra, he was a skilled gunman and a devotee of physical culture and Sanskrit.
- **Role:** He was the one who fired the first shot at Saunders, showing the pan-India nature of the HSRA, which brought together revolutionaries from Punjab, UP, and Maharashtra.

Significance in Modern India

- **Social Empowerment:** March 23 serves as a reminder that the revolutionaries fought not just for political freedom from the British, but for an India free from **exploitation of man by man**.
- **Youth Mobilization:** Bhagat Singh remains the most popular icon for Indian youth, representing courage, intellectual rigor, and the spirit of questioning authority.
- **Martyrs' Memorials:** National tributes are paid annually at the **Hussainiwala National Martyrs Memorial** in Punjab and at the **National War Memorial** in New Delhi.

Conclusion

Shaheed Diwas is more than a day of mourning; it is a day of national introspection. The "Inquilab" envisioned by Bhagat Singh, Rajguru, and Sukhdev was a social and economic transformation that remains an unfinished agenda for the world's largest democracy. Their sacrifice ensured that the flame of independence would never be extinguished until the last colonial officer left Indian soil.

EDITORIALS

Crux of The Hindu & Indian Express

History, Art & Culture

67,800-Year-Old Hand Stencil – Oldest Known Rock Art Found in Indonesia

1. Why in News?

- A **hand stencil rock painting** discovered in a **limestone cave in Sulawesi, Indonesia**, has been dated to **at least 67,800 years old**.
- It is now considered the **oldest known rock art in the world**.
- The discovery pushes back the timeline of **human symbolic expression and artistic activity**.

2. Where Was the Discovery Made?

- The rock art was discovered in **Liang Metanduno Cave** on **Muna Island**, located near **Sulawesi in Indonesia**.
- Important facts:
  - The cave lies in Southeastern Sulawesi
  - This region is part of Wallacea, a group of islands between Asia and Australia
  - The area had previously received **limited archaeological research**

3. What Was Discovered?

- Researchers found a **hand stencil painting** created by spraying pigment around a human hand placed on the cave wall.

- This created a **negative handprint**, which is a common form of **prehistoric rock art**.
- However, this stencil shows a **unique feature**:
- The **finger shapes were narrowed**, giving it a **claw-like appearance**
- This may represent **symbolic ideas linking humans and animals**.

4. How Was the Age Determined?

- Scientists used **Uranium-Series Dating** to determine the age of the painting.
- Method used:
  - **Calcite mineral layers** formed naturally on top of the painting
  - These mineral deposits were analysed using **laser ablation uranium-series techniques**
- Results:
  - Mineral layer age: **71,600 years**
  - Minimum age of the painting: **67,800 years**
- This establishes the **oldest confirmed cave art date so far**.

5. Earlier Oldest Rock Art

- Before this discovery, the oldest known rock art was:
  - Cave art in **Spain**
  - Believed to be created by **Neanderthals**
- The Sulawesi discovery is **more than 16,000 years older** than earlier examples from **Indonesia's Maros–Pangkep caves**.

6. Other Rock Art Discoveries in the Region

- Researchers documented **44 rock art sites** in **Southeastern Sulawesi**.
- Key findings:
  - **11 motifs dated from 8 sites**
  - **7 hand stencils**
  - Several **figurative and geometric paintings**
- Evidence shows artistic activity continued in the region **until around 20,000 years ago**.

7. Link with Early Human Migration

- The discovery also helps explain **early human migration patterns**.
- During the **Pleistocene period**:
  - **Australia, New Guinea and Tasmania** formed a single landmass called **Sahul**
  - Early humans likely travelled through **Wallacea islands** to reach Sahul
  - Some theories suggest humans reached the region **around 50,000 years ago**, while others propose **65,000 years ago**.
- The **67,800-year-old rock art** supports the idea that **modern humans arrived earlier than previously believed**.

8. Importance of the Discovery

The finding is significant for several reasons:

- Shows **early humans created symbolic art much earlier**
- Provides evidence of **advanced cognitive abilities**
- Supports theories of **early seafaring migration across Southeast Asia**
- Highlights **Sulawesi as an important prehistoric cultural region**

Conclusion

The discovery of a **67,800-year-old hand stencil in Sulawesi, Indonesia**, is the **oldest known rock art in the world**. It reveals that early humans had **symbolic thinking and artistic traditions far earlier than previously believed**, and it also strengthens evidence about **early human migration routes toward Australia and the Pacific region**.

