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Academy for Civil Services Pvt. Ltd.

CREATING CIVIL SERVANTS FOR THE NATION



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WTO Ministerial Conference



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Other topics

- India's updated Climate Commitments
- Metabolic Diseases Burden in India
- Impact of the Middle East Conflict
- FCRA Amendment Bill 2026

A MONTHLY PERIODICAL FOR ASPIRANTS OF UPSC CSE

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1. POLITY & GOVERNANCE

1.1 SUPREME COURT RULING ON SC STATUS AND RELIGIOUS CONVERSION

Context

- In the case of **Chinthada Anand vs State of Andhra Pradesh**, the Supreme Court ruled that converting to a religion other than **Hinduism, Sikhism, or Buddhism** results in an "immediate and complete loss" of Scheduled Caste (SC) status.

Key Highlights of the Judgment

- The Non-Negotiable Bar:** The Court clarified that a person cannot simultaneously profess a "casteless" religion (like Christianity or Islam) and claim SC benefits.
- Fraud on the Constitution:** Retaining an SC certificate after conversion to a non-notified religion is categorized as a "fraud on the Constitution".
- Exclusion from Protective Laws:** Converts are not entitled to protection under the **SC/ST (Prevention of Atrocities) Act, 1989**, as the legal "disability" is presumed to end with the exit from the Hindu social fold.
- The legal basis of this issue is the **Constitution (Scheduled Castes) Order, 1950**, issued under **Article 341**.
- Clause 3** of the Act states that no person professing a religion different from Hinduism, Sikhism, or Buddhism shall be deemed a member of a Scheduled Caste.
- Timeline of Evolution:**
 - 1950:** Only Hindus were eligible, by **Presidential Order, 1950**.
 - 1956:** Amended to include **Sikhs** following the Kaka Kalelkar Commission.
 - 1990:** Amended to include **Buddhists** (Neo-Buddhists).

The Doctrine of "Revival" (Reconversion)

The Court noted that SC status can be reclaimed upon reconversion to Hinduism, Sikhism, or Buddhism, provided a **three-fold test** is met:

- Historical Proof:** Evidence of original SC ancestry.
- Genuine Reconversion:** Clear renunciation of the previous faith.
- Community Acceptance:** The original caste community must accept the individual back.

Arguments For (Favouring Verdict)	Arguments Against (Critics' View)
Constitutional Fidelity: Only Parliament, under Article 341(2) , has the power to change the SC list.	Violation of Fundamental Rights: Critics argue it pits Article 25 (Freedom of Religion) against Article 14 (Equality).
Protecting the Quota: Prevents dilution of benefits for "most backward" Hindu Dalits.	Persistence of Stigma: The Ranganath Misra Commission (2007) noted that Dalit converts continue to face social exclusion regardless of faith.

Conclusion

- The verdict highlights that while "caste" is a social reality, "Scheduled Caste" is a **legal-constitutional construct** restricted by religion.

1.2 ABORTION LAW IN INDIA

Context

- The Supreme Court permitted a woman to terminate a **30-week pregnancy**, prioritizing the woman's reproductive autonomy over fetal viability.

Abortion Law in India

- Abortion in India is a **qualified legal right**. It was enacted as an exception to **Sections 312-318 of the IPC**, which criminalize the "causing of miscarriage".
- The **Medical Termination of Pregnancy (MTP) (Amendment) Act, 2021** raised the upper gestation limit from 20 to **24 weeks** for special categories, including rape survivors, minors, and women with disabilities.
- **Supreme Court Ruling:** In *X vs Principal Secretary, Health and Family Welfare Department, Delhi (2022)*, the SC ruled that the distinction between married and unmarried women for abortion up to 24 weeks is unconstitutional.

Current Abortion Law

- **Tiered Opinion System:** One Registered Medical Practitioner (RMP) is required for termination up to 20 weeks; two RMPs are required for 20–24 weeks.
- **Medical Boards:** There is **no upper limit** for termination if a state-level Medical Board diagnoses "substantial fetal abnormalities".
- **Consent & Confidentiality:** For adults, only the woman's consent is mandatory. The law strictly prohibits the disclosure of the woman's identity, punishable by up to one year in prison.

Challenges and Gaps

- **Third-Party Gatekeeping:** Despite legal clarity, 2024 rural healthcare audits show that many doctors still demand "husbands' consent" or "Police FIRs" before performing abortions.
- **The POCSO Conflict:** Under the **POCSO Act**, doctors are mandated to report sexual activity of minors. This deters adolescents from seeking safe abortions due to fear of legal action.
- **Institutional Delays:** The requirement for Medical Boards often leads to "judicial delays." In the recent case, SC observed that pregnancy advanced significantly while the petitioner waited for board approvals.

Way Forward

- **Rights-Based Approach:** Transitioning from a "medical necessity" model to a "rights-based" framework where the woman's choice is the primary determinant, as recommended by the **World Health Organization Abortion Care Guideline**.
- **Decentralization:** Establishing Medical Boards at the **district level** to ensure timely access for rural women, as per the **NITI Aayog Recommendations on Health Infrastructure**.
- **Provider Expansion:** Training Mid-level Providers (MLPs) and Nurses to conduct early-term medical abortions to bridge the gap in rural specialist availability.

Conclusion

- The recent judgment emphasizes that while India's **MTP Act** is legally progressive, the true achievement of social justice lies in bridging the gap between **legal rights** and **universal accessibility** to safe reproductive healthcare.

1.3 TRANSGENDER PERSONS (PROTECTION OF RIGHTS) AMENDMENT BILL 2026

Context

- The Parliament passed the **Transgender Persons (Protection of Rights) Amendment Bill 2026** to amend the legal framework established by the 2019 Act.

Key Provisions of the 2026 Amendment Bill

- **Restricted Definition:** Narrows the definition of "transgender" to include only those with specific congenital biological variations, members of traditional identities (Kinner, Hijra, Aravani, Jogta), or those forced into the identity via mutilation. It **excludes 'trans-men', 'trans-women', and 'genderqueer' categories based on self-perception.**
- **Abolition of Self-Identification:** Removes Section 4(2) of the 2019 Act, which granted individuals the right to a self-perceived gender identity.
- **Mandatory Medical Board:** Applicants must now **undergo clinical examination by a Medical Board**, led by a Chief Medical Officer (CMO), to obtain a transgender identity certificate.
- **Surgery Notification:** Medical institutions performing gender-affirming surgeries are now **required to report details directly to the District Magistrate** for the issuance of revised certificates.
- **Strict Penal Provisions:** To combat organized crime, forcing an adult into a transgender identity (e.g., through castration) carries a minimum of 10 years to life imprisonment. Forcing a child into the identity results in life imprisonment.

What are the Concerns raised about the amendment?

- **Violation of Fundamental Rights:** The removal of self-identification contradicts the **NALSA vs Union of India (2014)** verdict, which held that gender is a matter of personal autonomy.

- **Right to Privacy:** Mandating clinical examinations by a Medical Board infringes on bodily integrity and privacy, as established in the **K.S. Puttaswamy Judgment (2017)**.
- **Exclusionary Nature:** By recognizing only "traditional/biological" categories, the **Bill risks stripping legal recognition from trans-men and trans-women** who transition socially or medically in modern contexts.
- **Pathologization:** Requiring a medical certificate treats gender identity as a "medical condition" or "disability" rather than a variation of human existence.

Way Forward

- **Adopt the "Malta Model":** India should look to global best practices like Malta, which allows for a simple administrative self-declaration without medical interference.
- **Horizontal Reservation:** Instead of narrowing definitions, the focus should be on implementing **horizontal reservation** in education and public employment, as directed by the Madras High Court.
- **Sensitized Implementation:** If Medical Boards are retained, they must include transgender representatives and mental health professionals to prevent harassment, rather than just clinical doctors.
- **Focus on Welfare over Regulation:** Effective implementation of existing schemes like **Garima Greh** (shelter homes) and **Ayushman Bharat TG Plus** is more urgent than tighter identification policing.

Conclusion

- While intended to curb fraud, the 2026 Bill risks eroding the progress made toward transgender dignity. Balancing "welfare integrity" with "individual dignity" is essential for India to remain a truly inclusive democracy.

1.4 FCRA AMENDMENT BILL 2026

Context

- The Union Cabinet approved the **Foreign Contribution (Regulation) Amendment Bill 2026**

About Foreign Contribution Regulation Act (FCRA)

- **Origin:** Originally enacted in 1976; replaced by the **FCRA 2010** to consolidate laws on foreign fund utilization.
- **Regulating Authority:** The **Ministry of Home Affairs (MHA)**.
- **Objective:** To prevent foreign contributions from compromising **national security**, sovereign integrity, or the public interest.

Key Provisions of the 2026 Amendment Bill

The 2026 Bill builds upon the 2020 amendments with several new "Control-centric" features:

- **Asset Management:** A "designated authority" will manage or dispose of assets (land, buildings, equipment) purchased with foreign funds if an NGO's registration is cancelled or expires.
- **Personal Liability:** "Key functionaries" (Directors, Trustees, etc.) are now personally liable for violations. They face a **reverse burden of proof**, meaning they must prove they had no knowledge of the violation.
- **Digital Real-Time Tracking:** Mandatory integration with the **Public Financial Management System (PFMS)** allows the government to monitor every transaction in real-time.
- **Prohibited Categories:** Expansion of the "prohibited" list to include **Digital News Aggregators** and **Social Media Influencers** if they engage in political commentary.
- **Field Verification:** Physical inspection of offices and field activities by local intelligence

is now mandatory before the 5-year license renewal.

Concerns from Civil Society (CSOs)

- **Operational Paralysis:** The **20% cap** on administrative expenses (reduced from 50% in 2020) makes it difficult for "knowledge-based" think tanks to pay high-skilled researchers.
- **Sub-granting Ban:** Prohibiting the transfer of funds to smaller, grassroots NGOs prevents larger entities from supporting rural development.
- **"Inspector Raj":** Mandatory physical field verifications are viewed as potential tools for arbitrary delays or harassment.
- **Banking Logistics:** The requirement to maintain the primary account at a single **SBI branch in New Delhi** creates immense logistical burdens for rural organizations.

Way Forward

- **Graded Regulation:** Implementing a **"Green Channel"** for organizations with a 10-year track record of flawless compliance.
- **Rationalizing Expenses:** Reconsidering the 20% administrative cap for research-heavy advocacy groups and think tanks.
- **FCRA Appellate Tribunal:** Establishing a dedicated judicial body to hear appeals against license cancellations within a fixed timeframe.
- **Risk-Based Supervision:** Shifting from universal physical verification to a model focusing on "high-risk" sectors.

Conclusion

- The **FCRA 2026 Bill** marks a shift toward extreme transparency and personal accountability. While essential for national security, the challenge remains to ensure that these regulations do not stifle genuine **social welfare**.

1.5 SHORT ARTICLES

Supreme Court Rulings On Contempt Of Court

Context

- The Supreme Court ruled that **non-parties** (third parties) can be held liable for contempt if they "knowingly aid or abet" the disobedience of a court order.

About Contempt of Court

- Contempt of Court is a **constitutional power vested in the judiciary** to ensure that its orders are respected and that the administration of justice remains free from interference.
- The power to punish for contempt is "inherent" to the Supreme Court and High Courts as "**Courts of Record.**"
 - Article 129:** Designates the **Supreme Court** as a Court of Record with the power to punish for contempt of itself.
 - Article 215:** Grants identical powers to every **High Court** in India.
 - Article 142(2):** Empowers the Supreme Court to investigate or punish any contempt to ensure "complete justice."
 - Contempt of Courts Act, 1971:** Provides a statutory procedure for contempt; however, the Supreme Court ruled that its constitutional power under Art. 129 cannot be restricted by this Act.

Types of Contempt:

- According to the **Contempt of Courts Act, 1971**, contempt is divided into two categories:

Category	Definition	Key Requirement
Civil Contempt	Willful disobedience of any judgment, decree, direction, or order of a court.	The disobedience must be " willful "; technical or accidental lapses are usually exempt.
Criminal Contempt	Publication or acts that: (a) scandalise the court, (b) prejudice judicial proceedings, or (c) obstruct the administration of justice.	Focuses on the " administration of justice " rather than the personal dignity of the judge.

Judicial Interventions

- In *Shanmugam vs High Court of Madras (2025)*, the Supreme Court clarified that contempt is not a "personal armour" for judges against criticism but a tool to prevent the obstruction of justice.
- In *Wikimedia Foundation vs ANI Media (2025)*, the Court ruled that increased transparency (like live-streaming) invites scrutiny, which judges must accept unless it actively prevents justice delivery.
- In *In Re: Compliance of Municipal Orders (2026)*, the Court ruled that "**administrative files cannot override the Rule of Law,**" treating persistent delays by officials as "**Aggravated Civil Contempt**".

Essential Commodities Act (ECA)

Context

- The Centre invoked the Essential Commodities Act 1955 to ensure uninterrupted domestic LPG supply amid West Asia tensions threatening energy imports.

About Essential Commodities Act (ECA)

- The ECA empowers the **Central Government to control the production, supply, and distribution of specific commodities** to ensure availability at fair prices.

Powers of the Central Government

- Declaration of Goods:** The Ministry of Consumer Affairs can notify items like foodgrains, pulses, edible oils, drugs, and fuels as 'essential'.

- **Stock Limits:** Setting a ceiling on how much a trader can hold to prevent artificial scarcity.
- **Price Control:** Fixing the Maximum Retail Price (MRP) to prevent price gouging.
- **Supply Chain Oversight:** Issuing directives to Oil Marketing Companies (OMCs) or manufacturers to prioritize domestic needs over exports or industrial use.

Stakeholder Implications:

- The use of ECA is often described as a "double-edged sword" by economists.

Stakeholder	Positive Implications	Negative Implications
Consumers	Immediate relief from price spikes and ensured supply of basics.	Potential for panic buying ; fails to address long-term price volatility.
Farmers	Indirect price stability for those who are net consumers of food.	Depressed Income: Export bans and stock limits lower market demand, reducing the prices farmers receive.
Industry	Ensures raw material availability for critical sectors.	Investment Deterrence: Frequent interventions create "policy paralysis" and discourage private investment in cold storage and warehouses.

1.6 SNIPPETS

Topics	Details
Morung Education System	<ul style="list-style-type: none"> • During the 132nd edition of <i>Mann Ki Baat</i>, the Prime Minister lauded the Morung system. • The Morung is a traditional, community-based indigenous educational institution and youth dormitory of the Naga tribes. It served as a centralized learning space where elders (the repository of wisdom) transmitted history, customs, warfare, and community ethics to the younger generation through oral traditions. It integrates traditional vocational and ethical learning with modern disciplines like Science and Mathematics.
Randomization of EVM-VVPATs	<ul style="list-style-type: none"> • The Election Commission of India has completed the first stage of EVM-VVPAT randomization across Assam, Kerala, and Puducherry to prepare for the upcoming April 2026 Assembly elections. • The EVM-VVPAT randomization process, governed by the Conduct of Elections Rules, 1961, ensures electoral integrity through a two-stage logic that severs any link between machines and specific polling stations, supported by political oversight, EMS tracking, and mock polls to guarantee that electronic results match physical VVPAT slips.
Purple Fest	<ul style="list-style-type: none"> • Rashtrapati Bhavan hosted the 'Purple Fest' to celebrate the achievements and talents of Divyangjan and promote inclusivity. • Purple Fest celebrates the talents, achievements, and aspirations of Divyangjan (Persons with Disabilities). It is organized by the Ministry of Social Justice and Empowerment in collaboration with state governments.
Nirbhaya Nisha initiative	<ul style="list-style-type: none"> • The Kerala Police launched the Nirbhaya Nisha initiative to enhance the safety of women travelling at night across the state. • The Nirbhaya Nisha Initiative is a state-level women's safety programme launched to ensure secure and independent travel for women during night hours. The initiative specifically targets the safety of women travelling for work,

Maternity Leave	<p>education, or medical needs between 9:00 PM and 5:00 AM.</p> <ul style="list-style-type: none"> The Supreme Court in the <i>Hamsaanandini Nanduri vs Union of India (2026)</i> case, declared maternity leave as a fundamental right. The Petition challenged Section 60(4) of the Code on Social Security, 2020, which limited the 12-week maternity benefit to mothers adopting a child below the age of three months. The Supreme Court struck down the age-based restriction as unconstitutional, and ruled that all adoptive mothers are entitled to 12 weeks of maternity leave, irrespective of the child's age at the time of adoption.
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1.7 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
Expanding Lok Sabha Seats: Constitutional Hurdles & North-South Federal Divide	27 th March
Govt asks Whatsapp to Block Device IDs used in Digital Arrest Scams	21 st March
One Nation One Election: Meaning, Challenges, Way Forward	20 th March
Model Code Of Conduct (MCC): Evolution, Provisions, Challenges, Way Forward	18 th March
Supreme Court Directs 'No-Fault' Compensation for Vaccine Adverse Events	16 th March
Euthanasia and The Right To Die With Dignity in India	12 th March
Supreme Court Redefined the OBC 'Creamy Layer' Rule	13 th March
Social Media Regulation for Children in India: Challenges and Way Forward	10 th March



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2. INTERNATIONAL RELATIONS

2.1 IMPACT OF THE MIDDLE EAST CONFLICT

Context

- Geopolitical tensions in the Middle East and the closure of the **Strait of Hormuz** have disrupted global energy markets and supply chains, forcing central banks to navigate a volatile **stagflationary** environment.

What is the Impact of the Middle East Conflict?

Energy and Supply Chain Disruptions

- **Global Supply Chain Paralysis:** Since the Middle East produces roughly 31% of the world's oil, any regional instability spikes energy costs, causing a "domino effect" that **increases cost** for manufacturing, shipping, and mining sectors globally.
- **Tech Sector Inflation:** High-tech industries, particularly semiconductor manufacturing, rely on stable energy prices. **Surging costs inflate chip production expenses**, leading to higher prices for digital devices and electronics worldwide.
- **Agricultural and Food Crisis:** Because natural gas is essential for creating urea-based fertilizers, **rising gas prices make farming more expensive**, triggering a global food security crisis.
- **Regional Humanitarian Risk:** Gulf nations are internally vulnerable because cities like Dubai and Doha rely on energy-heavy desalination for over 90% of their drinking water; an infrastructure attack could cause an immediate domestic water crisis.

Global Transit and Logistics Networks Under Threat

- **Aviation Paralysis:** As a primary hub connecting Asia, Europe, and Africa, conflict in the Middle East disrupts over 300,000 daily transit passengers and halts the transport of high-value air cargo through major airports like Dubai, Abu Dhabi, and Doha.

- **Maritime Chokepoint Collapse:** In March 2026, a 95% drop in traffic through the Strait of Hormuz; route carrying 20% of global oil and LNG. Unlike other routes, this chokepoint lacks viable rerouting options, causing immediate and severe global energy price spikes.

Migrant Labor, Remittances, and Developing Economies

- **Expatriate Labor Crisis:** Gulf economies depend heavily on an expatriate workforce, with approximately 9 million Indians residing in GCC countries.
 - **Prolonged conflict shatters the region's status as a stable commercial hub**, triggering a mass exodus of workers and capital; early reports in March 2026 already show tens of thousands of workers returning home due to safety concerns and sector-wide layoffs.
- **Macroeconomic Remittance Shock:** In FY25, India received a record **\$135.46 billion** in global remittances, with approximately 38%—originating from the Gulf. Disruption to these flows would deplete India's foreign exchange reserves and weaken domestic consumption, widening the current account deficit.

Macroeconomic and Global Finance Consequences

- **Central Banking "Hobson's Choice":** Policymakers are trapped between raising interest rates to curb energy-driven inflation—which risks triggering a global recession—or lowering rates to stimulate growth, which could lead to runaway inflation and a currency crisis.
- **Sovereign Wealth Fund (SWF) Liquidation:** Gulf SWFs, managing over \$5 trillion in assets, are shifting from global investors to domestic "war chests." Forcing the liquidation of Western investments to fund internal stability

or defense efforts could trigger significant volatility in international stock and bond markets.

- **Accelerated De-dollarization:** The expansion of BRICS+ (including Iran and the UAE) is undermining US dollar dominance. With over 25% of intra-BRICS trade now settled in local currencies and the adoption of the BRICS Pay framework, the global economy is rapidly fracturing into competing financial blocs.

Way Forward For India

- **Accelerate Energy Transition:** Work towards the goal of 500 GW of non-fossil fuel capacity

by 2030 to reduce the current crude oil import dependency of 85-90%.

- **Diversify Trade Routes:** To circumvent geopolitical bottlenecks, prioritize the expansion of alternative trade networks, specifically the **India-Middle East-Europe Economic Corridor (IMEC)** and the **International North-South Transport Corridor (INSTC)**.
- **Active Multilateral Engagement:** Utilize diplomatic standing within forums such as **BRICS** and the **G20** to advocate mediation and de-escalation, by highlighting the severe global economic and humanitarian repercussions of the ongoing strife.

Global Best Practices: Insights for India

	Current Indian Landscape	International Standards & Recommendations
Strategic Petroleum Reserves (SPR)	Existing 5.33 MMT capacity covers only 9.5 days of import needs.	Align with the IEA requirement to maintain at least 90 days of reserves, following the model of Japan and the US.
Safeguarding the Diaspora	Currently dependent on situational evacuation efforts (e.g., Operations Ajay and Ganga) without a dedicated welfare fund.	Adopt the Philippines' approach by establishing a pre-funded Overseas Workers Welfare Administration (OWWA) for systematic repatriation.
Economic Resilience	Susceptible to imported inflation caused by oil price volatility, impacting fiscal stability.	Develop robust macroeconomic buffers to mitigate external shocks and manage national subsidy expenditures efficiently.

2.2 SHORT ARTICLES

WTO's 14th Ministerial Conference (MC14)

Context

- The 14th Ministerial Conference (MC14) of the World Trade Organization (WTO) concluded in **Yaoundé, Cameroon**.

About WTO Ministerial Conference (MC)

- The Ministerial Conference is the **highest decision-making body** of the WTO.
- Under the Marrakesh Agreement, it is mandated to meet at least once every two years.
- It has the authority to take decisions on all matters under any of the multilateral trade agreements.

Key Outcomes the MC14

The conference resulted in a collection of draft texts known as the **Yaoundé Package**.

- **Fisheries Subsidies:** Members agreed for negotiations to achieve comprehensive disciplines on harmful subsidies (overcapacity and overfishing) by MC15.
- **Small Economies & LDCs:** Integrate small economies and Least Developed Countries (LDCs) more effectively into the global value chain.
- **SPS & TBT Measures:** Enhanced implementation of "Special and Differential Treatment" (S&DT) provisions to help developing nations navigate Sanitary and

Phytosanitary (SPS) and Technical Barriers to Trade (TBT).

- **Trade and Climate Agenda:** Reaffirmed commitment to fossil fuel subsidy reform. The **Integrated Forum on Climate Change and Trade (IFCCT)** is set to launch a three-year work programme in June 2026.

Major Deadlocks and Failures

- **E-commerce Moratorium:** Deadlock occurred between the US (seeking a permanent extension of the customs duties holiday on digital transmissions) and Brazil. No extension was finalized, risking a lapse that could disrupt global digital trade.
- **Dispute Settlement Reform:** No convergence on restoring the **Appellate Body**, which has been dysfunctional since 2019 due to the blocking of judge appointments.
- **Investment Facilitation:** India and South Africa successfully blocked the **Investment Facilitation for Development (IFD)** agreement, arguing it falls outside the WTO's multilateral mandate as it was a plurilateral initiative.

UN Commission on the Status of Women

Context

- The UN Commission on the Status of Women (CSW) adopted "Agreed Conclusions" that provide a global roadmap for legal reform, digital justice, and reproductive autonomy.

What is CSW?

- Established in 1946, the CSW is a functional commission of the **Economic and Social Council (ECOSOC)**.
- It serves as the **principal global intergovernmental body exclusively dedicated to gender equality**.
- **Mandate:** To promote women's rights in political, economic, civil, social, and educational fields.
- **Role in SDG 5:** The CSW is the primary body monitoring the implementation of the **2030 Agenda for Sustainable Development**, specifically focusing on **Goal 5: Gender Equality**.

- **Standard Setting:** It authored the **Beijing Declaration and Platform for Action (1995)**, which is the most comprehensive global policy framework for women's rights..
- **Thematic Policy-Making:** Each year, it identifies a "Priority Theme." For 2026, the focus leaned heavily toward **Access to Justice and Institutional Reform**.

Outcomes of the 70th Session (2026)

The **Agreed Conclusions** of 2026 introduced:

- **Legal Reform Mandate:** Member states committed to amending discriminatory laws concerning **property, marriage, and family**, ensuring women have equal legal standing.
- **Digital Justice & AI Governance:** For the first time, the CSW formally addressed **AI biases** and set standards to tackle **tech-enabled gender-based violence**.
- **Community Justice Integration:** Recognition of **paralegals** and community workers as formal components of the justice system to help rural women.
- **Reproductive Autonomy:** Reaffirmed that universal access to **sexual and reproductive healthcare** is non-negotiable for achieving gender equality..

UNEP Report on Safe Disposal of Unused Medicines

Context

- The United Nations Environment Programme (UNEP) released its 2026 publication, "**Safe Disposal of Unused Medicines**."

Key Findings of the Report

- Globally, up to **50% of household medications** eventually become waste due to over-prescription, non-compliance, or expiry.
- Bacterial Antimicrobial resistance (AMR) was directly responsible for **1.27 million deaths** globally in 2019; the leakage of antibiotics into water bodies accelerates this crisis.
- Most current wastewater treatment plants (WWTPs) are technologically **incapable of removing pharmaceutical pollutants**, leading to "endocrine disruption" in aquatic wildlife.
- Market for managing unused medicine waste is projected to reach **US\$2.54 billion by 2032**.

UNEP Recommendations

The report advocates for a **One Health** approach, integrating human, animal, and environmental safety:

- **Extended Producer Responsibility (EPR):** Enacting legal frameworks that shift the financial burden of waste management from the taxpayer to the pharmaceutical producers.
- **Stepwise Take-Back Schemes:** Developing national programs where households can return unused drugs to pharmacies for safe disposal.
- **Prevention at Source:** Improving **WASH (Water, Sanitation, and Hygiene)** and vaccination programs to reduce the initial clinical need for medicines.
- **Unit-Dose Packaging:** Encouraging pharmacies to provide exact dosages to prevent patient stockpiling.
- **Waste Immobilization:** Techniques like **encapsulation** (trapping waste in a solid mass) or **inertization** (mixing with cement/lime) to prevent environmental leaching.
- **Co-processing:** Utilizing existing high-heat industrial infrastructure, such as **cement kilns**, to destroy pharmaceutical residues.

UN Peacekeeping

Context

- India condemned attacks on UN personnel in southern Lebanon.

UNESCO Global Education Monitoring (GEM) Report 2026

Context

- The 2026 GEM Report, titled "**Access and Equity: Countdown to 2030**," was released by **UNESCO** to evaluate global progress toward Sustainable Development Goal 4 (SDG 4).

Key Findings: The Global Education Crisis

- **The Out-of-School Crisis:** In 2024, approximately **273 million children and youth** remained outside the formal education system; an additional **13 million youth** in the ten most conflict-affected nations are excluded from these statistics.
- **The Secondary Education Gap:** Globally, only **2 out of 3 students** complete upper secondary education. To date, **no country has fully achieved the SDG 4 target** of universal secondary completion.
- **Access vs. Quality:** While India has achieved over **98% primary enrollment**, foundational literacy remains a challenge. Approximately **25% of rural youth (ages 14-18)** cannot fluently read a Class 2 level text in their regional language.

Strategic Reform Recommendations

Reform Pillar

Key Strategic Actions

About UN Peacekeeping

- UN Peacekeeping deploys civilian, police, and military personnel to help countries navigate the difficult path from conflict to peace.
 - **The "Blue Helmets":** Established in 1948, these personnel are identified by their iconic blue headgear.
 - **Command Structure:** The UN Security Council (UNSC) authorizes missions, while the Department of Peace Operations (DPO) provides strategic direction.
- According to the **UN Peacekeeping Operations Principles and Guidelines (2008)**, missions must follow:
 - a. **Consent of the Parties:** Agreement from the main conflict parties is essential for legitimacy.
 - b. **Impartiality:** Peacekeepers must be even-handed in mandate implementation.
 - c. **Non-use of Force:** Force is restricted to self-defense and defense of the mandate.

India's Leadership in Peacekeeping

India is among the top three contributors, currently deploying approximately **6,000 personnel** across 10 active missions.

- In 2007, India deployed the first-ever **all-female Formed Police Unit (FPU)** to the UN mission in Liberia (UNMIL).
- India has suffered the **highest number of fatalities in UN history**, with over **180 personnel** lost in the line of duty.

Systemic Reforms	<p>Legislating the Right to Education: Formalizing education as an enforceable legal right with compulsory schooling and the abolition of fees.</p> <p>Equitable Financing: Implementing public funding models that prevent socio-economic inequality during decentralization.</p>
Demand-Side (Learners)	<p>Targeted Cash Transfers: Providing direct financial incentives to low-income families to offset the opportunity cost of schooling.</p> <p>Holistic Support: Ensuring free school supplies and integrated health/nutrition monitoring for every student.</p>
Supply-Side (Ecosystem)	<p>Public Infrastructure Expansion: Reducing reliance on private providers by aggressively increasing the capacity of public preschools and secondary schools.</p> <p>Open & Distance Education (ODE): Scaling digital learning platforms to reintegrate dropouts and working youth.</p>
<p>The report urges nations to treat equity-oriented education targets with the same level of urgency as global climate targets, using localized data to monitor progress.</p>	

UNIGME Report 2025

Context

- The **United Nations Inter-agency Group for Child Mortality Estimation (UN IGME)** released the report titled "Access and Equity: Countdown to 2030".

Highlights of the Report

- Total Mortality:** In 2024, an estimated **4.9 million children** died before their fifth birthday; nearly half (**2.3 million**) were newborns in their first 28 days of life.
- The Progress Paradox:** While under-five mortality has dropped by **51% since 2000**, the

rate of decline has slowed by over **60% since 2015**, threatening the 2030 targets.

- Regional Inequality:** Over **80%** of all under-five deaths occur in just two regions: **Sub-Saharan Africa (58%)** and **Southern Asia (25%)**.
- Nutrition Nexus:** For the first time, the report quantified deaths directly linked to **Severe Acute Malnutrition (SAM)**, attributing over **100,000 annual deaths** to this condition.

India's Performance: India's progress in reducing child mortality has outpaced the South Asian and global averages.

Indicator	1990 Status	2024 Status	Total Decline (%)
Under-5 Mortality (U5MR)	127	27	79%
Infant Mortality (IMR)	88	23.3	73%
Neonatal Mortality (NMR)	57	17	70%

Drivers of India's Success

- Institutional Deliveries:** Schemes like **Janani Suraksha Yojana (JSY)** have shifted births from homes to facilities, significantly reducing maternal and neonatal risks.
- Specialised Infrastructure:** Rollout of **Special Newborn Care Units (SNCUs)** at the district level has drastically cut deaths from sepsis and birth asphyxia.
- Immunization:** **Mission Indradhanush** has pushed full immunization coverage to over **76%**, according to NFHS-5 data.
- Home-Based Care:** **ASHA workers** provide early detection of illnesses through the Home-Based Newborn Care (HBNC) program in rural areas.

World Happiness Report 2026

Context

- The **United Nations Sustainable Development Solutions Network (UN SDSN)**, in partnership with the Gallup World Poll, released the **World Happiness Report 2026**.

Key Highlights of the Report

- Top 5 Happiest Countries:** Finland, Iceland, Denmark, Costa Rica, Sweden.
- Unhappy Countries:** Afghanistan, Sierra Leone, Malawi, Zimbabwe
- India's Rank:** Improved slightly to **116th** (from 118th in 2025), though it remains low relative to its GDP growth, indicating a gap in translating economic wealth into subjective well-being.
- Anglosphere Decline:** For the second year, no major English-speaking nation (USA - 23rd, Canada - 25th, UK - 29th) reached the top 10.

Six Pillars of Happiness Evaluation

The report utilizes a three-year average of life evaluation scores, analyzed against six variables:

- GDP per Capita:** Measures average economic prosperity.
- Social Support:** Having someone to count on in times of trouble.
- Healthy Life Expectancy:** Years expected to be lived in good health.
- Freedom to Make Life Choices:** Perception of autonomy.
- Generosity:** Frequency of charitable donations and pro-social behavior.
- Perceptions of Corruption:** Trust in business and government integrity.

2.3 SNIPPETS

Topics	Details
Brazil's Proálcool Programme	<ul style="list-style-type: none"> The West Asia conflict has affected global oil supplies, drawing attention to Brazil's Proálcool program. Brazil's Proálcool program was launched in 1975, to promote ethanol as an alternative to petrol to lessen reliance on imported crude oil and boost energy security. Key features include mandatory ethanol blending in petrol, the introduction of flex-fuel vehicles that run on both petrol-ethanol blends and pure ethanol, and a dual fuel infrastructure with separate fuel pumps for consumer choice.
Stockholm Water Prize 2026	<ul style="list-style-type: none"> Professor Kaveh Madani, Director of the United Nations University Institute for Water, Environment and Health (UNU-INWEH), has been named the 2026 Stockholm Water Prize Laureate. Stockholm Water Prize, often referred to as the "Nobel Prize of Water," is the world's most prestigious award for water-related achievements. The prize is presented annually by H.M. King Carl XVI Gustaf of Sweden. Established in 1991, it honors individuals or organizations for outstanding contributions to the sustainable use and protection of the world's water resources. The laureate receives 1 million SEK (Swedish Kronor) and a specially designed crystal sculpture.
Force Majeure	<ul style="list-style-type: none"> As the 2026 West Asia conflict escalates, major energy exporters including QatarEnergy, Kuwait Petroleum Corporation (KPC), and BAPCO (Bahrain) have officially invoked Force Majeure on their oil and gas contracts Force majeure is governed by Article 79 of the UN Convention on Contracts for the International Sale of Goods (CISG), which exempts a party from liability for a failure to perform due to an impediment beyond their control.

	<p>The current invocation by Qatar and Kuwait is linked to "War Risks" and "Impossibility of Performance" due to the closure of key maritime chokepoints affecting LNG and Crude tankers.</p>
Section 301 of the Trade Act of 1974	<ul style="list-style-type: none"> The United States Trade Representative (USTR) has initiated two investigations against India under Section 301 of the Trade Act of 1974. Section 301 grants the Office of the United States Trade Representative (USTR) broad authority to investigate and take action to enforce U.S. rights under trade agreements and respond to certain foreign trade practices. Unlike WTO mechanisms which require consensus or judicial review, Section 301 allows the U.S. President to impose tariffs (import duties), quotas, or fees unilaterally if the investigation confirms unfair practices.
Cold Response Drill	<ul style="list-style-type: none"> The North Atlantic Treaty Organization (NATO) organised the 2026 edition of the Cold Response military exercise in the Arctic. This is a biennial large-scale military exercise conducted in the European Arctic, primarily focused on northern Norway and surrounding regions. The drill simulates scenarios under Article 5 of the North Atlantic Treaty, testing the alliance's ability to defend member territory under extreme sub-zero conditions. NATO is a political and military alliance of 32 member countries across Europe and North America. Established in 1949, its core principle is collective defense, which states that an attack against one member is considered an attack against all.
Operation Lion's Roar / Epic Fury / True Promise 4	<ul style="list-style-type: none"> Operation Lion's Roar, Epic Fury, and True Promise 4 are the parts of the high-intensity conflict between the U.S.-Israel alliance and Iran. The conflict was initiated as a coordinated, preemptive campaign to dismantle Iran's nuclear infrastructure and achieve "regime change" through decapitation strikes on leadership compounds in Tehran. Operation Lion's Roar (Israel) focuses on "existential threats," specifically targeting nuclear enrichment sites in Isfahan and Natanz, and IRGC command centers in Tehran. Operation Epic Fury (USA) to destroy Iran's conventional military power, including its missile manufacturing plants, naval assets in the Gulf of Oman. Operation True Promise 4 (Iran) involved ballistic missiles and drone attacks aimed at urban centers like Tel Aviv and Haifa, as well as U.S. bases in Kuwait, Bahrain, and Qatar.