Golestan Palace Damaged During Iran Conflict

1. Why in News?

- The historic **Golestan Palace** in **Tehran, Iran** has reportedly suffered damage during the ongoing **Iran conflict**.

- According to reports, **airstrikes near Arag Square in southern Tehran** caused damage to parts of the palace complex.
- Images circulating online show:
  - **Shattered glass**
  - **Broken windows**
  - **Debris inside the complex**
- The **full extent of the damage has not yet been independently confirmed**.

2. About Golestan Palace

- **Golestan Palace** is located in **central Tehran** and is one of the most important symbols of **Persian royal heritage**.
- Key facts:
  - Recognised as a **UNESCO World Heritage Site**
  - Reflects **centuries of Persian architecture and art**
  - Combines **traditional Persian design with European decorative influences**
- Before the reported damage, **eight buildings of the palace complex functioned as museums**, displaying:
  - **Manuscripts**
  - **Historic photographs**
  - **Royal artefacts**

3. Historical Background

- The origins of the palace date back to the **16th century during the Safavid dynasty**.
- Important historical developments:
  - **Shah Tahmasp I** built the early citadel of Tehran
  - Later expanded by **Shah Abbas the Great**, who developed gardens and fortifications
  - Became the **royal residence during the Qajar dynasty (1794–1925)**
- During this period, **Tehran was declared the capital of Iran**, and Golestan Palace became the **main royal complex**.

4. Role During the Pahlavi Dynasty

- Under the **Pahlavi dynasty (1925–1979)**, the palace was mainly used for **official ceremonies and state events**.
- Important events held here:
  - **Coronation of Reza Shah (1926)**
  - **Coronation of Mohammad Reza Shah (1967)**
- However, parts of the original palace complex were **demolished during modernisation projects in the 20th century**.

5. Major Architectural Features of the Palace

- Before the reported damage, the **Golestan Palace complex included 17 structures**, such as halls, museums and royal chambers.
- Important highlights include:
- ***Marble Throne (Takht-e Marmar)***
  - Built between **1747–1751**
  - Symbolised **royal authority**
- ***Mirror Hall (Talar-e Ayeneh)***
  - Famous for intricate **mirror work (Ayeneh-kari)**
- ***Brilliant Hall (Talar-e Brelian)***
  - Known for **decorative craftsmanship**
- ***Windcatcher Mansion***
  - Designed for **natural ventilation during hot weather**
- ***Salam Hall***
  - Used to display **royal treasures and ceremonial objects**

6. Cultural Importance

- The palace is a major symbol of **Iran's cultural and historical identity**.
- Other notable features:
  - Houses a **19th-century photographic archive**
  - Reflects early use of **photography in the Qajar royal court**
  - Appeared on the **reverse side of a 5,000 Iranian rial banknote (1974)**

7. UNESCO's Response

- **UNESCO** expressed concern about the reported damage.
- According to UNESCO:
  - The palace may have been affected by **debris and shockwaves from nearby airstrikes**
  - The organisation is **monitoring the situation**
- UNESCO also reminded that **cultural heritage sites are protected under international law**.

8. International Legal Protection

- Cultural heritage sites like **Golestan Palace** are protected under:
    - **1954 Hague Convention for the Protection of Cultural Property in Armed Conflict**
    - **1972 UNESCO World Heritage Convention**
- These agreements require countries to **protect cultural heritage during wars and conflicts**.

Conclusion

The reported damage to **Golestan Palace**, a **UNESCO World Heritage Site in Tehran**, highlights the vulnerability of **cultural heritage during armed conflicts**. The palace represents centuries of **Persian history, architecture and royal culture**, and protecting such heritage sites is essential for preserving **global cultural legacy**.

Guru Hargobind Sahib Ji : Remembering the Sixth Sikh Guru (2026)

Why in News?

On **March 22, 2026**, the Union Home Minister and leaders across India paid tribute to **Guru Hargobind Sahib Ji** on his **Jyoti-Jyot Diwas** (the anniversary of his immersion into the divine light). The day was observed with deep reverence to honor his transformative role in Sikh history, specifically his establishment of the **Saint-Soldier tradition** and his unwavering commitment to protecting humanity against tyranny.