2.4 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
Impact of the West Asia Conflict on Indian Economy and Energy Security	3 rd March
Pakistan-Afghanistan Conflict: Impact on India	3 rd March
Iran-Israel Crisis: Challenges and Way Forward for India	2 nd March

3. ECONOMY

3.1 WTO MINISTERIAL CONFERENCE

Context

- The 14th Ministerial Conference of the World Trade Organization commenced amid ongoing debates over reforms in the global trading system and India's evolving trade position.

World Trade Organization (WTO)

- The World Trade Organization, established in 1995, is an international body that regulates and facilitates global trade.

Key Principles

- The Most-Favoured Nation principle ensures that all member countries are treated equally in trade.
- The National Treatment principle requires that imported goods are treated the same as domestic goods.
- The WTO follows a consensus-based decision-making process among members.

Mechanisms

- The Ministerial Conference is the highest decision-making body and meets every two years.
- The Dispute Settlement Body resolves trade disputes between member countries.
- The Trade Policy Review Mechanism monitors and evaluates members' trade policies.

MC14

- The WTO Ministerial Conference (MC14) is being held in the context of a changing global trade order and increasing geopolitical tensions.

Crisis of Relevance

- The WTO is facing a crisis of relevance due to disruptions in global trade rules.
- Its dispute settlement mechanism has become ineffective because the United States has blocked the appointment of judges.

Push for Reforms

- The United States is advocating major reforms, including reconsideration of the MFN principle.
- There is an increasing push for plurilateral agreements involving a subset of members.
- This shift marks a move away from the WTO's traditional consensus-based approach.

E-commerce Moratorium

- The moratorium on customs duties on electronic transmissions has been in place since 1998.
- Developed countries support its continuation to promote digital trade.
- India opposes it because it may lead to revenue loss, restrict policy space, and create unequal benefits for developing countries.

Investment Facilitation Agreement (IFA)

- The China-backed Investment Facilitation for Development Agreement is supported by over 120 countries.
- It aims to improve the flow of foreign direct investment.
- India opposes it because it is being introduced through a plurilateral route, undermines the WTO's structure, and may have strategic implications.

Public Stockholding for Food Security

- WTO rules currently limit agricultural subsidies to 10% of production value.
- India is demanding a permanent solution to allow flexibility in supporting farmers.
- This issue is important as India provides MSP support and food security to nearly 80 crore people.

Fisheries Subsidies

- India supports sustainable fishing practices under WTO negotiations.

- It emphasises the need to protect the livelihoods of small-scale fishers.
- It also calls for greater responsibility from developed nations engaged in large-scale fishing.

India's Broader Trade Strategy

- India's approach to the WTO is guided by the need to preserve domestic policy space.

- Although India's share in global trade is relatively low, it has significant growth potential.
- India's cautious stance is influenced by past experiences such as the Information Technology Agreement (ITA-1).

India aims to ensure that development concerns remain central to WTO reforms, that trade rules do not restrict domestic policy flexibility, and that emerging sectors like digital trade are governed in a fair and balanced manner.

3.2 GDP GROWTH VS EMPLOYMENT REALITY

Context

- The revised GDP series has reinforced India's position as the fastest-growing major economy, with real GDP growth estimated at around 7.2 percent in 2023–24 and projected at 7.0–7.2 percent in 2024–25.
- However, this growth narrative has revived concerns that high GDP growth is not translating into adequate employment generation, particularly for the youth.

GDP Measurement and Growth Narrative

- Methodological Change: The adoption of the double-deflation method for Gross Value Added improves accuracy by separately adjusting output and input prices, thereby providing a more realistic estimate of economic output.
- Growth Trends: India has consistently recorded high growth compared to global averages, with GDP growth remaining above 7 percent, even as global growth remains around 3 percent.
- Core Concern: Despite strong GDP growth, the policy focus remains disproportionately centred on output expansion rather than employment generation.

Employment Reality

- Rising Unemployment: Unemployment remains higher than historical levels. The unemployment rate (Current Weekly Status)

was about 3.7 percent in 2011–12 but has averaged around 5.2 percent in recent years.

- Youth Unemployment: Youth unemployment has increased significantly from 7.7 percent in 2011–12 to about 10.2 percent in 2023–24, indicating weak absorption of new entrants into the labour force.
- Jobless Growth: The divergence between high GDP growth and modest employment generation reflects a structural problem of jobless growth, where output increases without proportional job creation.

Inflation Trends

- Inflation has moderated in recent years, but this is partly due to strong agricultural performance, with growth of about 4.2 percent in 2024–25.
- Since food prices dominate inflation, favourable monsoon conditions have played a key role alongside policy measures.

Issues in Economic Assessment

- Selective Narrative: Official discourse highlights strong GDP growth and declining inflation but does not equally emphasise persistent unemployment trends.
- Data Concerns: During 2020–21, GDP contracted by about 7 percent, yet unemployment declined, which contradicts global patterns and raises concerns about data interpretation.

Challenges

- Excessive reliance on GDP growth as the primary indicator of economic performance.
- Persistent and relatively high unemployment, especially among youth.
- Lack of employment-intensive growth in key sectors.
- Concerns regarding labour market data reliability and transparency.

Way Forward

- Economic policy must prioritise employment-intensive growth alongside GDP expansion.
- Labour-intensive sectors such as manufacturing, MSMEs, textiles, and construction should be promoted.
- Agricultural growth should be sustained to support rural employment and control inflation.
- Economic assessment should balance GDP growth, employment, and inflation indicators.
- Labour data systems should be strengthened for better transparency and credibility.

3.3 THE HIDDEN VULNERABILITY IN INDIA'S ENERGY ARMOUR

Context

- India's Strategic Petroleum Reserves (SPRs) are currently filled to only 64% capacity (3.37 MMT of 5.33 MMT), as informed in the Rajya Sabha, raising concerns about India's preparedness against global oil supply disruptions.

About Strategic Petroleum Reserves (SPRs)

- Government-maintained emergency stockpiles of crude oil.
- Act as a buffer against supply disruptions (wars, geopolitical tensions) and price volatility.
- Concept emerged after the 1973 Oil Crisis.
- Distinct from commercial reserves held by oil companies.

India's SPR Infrastructure

- Managed by Indian Strategic Petroleum Reserve Limited.

Phase-I Facilities

- Visakhapatnam (AP) – 1.33 MMT
- Mangaluru (Karnataka) – 1.5 MMT
- Padur (Karnataka) – 2.5 MMT
- Total: 5.33 MMT (~9.5 days of crude demand)

Expansion Plans

Approved (2021)

- Chandikhol (Odisha) – 4 MMT
- Padur Expansion – 2.5 MMT

Proposed

- Bikaner (Rajasthan)
- Rajkot (Gujarat)

Key Concerns

- Inadequate Coverage: SPRs cover only ~9.5 days, far below global standards.
- Underutilisation: Only 64% capacity filled.
- High Import Dependence: India imports >88% of crude oil.
- Geopolitical Vulnerability: Critical dependence on Strait of Hormuz.

Global Benchmark

- International Energy Agency recommends 90 days of oil stocks.
- India (including commercial reserves): ~74 days.
- India is an associate member (not legally bound).

Strategic & Economic Significance

Strategic Role

- Ensures energy security during crises
- Reduces vulnerability to external shocks

Commercial Benefits

- Price arbitrage (buy low, release high)

- Leasing storage capacity
- Example: Agreement with Abu Dhabi National Oil Company at Mangaluru SPR

Way Forward

- Fill SPRs to full capacity urgently

- Fast-track Phase-II projects
- Expand storage geographically
- Integrate commercial + strategic reserves
- Diversify import sources
- Accelerate renewable energy transition

3.4 ENSURING LPG SUPPLY AMID WEST ASIA CRISIS

Context

- The ongoing West Asia conflict has disrupted shipping through the Strait of Hormuz, through which over 80 percent of India's LPG imports pass. This has raised concerns for energy security and supply stability for over 33 crore households.

Government Response

- The Government invoked the Essential Commodities Act, 1955 to regulate production, storage, and distribution.
- Refiners have been directed to maximise LPG output and restrict diversion of propane and butane to petrochemicals.
- All LPG production is being prioritised for supply to public sector Oil Marketing Companies.
- The focus is on ensuring uninterrupted domestic supply and preventing shortages or price spikes.

India's LPG Demand-Supply Dynamics

- India's LPG consumption is about 31 million tonnes (2024-25), while domestic production is only about 13 million tonnes.
- This results in around 58 percent import dependence, making India highly vulnerable to external disruptions.
- Imports are largely concentrated in West Asian countries such as Saudi Arabia, Qatar, UAE, and Kuwait.

Strategic Vulnerability

- The Strait of Hormuz is a critical global energy chokepoint.

- It carries about 80 percent of India's LPG imports, 40 percent of crude oil, and over 50 percent of LNG imports.
- Any disruption in this route directly impacts India's energy supply chain and price stability.

Diversification of Energy Sources

- India has signed an agreement with the United States to import 2.2 million tonnes of LPG, accounting for about 10 percent of annual imports.
- The country is also engaging with global traders to source supplies from regions such as Africa, Europe, and Russia.
- Diversification reduces geopolitical risk but increases logistics costs.

Energy Security and Strategic Reserves

- India has crude oil stocks for about 25 days and strategic petroleum reserves for about one additional week.
- Domestic stocks of LPG, petrol, and diesel are sufficient for short-term demand.
- Strategic reserves at Visakhapatnam, Mangaluru, and Padur act as buffers during supply disruptions.

Impact on LNG and Natural Gas

- India is the fourth-largest importer of Liquefied Natural Gas, with limited storage capacity.
- Disruptions have led to force majeure concerns from suppliers like QatarEnergy.
- Gas allocation may need reprioritisation towards critical sectors such as fertilisers and city gas distribution.

Key Challenges

- High dependence on imports and concentration in West Asia.
- Limited domestic production of propane and butane.
- Inadequate LNG storage infrastructure.
- Exposure to global price volatility and inflationary pressures.
- Supply chain disruptions due to geopolitical conflicts.

Way Forward

- Diversify energy imports across multiple regions to reduce concentration risk.
- Expand Strategic Petroleum Reserves and explore LNG storage solutions.
- Increase domestic production and refining efficiency.
- Promote alternative fuels such as biogas, compressed biogas, and green hydrogen.
- Strengthen maritime security and ensure safe sea lanes of communication.
- Encourage demand-side management and energy efficiency.

INDIA'S LNG IMPORT DEPENDENCY

Extent of India's Import Dependence

- India imports about 88 percent of its crude oil and nearly 50 percent of its natural gas requirements, making it highly vulnerable to external shocks.
- Domestic gas production is about 90 MMSCMD, while consumption is around 189 MMSCMD, creating a large supply gap filled through imports.

Critical Dependence on Qatar

- Qatar is India's largest supplier of LNG and a key source of LPG.
- It supplies around one-third of India's LPG and nearly half of its LNG imports.
- In 2024-25, India imported 27 million tonnes of LNG, of which 11.2 million tonnes (about 41.4 percent) came from Qatar.
- Most of this supply originates from Ras Laffan, which is central to Qatar's LNG exports.
- Ras Laffan accounts for about one-fifth of global LNG supply, making it critical for global and Indian energy security.

Exposure Through Long-Term Contracts

- India's major companies are tied to Qatar through long-term LNG agreements:
 - Petronet LNG imports about 7.5 MTPA
 - GSPC imports about 1 MTPA
 - GAIL imports smaller contracted volumes
- Disruptions and possible force majeure conditions can severely constrain assured supply.

Electric Cookers

- India's heavy reliance on imported LPG (\$26.4 billion annually) and continued use of biomass by ~37% households is driving focus on electric cooking as a cleaner, cheaper alternative.
- Electric cooking is more efficient (~85% vs 40% for LPG) and cheaper, but large-scale adoption may increase peak electricity demand, raising concerns about grid stability and infrastructure readiness.

3.5 CORPORATE LAWS (AMENDMENT) BILL, 2026

Context

- The Bill, introduced in the Lok Sabha, seeks to amend the Companies Act, 2013 and Limited Liability Partnership Act, 2008, and has been referred to a JPC.

Key Provisions

- Decriminalisation: Minor offences → monetary penalties
- CSR Changes:
 - Threshold: ₹5 cr → ₹10 cr
 - 2% rule unchanged
 - Relaxations for small companies
- Compliance Relief: Simplified norms for small firms
- Digital Governance: Virtual AGMs allowed (1 physical AGM in 3 years)
- Capital Flexibility: Rationalised share buyback rules
- Trust → LLP Conversion: For SEBI/IFSC-registered entities

Concerns

- Excessive Delegation → Risk of “skeletal legislation” (cf. Hamdard Dawakhana vs Union of India)
- Reduced Parliamentary Oversight
- CSR Dilution due to higher threshold
- Weak Deterrence from decriminalisation

Significance

- Improves investment climate
- Aligns with global practices
- Promotes digital corporate ecosystem
- Reduces compliance burden

Way Forward

- Balance ease of doing business vs accountability
- Ensure JPC scrutiny of delegated powers
- Retain strict penalties for serious offences
- Safeguard CSR outcomes
- Strengthen regulatory accountability

3.6 INSURANCE PENETRATION AND DENSITY IN INDIA

Context

- Insurance penetration and density are widely used indicators, but they do not accurately reflect household financial protection in India.
- The core issue is not lack of access to insurance, but inadequate coverage.

Key Indicators and Data

Insurance Penetration

- Insurance penetration is the ratio of total premiums to GDP.
- India's penetration is about 4 percent, compared to a global average of around 7 percent.
- Life insurance contributes roughly 3 percent, while non-life contributes about 1 percent.

Insurance Density

- Insurance density refers to per capita premium in US dollars.
- India's insurance density is about 95 to 100 dollars, while the global average is around 800 to 900 dollars.
- Lower density reflects lower income levels rather than absence of insurance coverage.

Key Limitation

- These indicators measure premium collection, not the extent of financial protection.
- They do not show how many people are insured or whether the coverage is adequate.
- Life insurers settled about 10 lakh death claims, with a total payout of around 33,000 crore rupees.
- The average payout is about 3.3 lakh rupees per claim, which is insufficient for long-term

income replacement despite a high claim settlement ratio of about 97 percent.

Factors Distorting Indicators

- High GDP growth can reduce penetration ratios even if insurance coverage increases.
- High-premium products can increase penetration without improving actual protection.
- Regulatory changes can temporarily affect premium volumes without changing coverage levels.

Structural Issue in Insurance Market

- Insurance products in India are largely savings-oriented rather than risk-oriented.
- This results in higher premiums but lower effective risk coverage.
- There is a clear mismatch between premiums paid and protection received.

Rethinking Underinsurance

- Many households already have some form of insurance through employers or government schemes.

- However, coverage levels are inadequate relative to household income needs.
- Therefore, India's problem is under-protection rather than underinsurance.

Need for Better Measurement

- Insurance assessment should focus on protection rather than premium volume.
- Indicators should include the proportion of insured households and the level of coverage relative to income.
- Such data is available through regulatory and administrative sources.

Policy Implications

- Policy should focus on increasing adequate life cover rather than premium collection.
- Promotion of term insurance can improve protection at lower cost.
- Product design should shift towards risk coverage rather than savings.
- Public awareness must emphasise insurance as a protection tool.

3.7 FOREX RESERVES AS INDIA'S SHIELD

Context

- The recent West Asian conflict has triggered external sector stress in India.
- In two weeks, forex reserves declined by about 19 billion dollars, the rupee depreciated by 2.9 percent to around 93.7 per dollar, and stock markets fell by nearly 9 percent.
- Foreign Portfolio Investors withdrew about 1.03 lakh crore rupees (around 11 billion dollars) in March 2026, increasing pressure on the external sector.

Forex Reserves

- Forex reserves are foreign currency assets held by the Reserve Bank of India to manage external sector stability.
- They are used to finance the current account deficit, intervene in currency markets to

stabilise the rupee, and enhance macroeconomic credibility.

- Even with a moderate current account deficit of around 1 percent of GDP, large capital outflows can create financing pressures, making reserves crucial.

Current Status of India's Forex Reserves

- As of March 2026, India's forex reserves stand at about 709.7 billion dollars.
- This level is sufficient to cover more than 12 months of imports, which is considered comfortable by global standards.
- Although reserves remain strong, recent depletion highlights vulnerability to sudden external shocks.

Historical Lessons from External Crises

1991 Balance of Payments Crisis

- India's reserves fell to levels sufficient for only 2 to 3 weeks of imports.
- India pledged 20 tonnes of gold to raise 200 million dollars and 47 tonnes to raise 405 million dollars.
- The rupee was devalued by about 18.7 percent in a short period.
- The crisis led to major economic reforms, including liberalisation, privatisation, and global integration.

Subsequent External Shocks

- The Asian Financial Crisis of 1997 exposed vulnerability to regional contagion.
- The Global Financial Crisis of 2008 triggered capital outflows from emerging markets.
- The Taper Tantrum of 2013 caused sharp currency depreciation due to US monetary tightening signals.
- The COVID-19 pandemic in 2020 created global uncertainty and financial stress.
- The Russia-Ukraine conflict in 2022 increased crude oil prices and widened the current account deficit.
- The ongoing West Asian conflict has again highlighted external sector risks.

Emerging Risks in the Current Scenario

- Large FPI outflows are increasing demand for foreign currency and weakening the rupee.

- Rising crude oil prices are significant because India imports more than 85 percent of its oil, leading to a higher trade deficit.
- Supply chain disruptions due to geopolitical tensions can affect both imports and exports.
- A widening current account deficit, combined with capital outflows, can increase pressure on forex reserves.

Significance of Forex Reserves

- Adequate reserves act as the first line of defence against external shocks and capital flight.
- They enable the RBI to intervene in forex markets and prevent excessive volatility in the rupee.
- Strong reserves enhance investor confidence and reduce the risk of a balance of payments crisis.

Way Forward

- India must maintain adequate reserve buffers to manage global uncertainties.
- Policies should aim to reduce dependence on volatile capital flows and improve export competitiveness.
- Diversification of energy sources can reduce vulnerability to oil price shocks.
- Strengthening macroeconomic fundamentals will enhance resilience against external shocks.