Note

Guru Hargobind Sahib Ji, the sixth of the ten Sikh Gurus, shifted the trajectory of the Sikh faith by integrating spiritual authority with temporal power. Following the martyrdom of his father, **Guru Arjan Dev Ji**, he recognized that the community needed to be physically and militarily capable of defending the oppressed. His legacy is defined by the construction of the **Akal Takht** and the revolutionary concept of **Miri-Piri**, which continues to guide the socio-political identity of Sikhs worldwide.

Key Life Facts and Military Prowess

- **Early Life:** Born in **1595** in Guru Ki Wadali (Amritsar). He assumed Guruship in **1606** at the young age of eleven.
- **The "Saint-Soldier" (Sant-Sipahi):** He was the first Guru to maintain a standing army. He excelled in martial arts, hunting, and weaponry, encouraging his followers to train in self-defense to protect the faith.
- **Mughal Confrontations:** He successfully led Sikh forces in four major battles against the armies of **Emperor Shah Jahan** (including the Battles of Amritsar and Kartarpur), proving that spiritual devotion could coexist with military excellence.

Spiritual and Temporal Foundations

- **Doctrine of Miri-Piri:** Upon his accession, he wore **two swords**:
    - **Miri:** Symbolizing temporal, political, and worldly power.
    - **Piri:** Symbolizing spiritual authority and inner devotion.
- **The Akal Takht (1609):** He constructed the "Throne of the Timeless One" directly opposite the Harmandir Sahib. While the Golden Temple remained a place of prayer, the Akal Takht became the **highest seat of temporal authority**, where political and military decisions were made.
- **Kiratpur Sahib:** He founded this city in the Shivalik foothills, which served as a major center for the faith during his final years.

Legacy of Compassion: Bandi Chhor Divas

One of the most celebrated episodes of his life occurred at the **Gwalior Fort**, where he was imprisoned by Emperor Jahangir.

- **The Liberation:** When offered release, the Guru refused to leave unless **52 captive Hindu princes** were also freed.

- **The Clever Strategy:** He wore a special cloak with 52 tassels; each prince held onto a tassel and walked out to freedom with him.
- **Celebration:** This event is celebrated annually as **Bandi Chhor Divas** (coinciding with Diwali), marking the triumph of selfless liberation over personal freedom.

Conclusion

Guru Hargobind Sahib Ji's life was a masterclass in balancing the "inner" and the "outer" world. By establishing the **Akal Takht**, he ensured that the Sikh community would never be a passive witness to injustice. His 2026 Jyoti-Jyot Diwas serves as a reminder that true spirituality includes the courage to stand against oppression—a legacy that remains the heartbeat of the Sikh identity.

Preah Vihear Temple : Structural Crisis Amid Military Escalation (2026)

Why in News?

The **Preah Vihear Temple**, an 11th-century Khmer masterpiece, is facing a severe structural crisis following intense military skirmishes between **Cambodia and Thailand** throughout **2025 and early 2026**. In **March 2026**, the International Coordinating Committee (ICC-Preah Vihear) reported damage at **562 points** across the complex, with all **five gateway pavilions (Gopuras)** sustaining significant hits from heavy artillery and drone strikes during the conflict.

Note

The Preah Vihear Temple is a **UNESCO World Heritage Site** perched atop the Dangrek Mountains. While the **International Court of Justice (ICJ)** awarded the temple to Cambodia in 1962 and 2013, the surrounding 4.6 sq km area remains a flashpoint. The latest war (July–December 2025) has not only displaced over **500,000 civilians** but has also halted critical restoration projects led by **India, China, and the United States**, leaving the "Temple of the Cliff" in its most precarious state in decades.

Key Highlights of the Temple and the Conflict

- **The Monument:** Originally a **Shiva temple**, it is unique for its **800-meter north-south axis** (most Khmer temples face east). It symbolizes **Mount Meru**, the center of the universe in Hindu and Buddhist cosmology.
- **The Damage (2025–26):** * **Gopura V (India-Cambodia Project):** Extensive structural damage; conservation equipment was destroyed.
    - **Gopuras I, II, & III (China-Cambodia Project):** Severe impact, with some sections losing their original form entirely.
    - **Northern Staircase (US-Cambodia Project):** Both original and restored sections were heavily damaged by artillery.
- **The Strategic Trigger:** The conflict escalated in **July 2025** following a landmine incident and rocket attacks, transitioning into a full-scale border war involving airstrikes and heavy armor.