3.8 SHORT ARTICLES

PRARAMBH 2026

Context:

- The Finance Minister launched PRARAMBH 2026, a nationwide campaign to create awareness about the Income Tax Act, 2025 (effective from April 1, 2026).
- Core Objective: To familiarise citizens and taxpayers with new tax provisions through a multi-channel outreach (print, digital, media, MyGov initiatives).
- Key Features: Includes multilingual resources, AI chatbot "Kar Saathi", and an upgraded Income Tax Website 2.0 for better taxpayer services.

Key Issues wrt Sixteenth Finance Commission

Issue Area	Key Concern	Data / Example	Implication
Vertical Devolution	Retention of 41% but no action on cesses and surcharges	Cesses are excluded from divisible pool	Reduces effective share of States
Effective Transfers	Declining share of transfers to States	35.6% (14th FC) → 34.4% (15th) → 32.7% (2026-27)	Shrinking fiscal space for States
Fiscal Assumptions	Over-optimistic projections	Based on ~11% nominal GDP growth	May affect credibility of fiscal planning
Grants System	Discontinuation of revenue deficit and sectoral grants	No targeted support for weaker States	Weakens redistributive flexibility
Horizontal Devolution	Introduction of GSDP-based contribution criterion	Rewards high-income States	Benefits structurally advantaged States
Conceptual Consistency	Dual use of GSDP (equity + efficiency)	Income distance vs contribution criteria	Creates tension between equity and performance
Fiscal Discipline	Removal of fiscal discipline/tax effort criterion	No direct measure of fiscal responsibility	Reduces incentives for prudent governance
Distributional Impact	Reduction in shares of several States	Bihar, UP, MP, Odisha affected	Risk of widening regional disparities
Equalisation Mechanism	Absence of equalisation grants	Article 275 provisions not utilised	Limits correction of inter-state inequalities

Approved List of Models and Manufacturers (ALMM) framework

Context:

- The Ministry of New and Renewable Energy (MNRE) introduced ALMM List-III (ingots & wafers), effective June 1, 2028, to strengthen solar manufacturing

Details

- Core Idea: ALMM (2019) ensures quality and reliability of solar equipment and promotes domestic manufacturing, with only listed models allowed in government-linked solar projects.
- Key Features: Three-tier lists (Modules, Cells, Ingots/Wafers), mandatory use in govt projects, grandfathering for ongoing projects, and alignment with Domestic Content Requirement.

Cotton Corporation of India

Context

- The government approved MSP funding to Cotton Corporation of India (CCI) for the cotton season 2023-24 to support farmers.

Details

- About CCI: Established in 1970, a PSU under the Ministry of Textiles, responsible for price support operations by procuring cotton when market prices fall below MSP.
- Role & Cotton Facts: Ensures stable prices and supply to textile industry; cotton requires warm climate (21-30°C), 50-100 cm rainfall, and grows best in black soils, with Gujarat, Telangana, and Maharashtra as major producers.

Coconut production

Context:

- India is the world's largest coconut producer (~30% share), as highlighted by the government.

Details

- Key Features: Coconut (*Cocos nucifera*) is a tropical palm (Arecaceae), originating in Southeast Asia; thrives in warm, humid coastal climates with 1000-3000 mm rainfall and ~27°C temperature.

- Cultivation & Uses: Grown mainly in Kerala, Tamil Nadu, Karnataka, Andhra Pradesh; adapted to sandy/laterite soils; widely used for food, oil, fibre (coir), and other products.

Poor Financial Planning By NITI Aayog

Context

- A Parliamentary Standing Committee has criticised NITI Aayog and the Ministry of Planning for persistent underutilisation of budgetary allocations, raising concerns about weak financial planning and fiscal discipline.

Details

- NITI Aayog, established in 2015 as a policy think tank, plays a key role in policy design, monitoring, and improving governance outcomes despite not directly allocating funds.
- The Committee noted significant underutilisation, with expenditure at about 35 percent in 2023–24 (Rs. 290.81 crore of Rs. 824.39 crore) and about 34 percent in 2024–25 (Rs. 282.61 crore of Rs. 837.26 crore).
- Despite low utilisation, the Ministry sought an increased allocation of Rs. 1,203.38 crore for 2026–27, indicating unrealistic budgeting and weak fiscal discipline.
- Persistent gaps between planned and actual expenditure reflect delays in approvals and poor implementation of schemes.
- A large portion of expenditure is concentrated in the last quarter, leading to a rush to spend and compromising the quality of outcomes.
- Such practices risk violating fiscal norms, reduce accountability, and result in inefficient use of public resources.
- The issue highlights deeper challenges in public financial management, potentially delaying development outcomes and weakening governance effectiveness.

NMDC Ltd

Context

- NMDC Limited (formerly National Mineral Development Corporation) became the first

Indian mining company to produce 50 MT iron ore in a single financial year.

Details

- About NMDC: Established in 1958, a Navratna CPSE under Ministry of Steel; India's largest iron ore producer and exporter.
- Key Functions: Engaged in exploration of multiple minerals and operates India's only mechanised diamond mine (Panna, MP).

Bascule Bridge

Context

- The government approved renovation of a Bascule Bridge at Syama Prasad Mookerjee Port, Kolkata.

Details

- Definition & Working: A movable (drawbridge) that lifts using a counterweight system, allowing ships to pass; works on a seesaw-like (bascule) mechanism with pulleys and cables.
- Requires less energy due to balanced weight, can have single or double leaves, and is widely used in ports and navigable waterways.

Karbi Anglong Ginger

Context

- Geographical Indication-tagged Karbi Anglong Ginger from Assam was exported to London, boosting agri-exports.

Details

- Grown in Karbi Anglong (Singhasan Hills) using Jhum and Tila cultivation; known for high oil content, strong aroma, and rich pungency.
- Recognised with Geographical Indication (GI) tag (2015); enhances farmer income, branding, and export potential of indigenous crops.

Fiscal Health Index (FHI) 2026

Context

- NITI Aayog released the Fiscal Health Index (FHI) 2026, assessing fiscal performance of states.

Details

- Core Framework: Evaluates states on five pillars—expenditure quality, revenue

mobilisation, fiscal prudence, debt index, and debt sustainability; classifies them into Achievers, Front Runners, Performers, Aspirational.

- Key Highlights: Odisha, Goa, Jharkhand are achievers; Kerala & Tamil Nadu in aspirational group; Arunachal Pradesh tops among NE/Himalayan states.

RSETIs

Context

- Government highlighted the role of Rural Self Employment Training Institutes (RSETIs) in promoting rural livelihoods.

Details

- About: District-level institutions providing free, short-term residential skill training to unemployed rural youth (18–50 years) through a bank–government partnership (lead bank manages each district RSETI).
- Key Features & Significance:
 - Offers NSQF-aligned courses in agriculture, manufacturing, services, and entrepreneurship.
 - Ensures post-training support, credit linkage, and bank-recognised certification.
 - Promotes self-employment, financial inclusion, and rural entrepreneurship.

PRISM-SG

Context

- The PRISM-SG (Portal for Rail-Road Inspection & Stages Management – Steel Girders) was launched to streamline infrastructure approvals.

Details

- Objective: To digitise inspection and approval processes for Road Over Bridges (ROBs) and railway bridge components, improving coordination among agencies.
- Key Features:
 - Enables end-to-end online workflow (submission, scrutiny, inspections, reports).
 - Integrates stakeholders like Indian Railways, contractors, inspection agencies.

- Reduces approval time from ~12 months to 3–4 months, enhancing efficiency and transparency.

Central Consumer Protection Authority

Context

- Directed hotels and restaurants to avoid levying extra charges (like LPG or fuel recovery) on consumers.

Details

- About: A statutory body established under the Consumer Protection Act, 2019 (replacing 1986 Act); under Ministry of Consumer Affairs, Food & Public Distribution.
- Powers & Functions:
 - Protects consumer rights and curbs unfair trade practices & misleading advertisements.
 - Can order recall, refund, penalties, and cancellation of licences.
 - Conducts investigations via Director-General-led Investigation Wing; headed by a Chief Commissioner with two Commissioners.

National Shipping Board

Context

- The government interacted with the National Shipping Board (NSB) to address challenges in the maritime sector amid global uncertainties.

Details

- About NSB: A statutory body (1959) under the Merchant Shipping Act, 1958, advising the government on shipping and maritime development.
- Composition & Role: Includes Chairman, MPs, and sector representatives; plays a key role in shaping national maritime policy under the Ministry of Ports, Shipping and Waterways.

Joha Rice

Context

- GI-tagged Joha rice from Assam was exported to the UK and Italy, promoting India's agri-exports.

Details

- Key Features: An indigenous aromatic rice, grown in Kharif season, known for fine grains, fragrance, and nutritional value (omega-3 & omega-6 fatty acids).
- Received GI tag in 2017 under the GI Act, 1999; highlights regional identity and export potential of traditional crops.

Deendayal Port

Context

- Deendayal Port (Kandla) is set to handle 22 vessels in 72 hours, showcasing its operational capacity.

Details

- Located in Kachchh (Gujarat), it is a protected natural harbour and one of India's major ports, developed in the 1950s post-Partition.
- A leading state-owned cargo port handling bulk and liquid cargo, though facing competition from private ports like Mundra.

Bureau of Energy Efficiency

Context

- Celebrated its 25th Foundation Day under the Ministry of Power.

Details

- About: A statutory body (established 2002) under the Energy Conservation Act, 2001 with the objective of reducing energy intensity in India.
- Functions & Schemes:
 - Sets energy efficiency standards for appliances & buildings (Standards and Labelling, Energy Conservation Building Code).
 - Promotes schemes like National Mission for Enhanced Energy Efficiency, Municipal Demand Side Management, Agricultural Demand Side Management.

3.9 SCHEMES IN NEWS

MSE-CDP

Context:

- The Ministry of Micro, Small & Medium Enterprises informed the Rajya Sabha about the Micro and Small Enterprises Cluster Development Programme (MSE-CDP), a demand-driven Central Sector Scheme.

Details

- Core Idea: Focuses on cluster-based development of MSEs to improve productivity and competitiveness through technology upgradation, skill development, quality improvement, and market access.
- Components:
 - Common Facility Centres (CFCs) – shared facilities like testing, training, raw material depots
 - Infrastructure Development (ID) – upgrading industrial infrastructure, promoting green and sustainable manufacturing

National AI Skilling Initiative

Context

- The Ministry of Information & Broadcasting, in partnership with Google and YouTube, launched the National AI Skilling Initiative to boost AI capabilities in the AVGC (animation, VFX, gaming, comics) and media sector.

Details

- Structure: Implemented through the Indian Institute of Creative Technologies (IICT), it has two phases—Phase I (foundational AI courses via Google platforms) and Phase II (advanced, hands-on specialization for creative industries).
- Significance: Aims to build future-ready AI skills among creators, students, and media professionals, strengthening India's digital and creative economy.

Mutual Credit Guarantee Scheme

Context

- The Mutual Credit Guarantee Scheme (MCGS) has been modified in Budget 2025-26 to support MSME manufacturers and exporters.

Details

- Core Provision:** Provides 60% credit guarantee (via NCGTC) for loans up to ₹100 crore to MSMEs for machinery and equipment, with expanded eligibility to service sector MSMEs.
- Key Features:** Reduced project cost requirement (60%), refundable upfront contribution, 10-year guarantee period, and special provisions for export-oriented MSMEs.

Credit Guarantee Scheme for Microfinance Institutions-2.0 (CGSMFI-2.0)

Context

- The Government launched CGSMFI-2.0 to strengthen credit flow to microfinance institutions (MFIs) and support small borrowers.

Details

- Provides credit guarantee via National Credit Guarantee Trustee Company Limited to Banks/FIs for loans extended to Non-Banking Financial Company-Microfinance Institutions (NBFC-MFIs)/MFIs for on-lending to eligible microfinance borrowers.
- Key Features & Impact:** 80-70% guarantee coverage, reduced risk for lenders, and expected to benefit ~36 lakh small borrowers by improving financial inclusion.

RELIEF

Context:

- The Government launched RELIEF (Resilience & Logistics Intervention for Export Facilitation) to support exporters facing maritime disruptions in West Asia.

Details

- Core Objective:** A time-bound scheme under Export Promotion Mission (EPM) to offset high freight costs, insurance premiums, and conflict-related risks.

- Key Features:** Provides up to 100% risk coverage (past shipments) and 95% for future exports, MSME reimbursement (up to ₹50 lakh), operational reliefs, and implementation by ECGC Ltd.

Small Hydro Power (SHP) Development Scheme

Context

- The Cabinet approved the Small Hydro Power (SHP) Development Scheme (FY 2026-31) to boost renewable energy, especially in hilly and North-Eastern regions.

Details

- Core Features:** Supports 1-25 MW projects (total 1,500 MW) with higher incentives (30%) for NE/border areas, DPR funding, and 100% domestic sourcing of equipment.
- Promotes run-of-the-river, eco-friendly power generation, creating jobs while minimizing displacement, deforestation, and ecological impact.

Bharat Audyogik Vikas Yojna

Context

- The Union Cabinet approved Bharat Audyogik Vikas Yojna (BHAVYA) to boost industrial infrastructure and manufacturing growth.

Details

- Core Objective:** To develop 100 plug-and-play industrial parks in partnership with states and private sector, enabling faster transition from investment to production.
- Key Features:** Ready-built facilities, PM GatiShakti-aligned connectivity, support for logistics & worker housing, green infrastructure, and challenge-based project selection.

Eligible Manufacturer Importers Scheme

Context

- Guidelines issued by Central Board of Indirect Taxes and Customs (CBIC).

Details

- Objective: Allows deferred payment of customs duty (monthly basis) to trusted importers.
- Features: Available to Authorised Economic Operators (AEO-T1) including MSMEs; promotes ease of doing business and compliance.

Amrit Bharat Station Scheme

Context

- A Parliamentary Committee reviewed the Amrit Bharat Station Scheme (ABSS) and recommended regular passenger feedback and impact evaluation.

Details

- Launched in 2022, it aims at modernisation of railway stations through long-term master planning, better connectivity, and improved passenger experience.
- Key Features: Upgrades include modern amenities (waiting halls, lifts, Wi-Fi), improved accessibility, and promotion of local products via 'One Station One Product'.

Samridh Gram Phyigital Services Pilot Initiative

Context

- The government launched the Samridh Gram Phyigital Services Pilot Initiative, inaugurating Samridh Kendras in selected villages to boost rural development.

Details

- Core Idea: A "phyigital" model (physical + digital) leveraging BharatNet connectivity to deliver integrated services across sectors in rural areas.
- Key Features: Provides education (smart classrooms), agriculture (IoT, drones), healthcare (telemedicine), e-governance, e-

commerce (ONDC), and financial inclusion through village-level digital hubs.

Districts as Export Hubs Initiative

Context

- The government highlighted progress of the Districts as Export Hubs Initiative in boosting local exports.

Details

- Core Objective: Launched in 2019, it aims to identify, brand, and promote district-specific products, decentralising export promotion across India.
- Key Features: Implemented by the Directorate General of Foreign Trade, supported by State Export Promotion Committees and District Export Promotion Committees, along with District Export Action Plans focusing on Geographical Indication products, agriculture, and local industries.

RoDTEP Scheme

Context

- Government restored rates and value caps under the Remission of Duties and Taxes on Exported Products (RoDTEP) Scheme, boosting export competitiveness.

Details

- Core Objective: Refunds embedded taxes and duties on exports (not otherwise refunded), ensuring World Trade Organization (WTO)-compliant export support; replaced Merchandise Exports from India Scheme (MEIS).
- Covers all sectors (priority to labour-intensive), includes Special Economic Zone (SEZ)/Export Oriented Unit (EOU) units and e-commerce exports, implemented via digital platform under Department of Revenue (Ministry of Finance).

4. DEFENSE & SECURITY

4.1 SHORT ARTICLES

IONS Maritime Exercise (IMEX) TTX 2026

Context

- The Indian Navy hosted the **IMEX TTX 2026** under the **Indian Ocean Naval Symposium (IONS)** framework at the Maritime Warfare Centre, Southern Naval Command, Kochi.

Details

- IMEX TTX 2026** is a multi-scenario **Table-Top Exercise** focuses on **Non-Traditional Security (NTS)** threats, including maritime terrorism, piracy, Illegal, Unreported, and Unregulated (IUU) fishing, and Disaster Relief (HADR). **Participants** included key littoral states such as Bangladesh, France, Indonesia, Maldives, Mauritius, Sri Lanka, Singapore, and Tanzania.

Exercise Dweep Shakti

Context

- Indian Armed Forces organised **Exercise Dweep Shakti** in the Andaman and Nicobar Islands.

Details

- Exercise Dweep Shakti** is a large-scale **Tri-Service joint military exercise** involving the **Indian Army, Indian Navy, Indian Air Force**, and the **Indian Coast Guard**. The exercise was conducted under the aegis of the **Andaman and Nicobar Command (ANC)**—India's only functional **Theatre Command**. Aim to test the integrated combat capabilities of the three services in coastal and island environments, focusing on rapid deployment to protect remote territories.

Tunguska Air Defence Missile System (2K22M)

Context

- India signed a ₹445 crore contract with Russia to upgrade and integrate the **Tunguska-M1** systems to enhance the Indian Army's short-range air defence capabilities.

Details

- The **Tunguska** is a **self-propelled anti-aircraft weapon system**, originally developed by the Soviet Union, to protect ground forces from **low-altitude aerial threats**. It combines **8 surface-to-air missiles** for long-range engagement. The 30 mm cannons can fire at a combined rate of up to **5,000 rounds per minute**, the missiles can engage targets at a distance of **8–10 km** and altitudes up to **3,500 metres**. It features a **360-degree acquisition radar** with a detection range of **18 km**.

Operation Urja Suraksha

Context

- Amidst escalating geopolitical tensions in West Asia and threats of a blockade in the Persian Gulf, the Indian Navy launched **Operation Urja Suraksha**.

Details

- Operation Urja Suraksha** is a **strategic Indian Navy mission** launched in late March 2026 to safeguard India's critical energy lifelines. Deployed in **response to rising conflicts and restrictions in the Strait of Hormuz**, it involves more than five frontline warships—including destroyers and frigates—stationed in the Gulf of Oman and northern Arabian Sea.

Vayu Baan Project

Context

- The Indian Air Force (IAF) has officially initiated the **Vayu Baan Project**.

Details

- Project Vayu Baan** is the **indigenous program to develop helicopter-launched unmanned aerial systems**. Led by the Directorate of Aerospace Design (DAD), these autonomous, AI-enabled drones will be deployed from attack helicopters for surveillance, reconnaissance, and precise kamikaze strikes, enhancing standoff capability.

Exercise Sea Dragon

Context

- The Indian Navy participated in the Exercise Sea Dragon.

Details

- Exercise Sea Dragon is an annual, multinational high-end Anti-Submarine Warfare (ASW) training exercise led by the United States Navy. Conducted in the Western Pacific Ocean.

Exercise Lamitiye 2026

Context

- Indian Armed Forces participated in the military exercise Lamitiye 2026.

Details

- Exercise LAMITIYE-2026 was the 11th edition of the biennial joint military training between the Indian Armed Forces and the Seychelles Defence Forces (SDF). Conducted at the Seychelles Defence Academy, it was the first-ever tri-service engagement (Army, Navy, and Air Force) between the two nations. "Lamitiye" translates to "Friendship" in Creole.

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5. ENVIRONMENT & ECOLOGY

5.1 INDIA'S UPDATED CLIMATE COMMITMENTS

Context

- India has announced its updated Nationally Determined Contributions (NDCs) for 2035 under the United Nations Framework Convention on Climate Change, in line with the Paris Agreement.

Highlights of India's 2035 NDC Targets

- India aims to achieve 60% of its installed electricity capacity from non-fossil sources by 2035, while it has already reached around 52% by 2025 against the earlier 50% target for 2030.
- The country targets a 47% reduction in emissions intensity of GDP (from 2005 levels) by 2035, building on the 36% reduction already achieved between 2005 and 2020.
- India seeks to create an additional carbon sink of 3.5–4 billion tonnes of CO₂ equivalent, supported by afforestation, reforestation, and ecosystem restoration efforts.

NDCs and Climate Governance

- Nationally Determined Contributions (NDCs) are voluntary climate action plans under the Paris framework, updated every five years with increasing ambition.
- India's NDCs have evolved progressively from 2015 (first NDC) to 2022 (updated NDC for 2030) and now 2026 (targets for 2035).
- The targets are shaped by the principle of Common But Differentiated Responsibilities (CBDR-RC), developmental needs, and energy security concerns.
- The Global Stocktake process has highlighted that the world is not on track to meet the 1.5°C goal, influencing India's updated commitments.

Significance of India's Climate Strategy

- India is emerging as a leader of the Global South by demonstrating commitment to

climate action despite limited historical responsibility.

- The strategy balances economic growth, energy access, and climate mitigation through a climate justice approach.
- India maintains strategic autonomy by setting self-determined targets aligned with domestic priorities.

Main Pillars of India's Climate Strategy

- India's NDC implementation is guided by the National Action Plan on Climate Change (NAPCC) and State Action Plans on Climate Change (SAPCC).
- Climate action is supported through schemes such as Jal Jeevan Mission, MISHTI, PMKSY, and the National Disaster Management Plan.
- The approach is people-centric, driven by initiatives like Lifestyle for Environment (LIFE) and campaigns such as "Ek Ped Maa Ke Nam."

Concerns

- Critics argue that the targets are modest compared to India's current progress, particularly the 60% non-fossil capacity goal.
- There is a gap between installed capacity and actual generation, as renewable sources contribute only about 25% of electricity due to intermittency.
- Renewable expansion faces constraints such as land acquisition issues and inadequate transmission infrastructure.
- Forest cover remains below the desired 33% target, limiting carbon sink potential.
- Global climate governance remains unequal, with developed countries rolling back commitments and imposing measures like carbon border taxes.

Way Forward

- India needs to strengthen its renewable energy ecosystem through investments in grid infrastructure, storage, and green hydrogen.
- It should bridge the capacity-generation gap by improving efficiency and promoting hybrid renewable systems.

- Expanding agroforestry, urban forestry, and community-led conservation can enhance carbon sinks.
- Greater mobilisation of climate finance and technology transfer from developed countries is essential.
- Policy and institutional reforms are required to streamline approvals and strengthen climate governance.

5.2 WATER PARADOX IN INDIA

Context

- India's relationship with water reflects a paradox, as it is culturally revered but economically undervalued and poorly managed.
- Rising population, urbanisation, and climate change are intensifying water stress and threatening long-term sustainability.

Water Stress Reality

Shrinking Availability

- India has about 18 percent of the world's population but only 4 percent of global freshwater resources.
- Per capita water availability declined from 1,816 cubic metres in 2001 to about 1,486 cubic metres in 2021.
- It is projected to approach the water scarcity threshold of 1,000 cubic metres by 2050.

Demand-Supply Imbalance

- Rapid urbanisation and industrialisation are increasing demand beyond sustainable supply levels.
- Water scarcity is emerging as a constraint on economic growth and investment.

Climate Change and Hydrological Uncertainty

- Rainfall patterns are becoming erratic, with about 55 percent of tehsils experiencing intense short-duration rainfall leading to floods.
- Around 11 percent of tehsils, especially in the Indo-Gangetic Plains, face declining rainfall during critical agricultural periods.

- Nearly 80 percent of India's population lives in districts vulnerable to hydro-meteorological disasters.
- Extreme events between 2019 and 2023 caused losses of around 5 lakh crore rupees.

Reframing Water as a Strategic Resource

Green Water Management

- Policy has focused on blue water, while green water in soil moisture remains underutilised.
- Around 60 percent of rainfall is stored in soil, and improving soil organic carbon enhances water retention.
- Regenerative agriculture and forest conservation are essential for watershed stability.

Agricultural Water Use

- Agriculture consumes about 90 percent of India's water, with low productivity of about 0.52 dollars per cubic metre.
- Policy incentives favour water-intensive crops such as rice.
- Shifting about 3.6 million hectares from rice to millets and pulses can save nearly 29 billion cubic metres of water annually.

Circular Water Economy

- Only about 28 percent of urban wastewater is treated, limiting reuse potential.
- A treated wastewater economy could create a market of about 3.2 lakh crore rupees by 2047 and generate over 1 lakh jobs.
- Wastewater reuse can also produce biogas and fertilisers.

Urban Water Management

- Built-up areas have increased by about 33 percent since 2005, reducing groundwater recharge.
- Many cities have lost significant water bodies, contributing to urban flooding.
- Blue-green infrastructure such as wetlands, permeable surfaces, and urban forests can improve resilience.

Governance Reforms

- Water pricing is inefficient, and institutional frameworks are fragmented.
- Poor households often pay more through informal water markets such as tankers.
- Reforms should include transparent water accounting, rational pricing, and improved regulation.

Key Challenges

- Policy inertia in agriculture and subsidies continues to encourage inefficient water use.

- Fragmented governance across sectors reduces coordination and efficiency.
- Climate variability increases uncertainty in water availability.
- Urban mismanagement and encroachment of water bodies worsen scarcity.
- Low public awareness limits behavioural change.

Way Forward

- Integrate water, energy, and food policies to ensure sustainable resource use.
- Promote regenerative agriculture and crop diversification.
- Expand wastewater treatment and reuse through public-private partnerships.
- Adopt nature-based solutions for urban water management.
- Strengthen governance through technology, data systems, and community participation.

5.3 STATE OF THE WORLD'S MIGRATORY SPECIES REPORT

Context

- A recent update to the global report highlights that nearly half of migratory species populations are declining, with rising extinction risks due to habitat loss, overexploitation, and emerging threats such as disease.

About the Report

- The report is prepared under the Convention on the Conservation of Migratory Species of Wild Animals (CMS), 1979, under the United Nations Environment Programme.
- It assesses the conservation status, population trends, and threats to migratory species globally.
- The first global report (2024) covered 1,189 CMS-listed species and analysed over 3,000 additional migratory species using data from the International Union for Conservation of Nature Red List and scientific studies.

Importance of Migratory Species

- Migratory species play a key role in pollination, pest control, nutrient cycling, and maintaining food chains.
- They support livelihoods, tourism, and cultural traditions.
- Their survival depends on multiple habitats across countries, making them highly vulnerable to disruptions.

Key Findings

Declining Populations

- About 49 percent of migratory species populations under CMS are declining.
- Nearly 24 percent of species face extinction risk.
- Around 582 out of 1,189 species show declining trends.

Rising Extinction Risk

- At least 26 species have moved to higher threat categories on the International Union for Conservation of Nature Red List.
- A large share includes 18 migratory shorebird species, indicating severe stress on coastal ecosystems.

Major Threats

- Habitat loss and overexploitation are the primary drivers of decline.
- Urbanisation, agriculture, infrastructure, hunting, and overfishing disrupt migratory routes.
- Linear infrastructure such as roads, railways, and fences creates physical barriers to migration.

Emerging Threat

- Highly Pathogenic Avian Influenza (H5N1) has caused mass mortality in birds and affected marine mammals.
- Species such as penguins, pelicans, cranes, and sea lions have been impacted.

Key Biodiversity Areas (KBAs)

- About 9,372 Key Biodiversity Areas are important for migratory species.

- Nearly 47 percent of these areas lack protection, increasing vulnerability.

Conservation Success

- Some species have shown recovery due to coordinated action, including the Saiga Antelope, Scimitar-horned Oryx, and Mediterranean Monk Seal.

Implications

- Declining migratory species threaten ecosystem stability and biodiversity.
- Transboundary nature of migration requires international cooperation.
- Conservation gaps may worsen extinction risks if not addressed urgently.

Way Forward

- Strengthen protection of Key Biodiversity Areas and migratory corridors.
- Enhance international cooperation under CMS frameworks.
- Regulate habitat destruction and overexploitation.
- Improve monitoring systems and disease surveillance.

5.4 SHORT ARTICLES

World Water Day

Context:

- World Water Day (22 March), observed since 1993, highlights global water issues; 2026 theme: "Water and Gender", emphasizing the role of women in water management.

Details

- Proposed at the 1992 Rio Earth Summit, later adopted by the United Nations to promote awareness on freshwater conservation.
- Supports SDG 6 (clean water & sanitation) by raising awareness on water scarcity, pollution, and sanitation challenges worldwide.

National Productivity Council

Context

- The National Productivity Council (NPC) signed an agreement with MoEF&CC to act as the Environment Audit Designated Agency (EADA).

Details

- Established in 1958, NPC is an autonomous, multipartite, non-profit body under DPIIT, Ministry of Commerce & Industry, headquartered in New Delhi.
- Acts as a think tank and consultancy body, providing training, productivity improvement services, research, and capacity building; also a member of the Asian Productivity Organisation (APO).

Methane

Context

- Satellite data (Carbon Mapper) shows major methane emission hotspots in the oil & gas sector, especially in Turkmenistan.

Details

- Key Facts: Methane is a potent greenhouse gas (~30% of warming since Industrial Revolution), 2.5× higher than pre-industrial levels, and ~86 times more heat-trapping than CO₂ (20-year period).
- Sources & Features: Emitted mainly from agriculture, energy, and waste sectors; colourless, odourless, flammable, short-lived (~12 years) but a major driver of near-term climate change.

Hypercapnic hypoxia

Context

- A new study highlights widespread hypercapnic hypoxia (high CO₂, low O₂) in mangroves, indicating increasing ecological stress due to climate change and warming.

Details

- Cause & Conditions: Occurs mainly during low tide, low salinity, and warm tropical conditions, driven by rising CO₂ levels and temperature increase.
- Impacts: Threatens fish nurseries, biodiversity, and fisheries livelihoods, and alters mangrove species composition, affecting ecosystem stability.

Nagoya Protocol

Context

- India submitted its First National Report on implementation of the Nagoya Protocol under the Convention on Biological Diversity (CBD).

Details

- Core Idea: A 2010 supplementary agreement to CBD ensuring fair and equitable sharing of benefits from use of genetic resources and associated traditional knowledge.
- Key Facts: Came into force in 2014; India ratified in 2012; supports CBD goals of

conservation, sustainable use, and benefit-sharing.

National Biodiversity Authority

Context

- The National Biodiversity Authority (NBA) launched a short-term internship programme for students to promote awareness and research in biodiversity.

Details

- About NBA: A statutory body (2003) under the Biological Diversity Act, 2002, headquartered in Chennai; performs regulatory, advisory, and facilitative functions.
- Functions & Structure: Focuses on conservation, sustainable use, and benefit-sharing; supported by State Biodiversity Boards (SBBs) and Biodiversity Management Committees (BMCs) at local level.

World Wildlife Day

Context

- India reaffirmed its commitment to wildlife conservation on World Wildlife Day 2026.

Details

- About: Observed annually on March 3, it was declared by the United Nations General Assembly (2013) to mark the signing of CITES (1973) and promote conservation awareness.
- Theme 2026: Medicinal and Aromatic Plants: Conserving Health, Heritage and Livelihoods.

Dark Oxygen

Context

- Scientists discovered “dark oxygen” production on the deep ocean floor, where sunlight is absent.

Details

- What it is: Oxygen generated without photosynthesis, observed in the Clarion-Clipperton Zone (Pacific Ocean); produced through electrochemical processes rather than biological activity.
- Significance: Challenges the idea that oxygen requires sunlight; linked to polymetallic

nodules generating oxygen via electrolysis, with implications for deep-sea ecology and possibility of life on other planets.

Anavaran Portal

Context

- The Forest Survey of India has stopped the Anavaran Portal (Deforestation Alert System), which monitored forest loss.

Details

- Core Function: A satellite-based alert system (since 2024) providing fortnightly deforestation alerts to states for targeted inspections.
- Uses Google Earth Engine, Sentinel-1 & Sentinel-2 data, enabling real-time forest monitoring and conservation planning.

Waste Foundry Sand

Context

- Institute of Indian Foundrymen and CSIR-Central Road Research Institute partnered to use Waste Foundry Sand in road construction.

Details

- About: A by-product of metal casting industries, consisting mainly of high-quality

silica sand; classified into clay-bonded (green sand) and chemically bonded sand based on binders used.

- Helps address waste disposal challenges, promotes resource efficiency, and supports sustainable infrastructure development.

Earth Hour

Context

- Marking 20 years of Earth Hour, awareness activities organised in India by World Wide Fund for Nature India.

Details

- About: A global environmental movement started in Sydney (2007) to raise awareness about climate change and energy conservation.
- Participation & Significance:
 - Observed annually in March.
 - People switch off lights for one hour (8:30–9:30 PM local time).
 - Encourages collective climate action, with participation from governments, businesses, and citizens worldwide.

5.5 SNIPPETS

PROTECTED AREAS IN NEWS

Topics	Details
Bura Chapori Wildlife Sanctuary	<ul style="list-style-type: none"> Assam plans a Reserved Forest near Burhachapori Wildlife Sanctuary (Sonitpur district) to strengthen the Laokhowa–Burachapori ecosystem and wildlife conservation. Situated on the south bank of the Brahmaputra, between Kaziranga NP (east) and Orang NP (west); features alluvial grasslands, wetlands, and semi-evergreen forests under a sub-tropical monsoon climate. Hosts species like one-horned rhinoceros, tiger, elephant, wild buffalo, and birds such as the critically endangered Bengal Florican, along with rich medicinal plant diversity.
Pobitora Wildlife Sanctuary	<ul style="list-style-type: none"> The National Board for Wildlife approved rationalisation of boundaries of Pobitora Wildlife Sanctuary (Assam). Established in 1998, located in Brahmaputra floodplains; dominated by alluvial grasslands and elephant grass, part of Indian Rhino Vision 2020. Known for the highest density of one-horned rhinoceros in India, along with

	species like leopard, wild buffalo, and deer; invasive water hyacinth is a concern.
Sathyamangalam Tiger Reserve	<ul style="list-style-type: none"> The Tamil Nadu government sealed illegal resorts in the eco-sensitive zone of Sathyamangalam Tiger Reserve to strengthen conservation. Situated at the junction of Eastern & Western Ghats in the Nilgiri Biosphere Reserve; connected with Mudumalai, Bandipur, and Biligiri Ranganatha Hills Tiger Reserve (Karnataka); features diverse forests and rivers like Bhavani and Moyar. Hosts rich fauna including tiger, elephant, gaur, sloth bear, and endemic species; inhabited by tribes like Irula and Kurumba.
Megamalai Wildlife Sanctuary	<ul style="list-style-type: none"> A Zoological Survey of India survey in Megamalai Wildlife Sanctuary (Tamil Nadu) led to the discovery of nine new species. Situated on the Tamil Nadu-Kerala border, acts as a buffer to Periyar Tiger Reserve; features scrub forests, evergreen forests, and shola grasslands. Hosts species like tiger, elephant, Nilgiri tahr, lion-tailed macaque, and endemic fauna like the wood snake, along with rich plant diversity.
Kanha Tiger Reserve	<ul style="list-style-type: none"> Kanha Tiger Reserve (Madhya Pradesh) will receive Asiatic water buffalo translocation from Kaziranga to aid species conservation. Situated in the Maikal range of Satpura, with corridors linking Pench and Achanakmar Tiger Reserves; features sal and mixed deciduous forests with undulating terrain. Home to tigers, leopards, wild dogs, and the iconic Barasingha; inhabited by tribes like Gond and Baiga.
Sharavathi Lion-Tailed Macaque Sanctuary	<ul style="list-style-type: none"> The Karnataka High Court ordered no ground activities in the Sharavathi Lion-Tailed Macaque Sanctuary and its Eco-Sensitive Zone to ensure conservation. Situated in Karnataka (Western Ghats, UNESCO site); formed by merging Sharavathi Valley WLS, Aghanashini Conservation Reserve, and adjoining forests; near Mookambika WLS. Rich in evergreen and moist deciduous forests; key habitat for endangered lion-tailed macaque, along with tiger, leopard, sloth bear, and deer species.
Nauradehi Wildlife Sanctuary	<ul style="list-style-type: none"> Nauradehi Wildlife Sanctuary is set to receive cheetahs under India's reintroduction programme. Largest sanctuary in MP, located in the Vindhyan plateau; acts as a corridor linking Panna, Satpura, and Bandhavgarh; spans Yamuna and Narmada basins. Features dry deciduous forests and grasslands, supporting species like tiger, leopard, wolf, sloth bear, and suitable habitat for cheetah restoration.
National Chambal Sanctuary	<ul style="list-style-type: none"> The Supreme Court took note of sand mining threats to the National Chambal Sanctuary, impacting its fragile riverine ecosystem. Location & Features: A tri-state sanctuary (MP, UP, Rajasthan) along the Chambal River, also known as National Chambal Gharial Sanctuary; characterised by ravines and sandy banks. Key habitat for critically endangered gharial, Ganges dolphin, and turtles; also supports otters, hyena, Indian wolf, and is an Important Bird Area (IBA).
Deepor Beel	<ul style="list-style-type: none"> Ongoing illegal earth cutting near Deepor Beel (Guwahati) raises concerns over wetland conservation despite court restrictions. A permanent freshwater lake in Assam, former channel of the Brahmaputra, and the only major stormwater basin for Guwahati; fed by Kalmani & Basistha rivers. A Ramsar Site & Important Bird and Biodiversity Area (only in Assam); crucial for