The Territorial & Legal Dispute

Basis	Details
1904 Treaty	France (for Cambodia) and Siam (Thailand) initially placed the temple in Thailand.
1907 Map	French officers drew a map placing it in Cambodia; Thailand didn't protest for decades.
1962 ICJ Ruling	The Court awarded the temple to **Cambodia**, citing the 1907 map.
2013 Reaffirmation	The ICJ clarified that the land adjacent to the temple also belongs to Cambodia.
2026 Status	A fragile ceasefire (Dec 2027) holds, but over **36,000 people** remain displaced as of March 2026.

International Response and Restoration

- **India's Role:** India's **Archaeological Survey of India (ASI)** has been a lead partner in restoring Preah Vihear since the 1980s. In **December 2025**, India expressed deep concern over the "unfortunate" damage to the shared cultural heritage of humanity.
- **UNESCO Alarm:** The World Heritage Committee has called for an immediate permanent cessation of hostilities to allow

technical teams to stabilize the crumbling sandstone structures.

- **ASEAN Mediation:** While Malaysia (2025 Chair) attempted to broker peace, the conflict remained largely a bilateral military struggle with high nationalist sentiment on both sides.

Strategic Significance of the Location

- **Geographical Advantage:** Situated at **525 meters** on a cliff, the temple offers a commanding view of the Cambodian plains, making it a "natural fortress" for military observation.
- **The "Blue Line" Tensions:** Like the Litani River in Lebanon, the border "Blue Line" here is a site of constant troop buildup and "cartographic warfare."

Conclusion

The **Preah Vihear Temple** is a victim of its own geography. In 2026, it stands as a scarred reminder of how unresolved colonial borders can threaten the world's most precious cultural treasures. For the temple to survive another millennium, the "path of dialogue" urged by the international community must replace the artillery fire that has defined the Dangrek Mountains for the past year.

Kakori Train Action (1925) : Honoring the Legacy of Revolutionary Heroes (2026)

Why in News?

In **April 2026**, the **Uttar Pradesh Chief Minister** ordered strict punitive action against officials after the statues of **Ram Prasad Bismil, Ashfaqulla Khan, and Roshan Singh**—iconic heroes of the **Kakori Train Action**—were razed during a road beautification project. The incident sparked widespread public outrage, leading the state government to mandate the immediate and respectful re-installation of the statues, ensuring that the sanctity of India's revolutionary heritage is maintained during urban development.

Note

The Kakori Train Action (August 9, 1925) remains one of the most daring and ideologically significant acts of the Indian freedom struggle. Executed by the **Hindustan Republican Association (HRA)**, it was a direct challenge to British financial and colonial authority. Beyond the tactical objective of funding the revolution, the event is immortalized as a symbol of deep **Hindu-Muslim unity** and a precursor to the socialist turn of the Indian revolutionary movement under **Bhagat Singh**.

Key Facts of the Kakori Train Action (1925)

- **The Mission:** Revolutionaries intercepted the **8-Down train** traveling from Shahjahanpur to Lucknow near **Kakori station**. They successfully looted the British state treasury to fund their armed struggle for independence.
- **The Organization (HRA):** Founded in **1924 in Kanpur** by Sachindranath Sanyal and others, the HRA sought to establish a "Federal Republic of the United States of India" through an organized armed rebellion.
- **The Protagonists:** The action was led by **Ram Prasad Bismil** and **Ashfaqulla Khan**. Other key participants included **Chandrashekhar Azad**, Rajendra Lahiri, Thakur Roshan Singh, Sachindranath Bakshi, and Manmathnath Gupta.
- **The Escape:** While most participants were eventually captured, **Chandrashekhar Azad** famously managed to evade the police net, continuing the struggle underground.