	migratory birds and elephants, supporting species like Spot-billed Pelican, Greater Adjutant, and Baer's Pochard.
Debrigarh Wildlife Sanctuary	<ul style="list-style-type: none"> • Hosting Indian Bison Fest (2nd edition). • Located in Bargarh (Odisha) near Hirakud Dam (Mahanadi River); associated with Veer Surendra Sai's guerrilla resistance. • Biodiversity: Dry deciduous forests; fauna includes gaur (Indian bison), leopard, sloth bear, chousingha; important migratory bird habitat.
Silent Valley National Park	<ul style="list-style-type: none"> • A bird survey in Silent Valley National Park (Kerala) recorded 192 bird species. • Located in the Nilgiri Biosphere Reserve (UNESCO site); one of India's last undisturbed tropical rainforests, nourished by the Kunthipuzha River. • Rich in evergreen forests and diverse flora, home to species like lion-tailed macaque, Nilgiri langur, elephant, tiger, and high endemic biodiversity.
Kappatagudda Wildlife Sanctuary	<ul style="list-style-type: none"> • The Karnataka High Court directed expansion of Kappatagudda Wildlife Sanctuary by including remaining reserve forest areas. • Situated in Karnataka, known as the "Western Ghats of North Karnataka" due to its diverse habitats—dry deciduous forests, grasslands, and scrublands; also a catchment of the Tungabhadra River. • Hosts species like leopard, wolf, hyena, blackbuck; rich in medicinal plants and dotted with historic temples (Chalukya-Rashtrakuta era).
Dudhwa Tiger Reserve	<ul style="list-style-type: none"> • A rare incident of a rhino killed by tigers was reported in Dudhwa Tiger Reserve (Uttar Pradesh). • Situated on the Indo-Nepal border (Lakhimpur-Kheri); includes Dudhwa National Park, Kishanpur and Katerniaghat Wildlife Sanctuaries; represents Tarai-Bhabar ecosystem. • Biodiversity: Rich moist deciduous (Sal) forests; home to tiger, rhinoceros, swamp deer, leopard, and diverse birdlife like florican and black-necked stork.
Coringa Wildlife Sanctuary	<ul style="list-style-type: none"> • Conservation of ~20,000 Olive Ridley turtle eggs on Hope Island. • Located in Andhra Pradesh, part of the Godavari estuary where the Coringa River meets the Bay of Bengal; 2nd largest mangrove ecosystem in India. • Flora: Mangroves like Rhizophora, Avicennia, Sonneratia. • Fauna: Fishing cat, smooth-coated otter, jackal, rich birdlife. • Coast serves as a breeding ground for Olive Ridley turtles.
Amrabad Tiger Reserve	<ul style="list-style-type: none"> • Telangana government is undertaking rehabilitation of tribal families in Amrabad Tiger Reserve to balance conservation and livelihoods. • Situated in the Nallamala Hills (Eastern Ghats, Telangana); earlier part of Nagarjunasagar-Srisailem Tiger Reserve; known for rugged terrain, deep valleys, dense forests. • Rivers: Krishna River and streams support Srisailem & Nagarjunasagar reservoirs. • Tribal Group: Chenchu tribe. • Biodiversity: Dry deciduous forests (teak, bamboo); fauna includes tiger landscape species, leopard, gaur, deer, and 300+ bird species.

FAUNA IN NEWS

Topics	Details
Blue-and-White Flycatcher	<ul style="list-style-type: none"> • A rare sighting of the Blue-and-White Flycatcher was reported in Pavagadh Hills (Gujarat). • A migratory songbird (<i>Cyanoptilacyanomelana</i>) of the Muscipidae family, also called the Japanese flycatcher. • Breeds in East Asia and winters in Southeast Asia; found in wooded forests and scrublands; IUCN status: Least Concern.
Hudsonian godwit	<ul style="list-style-type: none"> • The Hudsonian godwit population has declined by ~95% in four decades due to habitat loss and climate change across its migratory range. • A large migratory shorebird (<i>Limosa haemastica</i>) of the sandpiper family; breeds in sub-Arctic wetlands, migrates annually from the Arctic to Patagonia, feeding on insects and crustaceans. • Listed as Vulnerable (IUCN Red List); threatened mainly by wetland degradation and climate change.
Spotted Hyena	<ul style="list-style-type: none"> • A study highlights the spotted hyena as an 'eco-warrior' in Ethiopia (Mekelle) for its role in urban ecosystem management. • The largest hyena species (<i>Crocuta crocuta</i>), carnivorous hunter-scavenger; nocturnal, with a matriarchal clan system and unique traits like a pseudo-penis in females. • Helps in waste removal and disease control; widely distributed in sub-Saharan Africa; IUCN status: Least Concern.
Sambar deer	<ul style="list-style-type: none"> • Sambar deer recorded for the first time in high-altitude areas of Himachal Pradesh (Chamba). • Key Features: <i>Rusa unicolor</i>, the largest oriental deer, found across South and Southeast Asia; prefers forested habitats near water and vegetation-rich areas. • Conservation Status: IUCN Red List: Vulnerable; faces threats from habitat loss and hunting.
Chhapgarusngankeae	<ul style="list-style-type: none"> • A new marine crab species, Chhapgarusngankeae, was discovered in Goan mangroves by the Zoological Survey of India and named after marine biologist Dr. Ngan Kee Ng. • Found in muddy intertidal mangrove habitats along India's west coast; represents biodiversity richness of coastal ecosystems. • Mangrove crabs are vital for nutrient recycling and sustaining food chains, supporting overall coastal ecosystem health.
Myiophaneskempi	<ul style="list-style-type: none"> • Myiophaneskempi, a rare cave-dwelling insect, has been rediscovered in the Andaman Islands after ~100 years. • A slender assassin bug (family Reduviidae), adapted to subterranean life, using raptorial forelegs to prey on small arthropods in dark caves. • Indicates unique cave biodiversity; earlier recorded from Siju Cave (Meghalaya), one of India's longest limestone cave systems.
Takydromusultapanensis	<ul style="list-style-type: none"> • Newly discovered Asian grass lizard from Assam (Manas Biosphere). • Found in lowland semi-evergreen forests; distinct in scale and

	<p>morphology.</p> <ul style="list-style-type: none"> • Endemic, limited distribution, raising conservation concerns.
Doomsday Fish	<ul style="list-style-type: none"> • Rare sightings of oarfish (“doomsday fish”) near Mexico sparked interest due to associated folklore. • Key Features: Regalecus glesne, the longest bony fish, a deep-sea species from the mesopelagic zone (~1000 m); ribbon-like body, vertical floating, feeds on plankton and crustaceans. • Linked to myths as a harbinger of disasters (Japanese: “Ryugu no tsukai”), though no scientific evidence supports this belief.
Chelonusmahadeb	<ul style="list-style-type: none"> • A new parasitic wasp species, Chelonusmahadeb, was discovered in a tea estate in Assam. • Key Features: An egg-larval parasitoid, it lays eggs inside host insect eggs (mainly moths/butterflies), and larvae consume the host, regulating pest populations. • Belongs to a rare subgenus (Carinichelonus); useful for biological pest control in agriculture and plantations.
Sahiwal cattle	<ul style="list-style-type: none"> • ICAR-IVRI successfully produced Sahiwal cattle calves using advanced OPU-IVF-ET technology, boosting indigenous breed conservation and productivity. • One of India’s best milch breeds, originating from Punjab (Pakistan); known for heat tolerance, tick resistance, high milk yield, and adaptability to tropical climates. • Ovum Pick-Up + IVF + Embryo Transfer enables rapid multiplication of high-quality indigenous breeds, improving genetic potential and reducing generation interval.
Ruddy Shelduck	<ul style="list-style-type: none"> • Community-led conservation in Ladakh. • Key Features: Tadornaferruginea (Brahminy duck); migratory bird of Anatidae family. • Breeds in Central Asia, winters in India (Himalayas); prefers inland water bodies; IUCN: Least Concern.
Butis bargabhimae	<ul style="list-style-type: none"> • A new estuarine fish species, Butis bargabhimae, was discovered in the Rupnarayan River (West Bengal). • Belongs to the gudgeon goby (butid) family, found in brackish waters; distinguished by interorbital scales and banded pectoral fins. • Named after Goddess Bargabhima, highlighting regional biodiversity and cultural linkage.
Monarch butterfly	<ul style="list-style-type: none"> • Monarch butterfly populations showed a 64% increase in Mexico’s overwintering forests (2025-26), indicating partial recovery. • Key Features: Danaus plexippus—orange-red wings with black veins; famous for long-distance migration from North America to central Mexico; larvae depend exclusively on milkweed plants. • Threats: Habitat loss, illegal logging, decline of milkweed, and climate change continue to threaten its survival despite recent gains.
Shaheen falcons	<ul style="list-style-type: none"> • A pair of Shaheen falcons was found nesting in a residential complex in Kochi, indicating urban adaptability of raptors. • A non-migratory subspecies of Peregrine falcon (Falco peregrinus

	<p>peregrinator); powerful flier known for high-speed stoop hunting, found in rocky and hilly regions across the Indian subcontinent.</p> <ul style="list-style-type: none"> • Feeds mainly on birds; shows adaptability to varied habitats; listed as Least Concern (IUCN).
New Moth Species	<ul style="list-style-type: none"> • Zoological Survey of India discovered two new lichen moth species—Caulocerahollowayi (Sikkim) and Asura buxa (West Bengal) in the eastern Himalayas. • Key Features: Identified based on distinct wing patterns, colour bands, and microscopic anatomical traits, differentiating them from known species. • Significance: Lichen moths act as bioindicators of air quality, as their larvae depend on pollution-sensitive lichens, making them vital for ecosystem monitoring.
New earthworm species	<ul style="list-style-type: none"> • Two new earthworm species—Moniligastergirishi and Drawidareynoldsi—were discovered in the Western Ghats. • Moniligastergirishi: Found in tropical evergreen forests, with distinct reproductive structures. • Drawidareynoldsi: Found in montane grasslands, belongs to robust earthworm group. • Earthworms act as ecosystem engineers, improving soil fertility, aeration, and nutrient cycling.
Indian Wolf	<ul style="list-style-type: none"> • An Indian wolf at Pilikula Biological Park gave birth to pups. • Key Features: A subspecies of the grey wolf, adapted to semi-arid grasslands and scrublands; lives in small packs, less vocal, and hunts mainly at night. • Conservation Status: Faces threats from habitat loss and human conflict; listed as Vulnerable (IUCN), Appendix I (CITES), and Schedule I (Wildlife Protection Act, 1972).
Vela carli	<ul style="list-style-type: none"> • Researchers discovered that the freshwater crab Vela carli in Silent Valley National Park (Kerala) exhibits gynandromorphy (both male and female traits). • An endemic crab of the Western Ghats (family Gecarcinucidae); shows rare condition with male reproductive organs and female features (gonopores). • Significance: First such case reported in this crab family, highlighting unique biodiversity of Silent Valley within the Nilgiri Biosphere Reserve (UNESCO site).
Sperm Whales	<ul style="list-style-type: none"> • Sperm whales were recently observed headbutting on camera, offering new insights into their behaviour. • The largest toothed whale, with the biggest brain, distinctive square head, and spermaceti organ used for sound focusing. • Found in deep oceans worldwide, highly social (use clicks/codas); produce ambergris; IUCN: Vulnerable, CITES Appendix I.
Koala	<ul style="list-style-type: none"> • A koala population rebound in Australia is improving genetic diversity, offering hope for conservation. • Koala (Phascolarctos cinereus) is a marsupial (pouched mammal), arboreal and mainly feeds on eucalyptus leaves; native to eastern

	<p>and southeastern Australia.</p> <ul style="list-style-type: none"> • Status & Significance: Slow-moving, tree-dwelling species; IUCN status: Vulnerable, facing threats from habitat loss, climate change, and bushfires.
Beaver	<ul style="list-style-type: none"> • A study highlights that beavers can modify river systems to help reduce carbon dioxide release, aiding climate mitigation. • Semi-aquatic rodents (genus <i>Castor</i>), native to North America, Europe, and Asia; known for dam-building and tail-slap communication. • Act as “ecosystem engineers”, creating wetlands that enhance carbon storage, biodiversity, and water regulation; IUCN: Least Concern.
Dusky Eagle Owl	<ul style="list-style-type: none"> • A rare sighting of the Dusky Eagle Owl was recorded near Corbett Tiger Reserve (Uttarakhand) after 15 years. • A large owl (family Strigidae) with grey-brown plumage, ear tufts, and strong hunting abilities; females larger than males. • Found in riverside forests and old-growth trees across South and Southeast Asia; IUCN: Least Concern.
Steppe Eagle	<ul style="list-style-type: none"> • Western Rajasthan identified as a key wintering stronghold for the Steppe Eagle. • A large raptor of Aquilinae (booted eagles); dark brown, robust, and unique for ground nesting behavior. • Breeds in Central Asia (Kazakhstan, Russia, Mongolia) and migrates to South Asia & Africa; prefers open landscapes like grasslands, deserts, and fields. • IUCN: Endangered; threatened by habitat loss, human interference, wildfires, and predation of chicks.
Forest Owlet	<ul style="list-style-type: none"> • The Forest Owlet was spotted in Kuno National Park (Madhya Pradesh) after 113 years, marking a significant rediscovery. • A small owl of Strigidae family, diurnal (day-active); identified by unspotted crown, throat collar, banded wings; feeds on rodents, reptiles, insects. • Endemic to central India (dry and moist deciduous forests); IUCN: Endangered, CITES: Appendix I.
Gitchaknakana	<ul style="list-style-type: none"> • New groundwater fish species discovered in Assam. • Key Features: Blind, pigmentless, adapted to subterranean aquifers; lacks skull roof. • Rare example of aquifer-dwelling fish, highlighting hidden biodiversity.
New freshwater fish species	<ul style="list-style-type: none"> • Two new freshwater fish species—<i>Glyptothoraxsentimereni</i> and <i>Oreichthyseliana</i>—were discovered in Nagaland (Brahmaputra tributaries). • <i>Glyptothoraxsentimereni</i>: A torrent-dwelling catfish with adhesive structures to cling to rocks in fast currents. • <i>Oreichthyseliana</i>: Noted for bright red fins and a distinct black tail blotch.
Deinococcusradiodurans	<ul style="list-style-type: none"> • Studies show <i>Deinococcusradiodurans</i> can survive extreme

	<p>radiation, dryness, and even high-impact pressures, raising interest in astrobiology.</p> <ul style="list-style-type: none"> • A radiation-resistant bacterium (“Conan the Bacterium”), capable of surviving extreme conditions like radiation, vacuum, dehydration, and cold; first discovered in irradiated canned meat (1956). • Possesses powerful antioxidant systems (manganese-based) and advanced DNA repair mechanisms, making it important for space research and biotechnology.
<p>New fruit fly species</p>	<ul style="list-style-type: none"> • Two new fruit fly species—<i>Acidoxanthaparatotoflava</i> and <i>Hemileasuneriae</i>—were discovered in the Himalayan foothills (Himachal Pradesh). • Identified by distinct body colours, wing patterns, and unique anatomical traits; includes correction of earlier species misidentification. • Records genus <i>Rhagoletis</i> for the first time, and resolves a century-old taxonomic gap (<i>Euphrantanigripeda</i> male).
<p>Stenothoelowryi</p>	<ul style="list-style-type: none"> • <i>Stenothoelowryi</i>, a rare marine amphipod, was recorded for the first time in Indian waters (Odisha coast). • A shrimp-like crustacean (family Stenothoidae, order Amphipoda), earlier known from Malaysia; inhabits marine coastal ecosystems. • Amphipods play key roles as decomposers and scavengers in aquatic food chains.
<p>Keelback snake</p>	<ul style="list-style-type: none"> • Wildlife Institute of India documented Rakhine Keelback (<i>Herpetoreasdauidi</i>) and Kachin Hills Keelback (<i>Hebiusgilhodesi</i>) in Northeast India. • Generally non-venomous snakes. • Characterised by “keeled scales” (raised ridges), giving a rough texture and aiding camouflage. • Found in moist forests, wetlands, and near streams. • Feed on frogs, lizards, fish, and tadpoles. • Act as bioindicators of healthy ecosystems, especially in riparian and forest habitats.
<p>Kali Night Frog</p>	<p>A new frog species <i>Nyctibatrachus kali</i> discovered in Karnataka.</p> <ul style="list-style-type: none"> • Named after the Kali River; belongs to the night frog genus (<i>Nyctibatrachus</i>). • A cryptic species (closely resembles <i>Nyctibatrachus kumbara</i>). • Unique call resembling wood-chopping sounds in forests. • Kali Tiger Reserve <ul style="list-style-type: none"> ○ Located in Uttara Kannada (Karnataka); comprises Dandeli Wildlife Sanctuary and Anshi National Park. ○ Dominated by semi-evergreen and moist deciduous forests with bamboo patches. ○ Home to tiger, leopard, elephant, gaur, wild dog, deer species; nourished by the Kali River.
<p>Red-crowned Roofed Turtle</p>	<ul style="list-style-type: none"> • Once abundant in the Ganga, now restricted to shrinking habitats. • About: A freshwater turtle (genus <i>Batagur</i>) endemic to South Asia (India, Bangladesh, Nepal); earlier widespread in Ganga-

	<p>Brahmaputra basin.</p> <ul style="list-style-type: none"> • Key Features: <ul style="list-style-type: none"> ○ Males have reddish-orange head with black crown; females larger. ○ Omnivorous; plays role in nutrient cycling and acts as a bio-indicator of river health. • IUCN: Critically Endangered Wildlife Protection Act: Schedule I CITES: Appendix II
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FLORA IN NEWS

Topics	Details
Mangroves	<ul style="list-style-type: none"> • The Supreme Court upheld mangrove removal for the Versova-Bhayandar coastal road, highlighting concerns over conservation vs development. • Mangroves are salt-tolerant coastal ecosystems with adaptations like pneumatophores (aerial roots), prop roots, salt filtration, and vivipary, thriving in harsh intertidal conditions. • Act as natural coastal buffers, support biodiversity, and are high carbon sinks; found in India in Sundarbans, Bhitarkanika, deltas of Mahanadi-Godavari-Krishna, Gulf of Kutch, and Andaman & Nicobar.
Actinidia indica	<ul style="list-style-type: none"> • Scientists from the Botanical Survey of India discovered a new wild kiwi species, Actinidia indica, in Arunachal Pradesh (Ziro Valley). • A perennial climbing shrub with hairy branches, large ovate leaves, creamy-white flowers, and olive-green fruits with reticulate patterns. • Found in a temperate-subtropical transition zone, the discovery adds to Actinidia diversity and highlights India's rich but underexplored biodiversity.
Prosopis juliflora	<ul style="list-style-type: none"> • The Madras High Court ordered eradication of Prosopis juliflora in Tamil Nadu due to its invasive ecological impact. • A mesquite species (Fabaceae) native to Mexico & South America; highly adaptable to harsh soils and climates, with aggressive growth that outcompetes native species. • Causes groundwater depletion, biodiversity loss, and land degradation, disrupting grassland ecosystems and native habitats.
Henckeliamonophylla	<ul style="list-style-type: none"> • Henckeliamonophylla, a rare plant from Arunachal Pradesh, has been rediscovered after ~189 years by the Botanical Survey of India. • Key Features: An endemic perennial herb (Gesneriaceae family), first recorded in 1836 by William Griffith, growing in moist forest habitats.
Osbeckiazubeengargiana	<ul style="list-style-type: none"> • A new plant species, Osbeckiazubeengargiana, was discovered in Manas National Park (Assam) and named after singer Zubeen Garg. • Key Features: A perennial shrub (Melastomataceae family) with purple-pink tetramerous flowers, growing in moist grassland habitats.