The Judicial Crackdown and Martyrdom

Following the event, the British authorities launched the **Kakori Conspiracy Case (1925)**:

- **The Trial:** An 18-month legal battle that drew nationwide attention.
- **The Hangings (December 1927):** Four top leaders were executed by the British:
    1. **Ram Prasad Bismil** (Gorakhpur Jail)
    2. **Ashfaqulla Khan** (Faizabad Jail)

3. **Thakur Roshan Singh** (Naini Allahabad Jail)
4. **Rajendra Lahiri** (Gonda Jail—hanged two days early on Dec 17)

Ideological and Historical Legacy

- **Hindu-Muslim Unity:** The bond between Bismil and Ashfaqulla Khan remains a powerful testament to communal harmony in the fight for the motherland.
- **Transition to Socialism:** The sacrifice of the Kakori martyrs paved the way for the reorganization of the HRA into the **Hindustan Socialist Republican Association (HSRA)** in 1928, bringing a more defined socialist vision to the revolution.
- **Shift in Name:** In 2021, the Uttar Pradesh government officially renamed the "Kakori Train Conspiracy" to **"Kakori Train Action,"** asserting that the act was a heroic feat of resistance rather than a "conspiracy."

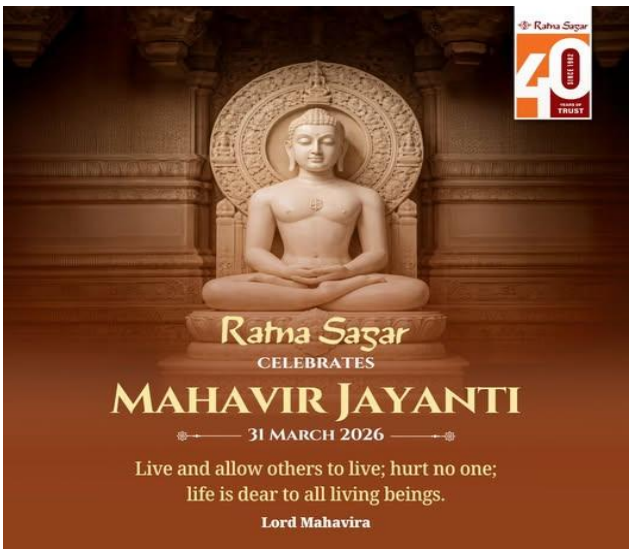
Commemorative Landscape in Uttar Pradesh

- **Kakori Memorial:** A dedicated memorial stands at the site of the action near Lucknow, serving as a site for annual tributes on August 9th.
- **Martyrdom Sites:** The jails where the heroes were hanged (Gorakhpur, Faizabad, Gonda, and Naini) house small museums and memorials.
- **2026 Beautification Row:** The recent controversy in **Auraiya/Lucknow** regions emphasizes the government's renewed focus on protecting these "Prateek Chinh" (symbols of pride) from administrative negligence.

Conclusion

The **Kakori Train Action** was not merely a train robbery; it was a loud declaration of India's thirst for self-rule. In 2026, as Uttar Pradesh reconciles urban modernization with historical preservation, the legacy of Bismil, Ashfaq, and Roshan Singh serves as a reminder that the foundation of modern India was built on the inclusive and fearless spirit of its revolutionary youth.

Mahavir Jayanti : Celebrating the Legacy of Lord Vardhamana Mahavira (2026)



Why in News?

On **March 31, 2026**, India celebrated **Mahavir Jayanti** (Mahaveer Janma Kalyanak), marking the birth anniversary of **Lord Vardhamana Mahavira**, the 24th and final Tirthankara of Jainism. The President of India and national leaders extended their greetings on this auspicious occasion, which fell on the *Trayodashi tithi* of the *Shukla Paksha* in the month of Chaitra. The day serves as a global reminder of the principles of **Ahimsa** (non-violence) and **Anekantavada** (pluralism).

Note

Lord Mahavira was a contemporary of Gautama Buddha and a profound reformer of Jain philosophy. Born into royalty in **599 BCE**, he renounced his kingdom at age 30 to seek spiritual truth. After 12 years of intense penance, he attained **Kevala Jnana** (omniscience). His teachings, centered on the **Five Mahavratas** and the **Tri-Ratna**, continue to provide a blueprint for ethical living, environmental consciousness, and social harmony in the 21st century.

Life Sketch of Lord Mahavira

- **Birth:** Born in **Kundalagrama** (near Vaishali, Bihar) to King Siddhartha and Queen Trishala of the Ikshvaku dynasty.
- **Renunciation:** At 30, he abandoned material wealth and family to lead the life of an ascetic.

- **Enlightenment:** Attained supreme knowledge under a **Sal tree** on the banks of the **Rijupalika river**.
- **Titles:** Earned the name **'Jina'** (The Conqueror of senses) and **'Mahavira'** (The Great Hero).
- **Nirvana:** Attained Moksha at the age of 72 in **Pavapuri** (near Rajgir, Bihar).

Core Teachings and Philosophy

The Five Mahavratas (Great Vows)

Mahavira expanded the four vows of the 23rd Tirthankara, Parshvanatha, by adding the fifth vow of chastity.

Vow	Principle	Meaning
Ahimsa	Non-violence	Not harming any living being in thought, word, or deed.
Satya	Truthfulness	Commitment to honesty and refraining from deception.
Asteya	Non-stealing	Not taking what is not given or acquired legitimately.
Aparigraha	Non-possessiveness	Detachment from material wealth and worldly desires.
Brahmacharya	Chastity	Strict self-control and restraint over sensual pleasures.

The Tri-Ratna (Three Jewels)

According to Mahavira, the path to liberation is paved by:

1. **Samyak Darshan:** Right Faith.
2. **Samyak Gyan:** Right Knowledge.
3. **Samyak Charitra:** Right Conduct.

Key Philosophical Contributions

- **Anekantavada (Doctrine of Pluralism):** The belief that reality is multifaceted. No single human perspective can claim absolute truth. This promotes **tolerance** and mutual respect for differing viewpoints.
- **Syadvada (Theory of Relativity):** The premise that all judgments are relative (*Syad* meaning 'perhaps' or 'in some ways'). It encourages intellectual humility and open-mindedness.

Disciplinary Lineage and Legacy

- **Sangha Organization:** Mahavira organized his followers into a fourfold order: **Sadhus** (monks), **Sadhvis** (nuns), **Shravaks** (laymen), and **Shravikas** (laywomen).
- **Chief Disciples:** He had **11 Ganadharas** (chief disciples), with Indrabhuti Gautama and Sudharman being instrumental in preserving the monastic tradition.
- **Agam Sutras:** His teachings were compiled into the **Agam Sutras**, originally passed down orally and later inscribed on palm leaves.

Conclusion

In an era of global polarization and environmental crisis, the teachings of **Lord Mahavira** remain strikingly relevant. His emphasis on **Aparigraha** (minimalism) offers a solution to overconsumption, while **Ahimsa** provides a path toward global peace. In 2026, Mahavir Jayanti is not just a religious festival but a call to action for a more compassionate and pluralistic world.

Shyamji Krishna Varma : The Revolutionary Mentor of India House (2026)

Why in News?

On **March 30, 2026**, the Prime Minister of India paid a solemn tribute to **Shyamji Krishna Varma** on his death anniversary, hailing him as a "stalwart of the freedom struggle" who ignited the flame of resistance from the heart of London. The tribute emphasized Varma's role in mentoring a generation of revolutionaries and his unwavering commitment to the cause of **Swaraj**. In 2026, his legacy continues to be celebrated through the **Kranti Teerth** memorial in Gujarat, which serves as a pilgrimage site for national inspiration.

Note

Shyamji Krishna Varma was a multi-faceted revolutionary, scholar, and lawyer who pioneered the Indian independence movement on international soil. A protégé of **Swami Dayanand Saraswati**, he founded the **Indian Home Rule Society** and the iconic **India House** in London (1905). By providing a sanctuary and an ideological platform for students like **V.D. Savarkar** and **Madam Bhikaji Cama**, he transformed the British capital into a hub for anti-colonial activism.

Life and Professional Milestones

- **Early Life:** Born on **October 4, 1857**, in Mandvi, Kutch (Gujarat).
- **Scholar of Sanskrit:** He was a brilliant academic and achieved the historic distinction of being the **first non-Brahmin** to be conferred the title of **'Pandit'** by the scholars of Kashi.
- **Arya Samaj Connection:** Deeply influenced by the Vedic revivalism of Swami Dayanand Saraswati, he served as the **first President of the Bombay Arya Samaj** in 1877.
- **Administrative Career:** Before moving to England, he served as the **Diwan** (Chief Minister) in the princely states of Ratlam, Ajmer, and Junagadh.