6. SCIENCE & TECHNOLOGY AND HEALTH

6.1 METABOLIC DISEASES BURDEN IN INDIA

Context

- The Global Burden of Disease (GBD) Study (1990–2023) shows that India has one of the highest metabolic disease burdens in the Asia-Pacific region, with a rapid rise in lifestyle-related disorders.

Understanding Metabolic Diseases

- Metabolic diseases are disorders that affect the body's energy regulation processes and include Type 2 Diabetes Mellitus, Hypertension (High Blood Pressure), Obesity or High Body Mass Index (BMI), High Low-Density Lipoprotein (LDL) Cholesterol, and Metabolically Dysfunction-Associated Steatotic Liver Disease (MASLD).
- These diseases are major contributors to Non-Communicable Diseases (NCDs) and are closely linked to lifestyle changes, urbanisation, and unhealthy diets.

Key Findings

- The disease burden is measured using Disability-Adjusted Life Years (DALYs), which combine years of life lost due to premature death and years lived with disability, along with mortality rates.
- Five major metabolic risk factors identified are Type 2 Diabetes Mellitus, High Systolic Blood Pressure, High Body Mass Index, High Low-Density Lipoprotein Cholesterol, and Metabolically Dysfunction-Associated Steatotic Liver Disease.

India's Disease Burden

- Around 21 million Disability-Adjusted Life Years (DALYs) are linked to Type 2 Diabetes Mellitus.
- Approximately 5.8 lakh deaths occur annually due to diabetes.

- High Systolic Blood Pressure contributes nearly 3.8 crore Disability-Adjusted Life Years (DALYs) and about 15.7 lakh deaths.
- India recorded the highest metabolic disease burden in terms of Disability-Adjusted Life Years (DALYs) in the Asia-Pacific region in 2023, surpassing China.

Rising Risk Factors

- Obesity and High Body Mass Index are increasing at an annual rate of about 2.7–2.9 percent.
- High Low-Density Lipoprotein Cholesterol and Metabolically Dysfunction-Associated Steatotic Liver Disease are also rising.
- Major drivers include rapid urbanisation, sedentary lifestyles, and increased consumption of ultra-processed foods rich in sugar, salt, and unhealthy fats.

Implications

- Metabolic diseases increase the burden on healthcare systems through long-term treatment and hospitalisation.
- They reduce workforce productivity and impose significant economic costs.
- The burden is expected to rise further by 2030 without effective intervention.

Policy Measures

- Promote healthier diets by regulating ultra-processed foods and reducing excessive sugar, salt, and unhealthy fats.
- Introduce clear front-of-pack nutrition labelling to improve consumer awareness.
- Encourage physical activity through better urban planning, including walking and cycling infrastructure.
- Strengthen screening and early detection of diabetes, hypertension, obesity, and liver disease at the primary healthcare level.

- Improve implementation of existing health programmes across states.

6.2 TUBERCULOSIS IN INDIA: DIAGNOSTICS AND COMMUNITY APPROACH

Context

- Tuberculosis remains a major public health challenge in India due to high disease burden, delayed diagnosis, and persistent social stigma.
- Effective elimination requires a combination of technological innovation and community engagement.

Key Diagnostic Advancements

Decentralised Testing

- Near point-of-care tests have enabled rapid and decentralised diagnosis at the primary healthcare level.
- Innovations such as tongue swabs and sputum pooling have improved access for vulnerable populations.

AI-Enabled Screening

- Portable chest X-rays integrated with artificial intelligence enable large-scale, rapid screening.
- Mobile units under the National TB Elimination Programme have improved early detection in underserved areas.

Molecular Diagnostics

- India has shifted to nucleic acid amplification tests such as CBNAAT and Truenat.
- These tests provide rapid and accurate detection of TB and drug resistance.

Need for Integration

- No single diagnostic tool is sufficient, requiring a combined approach of molecular tests, AI imaging, and decentralised systems.
- Diagnostic network optimisation ensures efficient deployment of resources across regions.

Persistent Gaps

- Access to advanced diagnostics remains uneven in rural and remote areas.
- Weak sample transport and laboratory capacity delay diagnosis.
- Detection of asymptomatic, paediatric, and extra-pulmonary TB remains challenging.
- Lack of biomarkers limits identification of high-risk individuals.

Social Challenges

- Stigma and discrimination discourage timely diagnosis and treatment adherence.
- Vulnerable groups face greater barriers, making biomedical approaches alone insufficient.

TB Champion Movement

- TB Champions are recovered patients who provide peer support and community outreach.
- They improve treatment adherence through emotional support and counselling.
- They enhance awareness, reduce stigma, and promote early diagnosis.
- They strengthen last-mile healthcare delivery in marginalised communities.

Challenges

- TB Champion initiatives face sustainability issues due to dependence on external funding.

Way Forward

- India must ensure equitable access to diagnostics and strengthen decentralised infrastructure.
- Research should focus on biomarkers and non-invasive diagnostic tools.
- TB Champions should be integrated into formal health systems.
- Awareness campaigns must address stigma and promote early care-seeking behaviour.

6.3 SHORT ARTICLES

Adipose tissue

Context

- Scientists highlight that adipose tissue is an active metabolic and endocrine organ, not just fat storage.

Details

- Types:
- White fat – stores energy (triglycerides), releases hormones like leptin & adiponectin
- Brown fat – burns energy to produce heat (via UCP1)
- Beige fat – intermediate type with heat-producing ability
- Functions & Impact: Regulates metabolism, insulin, and energy balance, cushions organs; excess leads to insulin resistance, fatty liver, and cardiovascular diseases.

Atomic Clocks

Context

- NavIC (India's regional navigation system) faces a setback as the atomic clock of IRNSS-1F failed, reducing accurate positioning capability; replacement satellite NVS-02 also failed to reach final orbit.

Details

- An atomic clock is a highly precise timekeeping device that measures time using the natural oscillations of atoms, typically caesium or rubidium atoms.
- Unlike traditional clocks that rely on mechanical or electronic oscillators, atomic clocks operate based on the consistent frequency of atomic transitions.
- In an atomic clock, atoms are exposed to microwave radiation. The radiation causes the atoms to transition between energy states at a precise frequency. This frequency is used to measure time with extraordinary accuracy.
- Core Issue: Atomic clocks are crucial for precise timing → accurate location data;

failures in ageing satellites and delays in replacements have weakened NavIC's operational constellation and reliability.

Moonshot Project

Context

- The Indian Institute of Science launched a Moonshot Project to develop advanced brain technologies.

Details

- Core Objective: To create brain co-processors using neuromorphic hardware + artificial intelligence, enabling decoding and re-encoding of brain signals to restore lost functions.
- Aims at stroke rehabilitation and cognitive recovery, helping restore movement and coordination, marking a major step in neurotechnology and healthcare innovation.

Rashtriya Vigyan Puraskar

Context

- Nominations opened for Rashtriya Vigyan Puraskar 2026.

Details

- A prestigious national award recognizing excellence in science, technology, and innovation, including contributions from Indian citizens and Persons of Indian Origin abroad.
- Categories:
 - Vigyan Ratna – Lifetime achievement
 - Vigyan Shri – Distinguished contributions
 - Vigyan Yuva–Shanti Swarup Bhatnagar – Young scientists (≤ 45 years)
 - Vigyan Team – Collaborative research excellence
- Managed by Council of Scientific and Industrial Research under the Ministry of Science & Technology with guidance from the Principal Scientific Advisor.

6.4 SNIPPETS

MATERIALS IN NEWS

Topics	Details
Titanium	<ul style="list-style-type: none"> Study by IIT-Kharagpur and PRL Ahmedabad decoded titanium-rich lunar rocks, helping understand Moon's volcanism and crust composition. Titanium is the 4th most abundant metal; occurs as Ilmenite (FeTiO_3) and Rutile (TiO_2); extracted via the Kroll process. Properties & Uses: Lightweight, strong, corrosion-resistant; used in aerospace, medical implants, alloys, and in astronomy (titanium oxide for red dwarf stars).
Neodymium-Iron-Boron Magnet	<ul style="list-style-type: none"> A pilot plant at international Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) Hyderabad has been set up to manufacture Nd-Fe-B (Neodymium-Iron-Boron) magnets, boosting indigenous capability in critical materials. Strongest permanent magnets, made of neodymium, iron, and boron (with additives like dysprosium); available as sintered, bonded, and hot-pressed types. Widely used in electronics (mobiles, hard drives, earphones), power tools, and advanced technologies requiring high magnetic strength.
Peptides	<ul style="list-style-type: none"> Peptides are gaining importance in medical research and therapeutics due to their diverse biological roles. Peptides are short chains of amino acids (2–50 units) linked by peptide bonds; smaller and structurally simpler than proteins. Act as hormones, signaling molecules, and bioactive agents with roles in inflammation control, muscle growth, and metabolism.
Ethyl chloroformate	<ul style="list-style-type: none"> India has initiated an anti-dumping probe into ethyl chloroformate imports from China due to alleged unfair pricing. Key Properties: A colorless to yellow liquid, toxic, flammable, and corrosive; hydrolyses in water, emits HCl fumes, and vapours are heavier than air. Used as an intermediate in pharmaceuticals and agrochemicals; exposure can cause serious health hazards, especially via inhalation.
MXene	<ul style="list-style-type: none"> Researchers at IIT Guwahati developed an MXene-based catalyst for efficient hydrogen production and desalination. MXenes are 2D materials (Mn+1XnTx) derived from MAX phases; known for high conductivity, strength, hydrophilicity, and tunable surface chemistry (e.g., $\text{Ti}_3\text{C}_2\text{Tx}$ Titanium carbide). They have the general formula of Mn+1XnTx, where M is an early transition metal, X is carbon and/or nitrogen, and T is a functional group on the surface of an MXene (typically O, OH, and F). Used in energy storage (batteries, supercapacitors), water purification/desalination, and advanced filtration and separation technologies.
Dimethyl Ether	<ul style="list-style-type: none"> CSIR-NCL is scaling up Dimethyl Ether (DME) technology for industrial use as a clean alternative fuel. Key Features: A synthetic diesel substitute with high cetane number, colorless gas, and clean combustion (low soot, NO_x, SO_x, particulates). Used as alternative fuel in diesel engines, and in chemical industry (aerosols, dyes,

	plastics); suitable for India's transport and agriculture sectors.
Cobalt	<ul style="list-style-type: none"> Concerns over environmental and health damage from cobalt mining, especially in the Democratic Republic of Congo, the world's largest producer. Cobalt (Co, atomic no. 27) is a hard, ferromagnetic metal, mostly obtained as a by-product of copper and nickel ores; major reserves in DRC, Russia, Canada. Critical for rechargeable batteries (EVs), superalloys, magnets, and defence/aerospace; also used as cobalt-blue pigment.
Alprazolam	<ul style="list-style-type: none"> The Directorate of Revenue Intelligence busted an illegal unit producing Alprazolam in Andhra Pradesh. Alprazolam is a psychotropic drug (NDPS Act, 1985) belonging to benzodiazepines, acting as a central nervous system depressant by enhancing gamma-aminobutyric acid activity. Uses & Concerns: Prescribed for anxiety and panic disorders, but misuse can lead to dependence and abuse, hence regulated under drug laws.
Acrylonitrile	<ul style="list-style-type: none"> Studies suggest acrylonitrile on Saturn's moon Titan may form cell-like structures, with implications for extraterrestrial life. Key Features: A colorless, volatile, toxic organic compound (from propylene + ammonia); flammable, water-soluble, and vapours heavier than air. Used in plastics, synthetic rubber, and acrylic fibers; harmful to health causing respiratory irritation, neurological effects, and severe toxicity.
Helium	<ul style="list-style-type: none"> Concerns over helium supply disruptions due to geopolitical tensions affecting industries like semiconductors and Printed Circuit Board manufacturing. Helium (atomic no. 2) is an inert, non-toxic gas with extremely low boiling point (-268.9°C); discovered during a solar eclipse and named after Helios (Sun). Critical for rocket fuel pressurization, cooling systems, electronics manufacturing, with major reserves in USA, Algeria, Russia; India has potential in Rajmahal Basin.
Porcelain	<ul style="list-style-type: none"> Shipwreck discovery of Chinese porcelain cargo. About: A high-quality ceramic made from kaolin, feldspar, quartz; originated in China (Tang-Yuan period). Properties: Strong, smooth, translucent, widely used in pottery and decorative items.
Carbon-14	<ul style="list-style-type: none"> Key discovery enabling dating of ancient artefacts. About: A radioactive isotope of carbon formed by cosmic rays acting on nitrogen. Used in radiocarbon dating (half-life ~5730 years) to determine age of organic materials.
Oleum	<ul style="list-style-type: none"> Oleum gas leak in Palghar (Maharashtra) led to large-scale evacuation. Definition: Fuming sulfuric acid—a mixture of sulfur trioxide (SO₃) and sulfuric acid (H₂SO₄); highly reactive and corrosive. Uses & Risk: Used in explosives, dyes, pharmaceuticals; toxic fumes + severe burns make it hazardous.
White Phosphorus	<ul style="list-style-type: none"> Concerns raised over alleged use of White Phosphorus in conflict zones. Key Features: A highly reactive, waxy substance that ignites spontaneously (~30°C) and burns intensely; used in military smokescreens, illumination, and incendiary weapons. Causes severe chemical burns, toxic fumes damage eyes and respiratory system; also used industrially in fertilizers and chemicals.

SPACE IN NEWS

Topics	Details
Akasha300 3D Printer	<ul style="list-style-type: none"> A Kerala start-up supplied the Akasha300 3D Printer to ISRO, marking progress in India's self-reliance in advanced manufacturing. Key Features: A high-temperature, multi-material 3D printer with dual extrusion (up to 350°C, upgradeable to 500°C), heated bed, enclosed chamber, and modular design for hybrid manufacturing. Enables precise prototyping and functional component development, boosting R&D capabilities in aerospace and high-performance material applications.
Minor Planet Centre	<ul style="list-style-type: none"> The Minor Planet Centre (MPC) recently announced the discovery of 15 new moons (4 of Jupiter, 11 of Saturn), highlighting its central role in planetary discoveries. Core Role: It is the global repository for observations of small solar system bodies, operating under the International Astronomical Union at the Smithsonian Astrophysical Observatory (USA); verifies discoveries and assigns official designations. Key Functions: Tracks asteroids, comets, and outer planet moons, monitors Near-Earth Objects (NEOs) for potential threats, and shares updates through scientific circulars.
Asteroid 2024 YR4	<ul style="list-style-type: none"> NASA ruled out any collision risk of asteroid 2024 YR4 with the Moon in 2032. Key Features: An Apollo-type asteroid (Earth-crossing orbit), stony in composition, likely originating from the main asteroid belt (Mars-Jupiter region). Discovery & Naming: Discovered in 2024 by ATLAS telescope (Chile); naming indicates late-December discovery ("Y") and its sequence (R4 = 117th object in that period).
Van Allen Probe A	<ul style="list-style-type: none"> NASA's Van Allen Probe A is re-entering Earth's atmosphere after mission completion, raising safety discussions. Part of the Van Allen Probes (A & B) mission (2012-2019) that studied Earth's radiation belts, helping understand space weather and particle dynamics. Provided key insights into how radiation belts protect Earth from solar wind and cosmic radiation, aiding satellite safety and space science.
Atacama Large Millimeter / submillimeter Array (ALMA) Telescope	<ul style="list-style-type: none"> New images of Milky Way centre captured. About: A radio telescope array (Chile, 2013) with 66 movable antennas. Studies cold universe (gas, dust, star formation); enabled discoveries like protoplanetary discs and Einstein rings.
Proba-3	<ul style="list-style-type: none"> The European Space Agency lost contact with one spacecraft of the Proba-3 Mission, affecting its operations. Core Objective: To demonstrate precision formation flying using two satellites to create an artificial solar eclipse, enabling detailed study of the Sun's corona. Key Features: Uses Occulter and Coronagraph satellites (~150 m apart); helps study coronal mass ejections (CMEs) and solar irradiance,

DART	<p>improving understanding of space weather and climate impacts.</p> <ul style="list-style-type: none"> • New findings show NASA's DART Mission altered not just an asteroid's motion but also slightly its orbit around the Sun. • Double Asteroid Redirection Test (DART), launched in 2021, was the first planetary defence mission to test asteroid deflection via kinetic impact. • Outcome & Significance: Successfully impacted Dimorphos (2022) in the Didymos system, proving humans can change an asteroid's trajectory, crucial for future Earth-impact prevention.
Surface Water and Ocean Topography (SWOT) Satellite	<ul style="list-style-type: none"> • Used to create a new high-resolution map of the ocean floor. • Objective: To measure changes in global water bodies—rivers, lakes, reservoirs, and oceans—with high precision. • Launched in 2022; joint mission of NASA & CNES (France). • Uses Ka-band Radar Interferometer (KaRIn) for high-resolution water elevation mapping. • Scans ~90% of Earth every 21 days; tracks floods, rivers, and ocean currents.