Revolutionary Infrastructure in London (1905)

1905 was a landmark year for Varma as he established three pillars of the resistance in the UK:

1. **The Indian Sociologist:** An English monthly journal that served as a radical ideological vehicle, spreading nationalist ideas and exposing colonial exploitation.
2. **Indian Home Rule Society:** One of the earliest organizations to explicitly demand **Swaraj (Self-Rule)** and complete independence from British despotism.
3. **India House:** A hostel for Indian students in Highgate, London. It became a famous revolutionary "nursery" that nurtured figures like **Vinayak Damodar Savarkar**, **Virendranath Chattopadhyaya**, and **Lala Hardayal**.

Confrontation with British Law

- **Disbarment:** In 1905, the **Inner Temple** (London) barred Varma from practicing law due to his "seditious" anti-colonial writings in *The Indian Sociologist*.
- **Posthumous Justice:** In a significant symbolic victory for the Indian diaspora, the Inner Temple **reinstated him posthumously in 2015**, acknowledging that his "offense" was merely a pursuit of self-determination for his country.

Final Years and Legacy

- **Geneva Transition:** Under intense British surveillance, Varma moved his base to Paris and later to **Geneva, Switzerland**, during World War I. He continued his advocacy for India's freedom until his death on **March 30, 1930**.
- **Kranti Teerth:** In 2010, a grand memorial named *Kranti Teerth* was inaugurated near his birthplace in Mandvi. It houses his ashes (which were brought back to India from Switzerland in 2003) and a replica of the London India House.

Conclusion

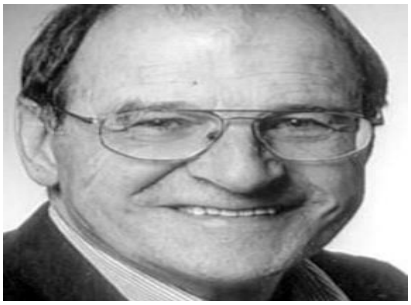
Shyamji Krishna Varma was the "Strategic Architect" of India's foreign-based revolutionary movement. He proved that the pen and the podium could be as lethal as the sword, forcing the British Empire to confront the demand for **Swaraj** even within its own borders. In 2026, his life remains a testament to the power of intellectual resistance and the global nature of India's fight for dignity and freedom.

❐❐❐

PERSONS IN NEWS

Name	Context / Significance
R.N. Ravi 	Sworn in as the **22nd Governor of West Bengal** on **12 March 2026**, succeeding C.V. Ananda Bose.
Vinai Kumar Saxena 	Sworn in as the **4th Lieutenant Governor of Ladakh** on **13 March 2026** (previously LG of Delhi).
Krishna Kumar Thakur 	Assumed charge as **Director (Personnel)** of **NMDC Limited** (India's largest iron ore producer) on **19 March 2026**.
Matt Brittin 	Confirmed as the new **BBC Director General**; set to officially start on **18 May 2026**, succeeding Tim Davie.

Mojtaba Khamenei 	Announced as the **3rd Supreme Leader of Iran** on **9 March 2026**, following the death of his father.
Elon Musk	Ranked as the **world's richest person** ($792 billion) in the **Hurun Global Rich List 2026**, published on **18 March 2026**.
Mukesh Ambani	Retained status as the **Richest Indian and Asian** ($109 billion) in the 2026 Hurun rankings.
Sanju Samson 	Led India to win the **ICC Men's T20 World Cup 2026**; named **Player of the Tournament** after the final on **8 March 2026**.
Michael B. Jordan 	Won **Best Actor** at the **98th Academy Awards** (held 15 March 2026) for the film ***Sinners***.
Jessie Buckley 	Won **Best Actress** at the **98th Academy Awards** for ***Hamnet***; first Irish woman to win this category.

William Dalrymple 	Awarded the **Mark Lynton History Prize 2026** on **18 March 2026** for his book ***The Golden Road***.
Ali Khamenei 	2nd Supreme Leader of Iran; passed away on **28 February 2026** (official mourning continued through early March).
Hermann Kulke 	Renowned **German Indologist** and Padma Shri recipient (2010); passed away in **March 2026**.
H.K. Dua 	Veteran journalist, former editor, and diplomat; passed away in **March 2026**.
Datta Meghe 	Former Union Minister and veteran politician from Maharashtra; passed away in **March 2026**.

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Mentorship Session, Advance Study Materials, IGP

6 Rank — **ZINNIA AURORA**
IGP

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Mentorship Session, Advance Study Materials, IGP

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