TECHNOLOGY IN NEWS

Topics	Details
Smog-eating Photocatalytic Coating	<ul style="list-style-type: none"> • The Delhi Government and IIT Madras are testing smog-eating photocatalytic coatings on roads to reduce urban air pollution. • Working & Material: Uses titanium dioxide (TiO₂), which under light triggers photocatalysis, breaking down pollutants like NO₂ and hydrocarbons into less harmful substances. • Significance: Offers a low-cost, scalable solution for air purification in cities, targeting photochemical smog caused mainly by vehicular emissions.
Floating LiDAR Buoy System	<ul style="list-style-type: none"> • Recently, the National Institute of Ocean Technology (NIOT) has successfully tested an indigenously developed Floating LiDAR Buoy System off the coast of Muttom in Tamil Nadu. • Working & Features: Uses LiDAR (laser pulses) on a floating buoy to measure wind speed, direction, and profiles up to ~300 m above sea level with high precision. • Enhances weather forecasting, cyclone tracking, offshore wind energy planning, and understanding of climate and ocean dynamics.
The Low Temperature Thermal Desalination	<ul style="list-style-type: none"> • The Low Temperature Thermal Desalination (LTTD) plant at Kavaratti (Lakshadweep) was reviewed for its role in freshwater supply. • Working Principle: Uses temperature difference in seawater—warm surface water is flash-evaporated under low pressure, and vapour is condensed using cold deep-sea water. • Significance: Eco-friendly (no chemical treatment), low maintenance, ideal for island regions; first plant commissioned in Kavaratti (2005).

DISEASES IN NEWS

Topics	Details
Legionnaires' disease	<ul style="list-style-type: none"> Rising cases of Legionnaires' disease in cities like London and New York raise concerns for urban public health risks globally. Cause & Transmission: A severe pneumonia caused by Legionella bacteria, spread through inhalation of contaminated water aerosols (not person-to-person). Symptoms & Risk: Causes fever, cough, breathlessness, GI and neurological symptoms; higher risk for elderly, smokers, and immunocompromised; treatable with antibiotics but no vaccine available.
Melanoma	<ul style="list-style-type: none"> A recent study found that cholesterol in nuclear membranes may aid the spread of melanoma, offering new insights into cancer progression. Melanoma is a skin cancer of melanocytes (melanin-producing cells), often linked to UV exposure; can also occur in internal body parts. Signs include changes in moles or new abnormal growths; treated through surgery, lymph node removal, and metastasectomy depending on stage.
Hutchinson-Gilford Progeria Syndrome	<ul style="list-style-type: none"> A new drug Progerinin is being developed for Hutchinson-Gilford Progeria Syndrome (HGPS), a rare disorder causing rapid ageing in children. Caused by a mutation in the LMNA gene, leading to production of abnormal protein progerin, which damages cell nuclei and accelerates ageing. Children appear normal at birth but develop premature ageing signs (hair loss, wrinkled skin, growth failure); fatal early (avg. ~14-15 years) mainly due to cardiovascular complications (atherosclerosis).
National Leprosy Eradication Programme	<ul style="list-style-type: none"> The government updated progress on the National Leprosy Eradication Programme (NLEP) under the National Health Mission. Objective: To achieve a leprosy-free India through early detection, free treatment, prevention of disability, and elimination of stigma. Key Features: Provides free diagnosis, treatment, and rehabilitation, supports states financially, uses Nikusth 2.0 for surveillance, and aligns with WHO goal of zero transmission, disability, and discrimination.
Herpes Simplex Virus	<ul style="list-style-type: none"> An outbreak of Herpes Simplex Virus (HSV) infection among inmates in West Bengal highlights public health concerns. A highly contagious viral infection causing painful blisters/ulcers; two types—HSV-1 (oral herpes) and HSV-2 (genital herpes); spreads via skin-to-skin contact and remains lifelong. Causes sores, fever, body aches; may rarely lead to meningitis/encephalitis; no cure, but antiviral drugs reduce severity and recurrence.
Cassava Brown Streak Disease	<ul style="list-style-type: none"> Cassava Brown Streak Disease is spreading rapidly, threatening cassava production across Africa. Cause & Spread: Caused by Cassava Brown Streak Virus (CBSV) and Ugandan Cassava Brown Streak Virus (UCBSV); mainly spread by whitefly (Bemisia tabaci). Impact & Control: Leads to root rot, yield loss, and poor quality tubers; managed through clean planting material and resistant varieties.
Cushing's Syndrome	<ul style="list-style-type: none"> New research highlights expanded treatment options for Cushing's Syndrome, improving management outcomes. A disorder caused by excess cortisol levels, often due to prolonged steroid use

	<p>or pituitary gland tumour (Cushing's disease).</p> <ul style="list-style-type: none"> Leads to weight gain, skin thinning, hypertension, diabetes, mood changes; treated by reducing steroids or surgical removal of tumour.
Syphilis	<ul style="list-style-type: none"> The World Health Organization certified Denmark for eliminating mother-to-child transmission of HIV and syphilis. Syphilis is a bacterial sexually transmitted infection (caused by <i>Treponema pallidum</i>), spread via sexual contact or from mother to child. Progresses in stages (painless sores → systemic damage); can harm heart, brain, organs if untreated; curable with antibiotics (Penicillin).
HMPV	<ul style="list-style-type: none"> Human Metapneumovirus (HMPV) cases are rising, raising concerns due to its high contagiousness A respiratory virus (Pneumoviridae family) similar to Respiratory Syncytial Virus; spreads via airborne droplets, contact, and contaminated surfaces. Symptoms & Treatment: Causes cough, fever, congestion, breathlessness; may lead to bronchitis/pneumonia; no vaccine or specific antiviral, treatment is symptomatic.
Shigellosis	<ul style="list-style-type: none"> An outbreak of shigellosis reported in Kerala. A highly contagious bacterial infection caused by <i>Shigella</i>; a major cause of acute diarrhoea, especially in children under five. Spread via faecal-oral route, contaminated food/water, or close contact. Symptoms include bloody diarrhoea, abdominal cramps, fever, vomiting. Usually self-limiting, but antibiotics used in severe cases.

6.5 SCHEMES IN NEWS

BharatNet Project

Context

- Under the BharatNet Project, India has expanded broadband connectivity to over 2.15 lakh Gram Panchayats, boosting digital infrastructure.

Details

- Objective: To provide high-speed broadband access to all Gram Panchayats, enabling services like e-health, e-education, and e-governance through telecom providers.
- Key Features: Implemented by Bharat Broadband Network Limited (BBNL), funded via Digital Bharat Nidhi (DBN) (earlier Universal Service Obligation Fund), and executed in three phases integrating optical fibre, satellite, and 5G technologies.

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7. CULTURE & HISTORY

7.1 SHORT ARTICLES

Jnanpith Award 2025

Context:

- R. Vairamuthu has been selected for the Jnanpith Award 2025, India's highest literary honour.

Details

- **About Award:** Instituted in 1961 by Bharatiya Jnanpith; carries ₹11 lakh, a Vagdevi (Saraswati) statuette, and citation; awarded for outstanding literary contribution in Indian languages (including English).
- **Key Facts:** First awarded in 1965 to G. Sankara Kurup; given to living Indian authors, with restrictions like no repeat award and language gap of 2 years.

Sahitya Akademi

Context:

- The Sahitya Akademi announced its annual awards for works in **24 recognised languages**.

Details

- **About Award:** Given for outstanding literary works; includes a plaque, shawl, and ₹1 lakh prize; covers 22 constitutional languages + English & Rajasthani.
- **About Akademi:** Established in 1954, an autonomous body under the Ministry of Culture, promoting literature and literary dialogue in India.

Petroglyphs

Context:

- New petroglyphs were discovered in Telangana, highlighting India's prehistoric rock art heritage.

Details

- Petroglyphs are rock engravings made by carving/pecking/scratching surfaces (unlike painted petrographs); derived from Greek petros (stone) + glyphein (to carve).
- **Significance:** Among the earliest forms of art and communication, used for symbols, maps,

boundaries, and rituals; example in India: Edakkal Caves (Kerala).

Kurumba painting

Context:

- Kurumba painting, a traditional tribal art of the Nilgiris, is facing the threat of extinction.

Details

- **Key Features:** A ~3000-year-old art form of the Kurumba tribe (TN, Kerala, Karnataka), using natural pigments (leaves, soil, tree resin) with simple geometric and nature-based motifs.

Gajapatis

Context:

- A Telugu inscription of Gajapati rulers was discovered in Andhra Pradesh, highlighting their historical reach beyond Odisha.

Details

- **About Empire:** The Gajapati Empire (c. 1434–1541), founded by Kapilendra Deva, succeeded the Eastern Gangas; at its peak stretched from Ganga (north) to Kaveri (south).
- Known for patronage of art, architecture (Konark Sun Temple), and Odia culture; declined due to conflicts with Vijayanagara and regional powers, later absorbed by Mughals.

El Ashmunein

Context:

- Recent excavations at El Ashmunein (Egypt) revealed a limestone fragment completing a statue of Pharaoh Ramesses II.

Details

- Known as Hermopolis Magna, located on the west bank of the Nile; an important religious, cultural, and administrative centre across ancient periods.

- Dedicated to Thoth (god of wisdom); excavations show multi-era heritage with remains like houses, cemeteries, altars, and inscriptions of rulers such as Akhenaten and Nectanebo II.

Yadava (Seuna) Dynasty

Context:

- Discovery of a 12th-century pillar in Maharashtra.

Details

- About: Ruled 12th–14th century Deccan; capital at Devagiri (Daulatabad); peak under Singhana.
- Significance: Promoted Marathi culture; known for Hemadpanti architecture; annexed by Delhi Sultanate (1317).

Golestan Palace

Context:

- Reports indicate structural damage to Golestan Palace amid recent tensions affecting Tehran.

Details

- A 16th-century royal complex, originally a Safavid citadel, later expanded under the Qajar dynasty (made Tehran the capital in 1779) and continued into the Pahlavi era.
- Known as the “Rose Garden Palace”, it combines Persian and European architectural styles, with gardens and ornate halls; designated a UNESCO World Heritage Site.

7.2 SNIPPETS

TEMPLES IN NEWS

Topics	Details
Prambanan Temple	<ul style="list-style-type: none"> • India and Indonesia are collaborating on the restoration of Prambanan Temple in Yogyakarta. • Key Features: The largest Hindu temple complex in Indonesia (9th century, Sanjaya dynasty), dedicated to the Trimurti—Shiva, Vishnu, and Brahma; locally called Roro Jonggrang. • A UNESCO World Heritage Site (1991), reflecting India’s cultural influence in Southeast Asia and shared heritage conservation efforts.
Kamakhya Temple	<ul style="list-style-type: none"> • The Amrut Bharat Express will improve connectivity to Kamakhya Temple (Guwahati, Assam), aiding pilgrimage. • Located on Nilachal Hill, dedicated to Goddess Sati, it is one of the 51 Shakti Peethas and a major centre of Tantric worship; famous for Ambubachi Mela. • Rebuilt in 1565 (Koch dynasty); features unique Nilachala architecture (blend of Nagara & Mughal styles) with a beehive-shaped structure and five chambers.

PERSONALITIES IN NEWS

Topics	Details
Guru Angad Dev	<ul style="list-style-type: none"> • The Union Home Minister paid tributes to Guru Angad Dev Ji on his Jyoti-Jyot Diwas, remembering his role as the second Sikh Guru (1539–1552). • Standardized the Gurmukhi script, promoted Punjabi literacy, spread teachings of Guru Nanak Dev, and strengthened institutions like Langar and Sangat. • Emphasized education, discipline, and physical fitness, composed hymns, and appointed Guru Amar Das as his successor, consolidating the Sikh community.

FESTIVALS IN NEWS

Topics	Details
Sarhul Festival	<ul style="list-style-type: none"> The President extended greetings on Sarhul Festival, a major Adivasi nature festival marking the renewal of life and agricultural cycle. Celebrates the worship of the Sal tree and the symbolic union of Sun and Earth, central to tribal belief systems in Jharkhand and nearby states. Includes Sarna (sacred grove) rituals, role of pahan-pahen, and a 3-day celebration ending with community feasts; agricultural activities begin only after the festival.
Navroz	<ul style="list-style-type: none"> The Prime Minister greeted people on Navroz (Parsi New Year), marking the arrival of spring and a new beginning. Derived from Persian ('Nav' = new, 'Roz' = day); rooted in the ancient Persian/Zoroastrian tradition, linked to King Jamshed and the Shahenshahi calendar. Celebrated by the Parsi community worldwide, recognised as UNESCO Intangible Cultural Heritage.
Chapchar Kut	<ul style="list-style-type: none"> Chapchar Kut, Mizoram's largest spring festival, recently concluded, celebrating the end of jhum (shifting cultivation) clearing. Marks a period of relaxation and community celebration after arduous agricultural work; rooted in Mizo traditions since 15th-17th century. Includes traditional attire, music, and dances, especially the Cheraw (bamboo dance), symbolising harmony with nature.

INDIAN ARCHITECTURE IN NEWS

Topics	Details
Kalinjar Fort	<ul style="list-style-type: none"> The hill region around Kalinjar Fort (Uttar Pradesh) has been declared a National Geo-Heritage Site. Situated in Banda district on a hill in the Vindhya range near the Ken River; an ancient fort with temples, stepwells, palaces, and the famous Neelkanth Temple. History: Originates from the Gupta period, flourished under the Chandelas, later captured by Akbar (1569); witnessed multiple invasions due to its strategic importance.
Raisen Fort	<ul style="list-style-type: none"> Raisen Fort (Madhya Pradesh) came into news after a video showing cannon firing at the ASI-protected site surfaced. Built in the 11th century, it witnessed rule of Hindu chiefs, Mandu Sultans, Mughals (Akbar), and Bhopal Nawabs. Key Features: A large hilltop fort with nine gateways, palaces (Badal Mahal, Hawa Mahal etc.), temples and dargah, showcasing mixed Hindu-Islamic heritage and advanced water systems.
Sinhagad Fort	<ul style="list-style-type: none"> A bee attack at Sinhagad Fort (near Pune) injured visitors, drawing attention to the historic site. An ancient fort (earlier Kondhana), associated with Shivaji Maharaj; famous for the Battle of Sinhagad (1670) led by Tanaji Malusare against the Mughals. Known for strategic hilltop location, Pune & Kalyan Darwazas, strong fortifications, and advanced water storage systems.

8. GEOGRAPHY AND DISASTER MANAGEMENT

8.1 AVALANCHES

Context

- An avalanche struck the high-altitude Zojila Pass on the Srinagar–Leh National Highway (NH-1), claiming seven lives and injuring five others.

About Avalanches

- Avalanches are rapid, downward movements of large masses of snow, ice, and debris on mountain slopes, occurring when the shear stress of the snowpack exceeds its shear strength.

Vulnerability in the Indian Himalayan Region (IHR)

The Himalayas are particularly prone due to their fragile geology and high-altitude terrain:

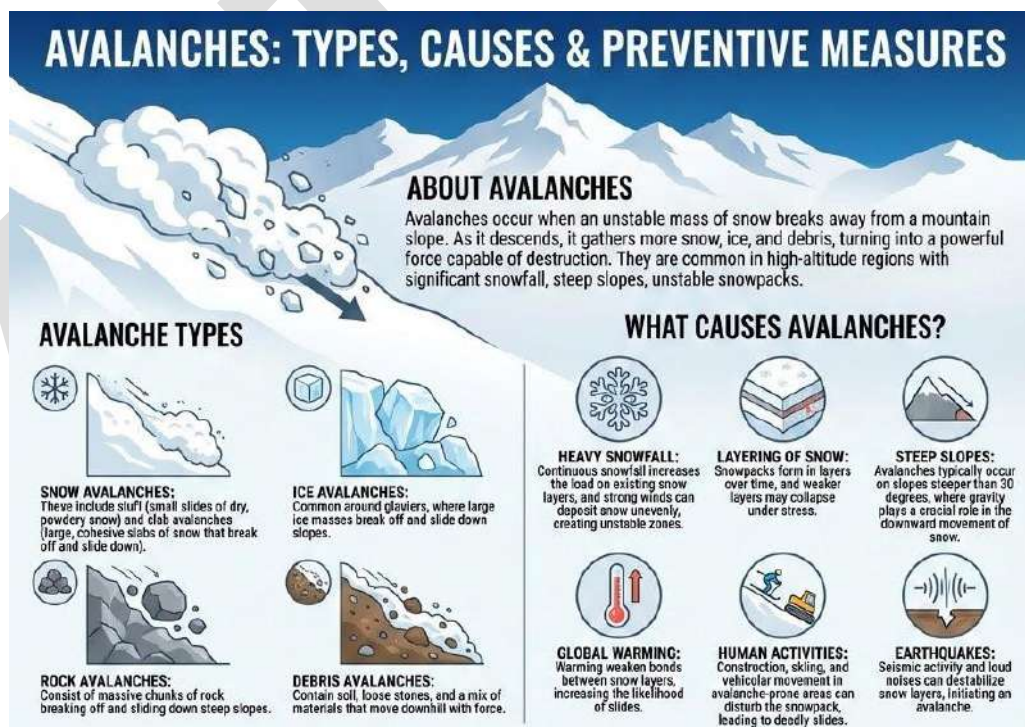
- High-Risk Zones:** Predominantly the **Western Himalayas**, including Jammu & Kashmir, Ladakh, Himachal Pradesh, and Uttarakhand.
- Climate Change Impact:** Winter temperatures in the northwestern Himalayas rose by an average of **0.65°C** between 1991 and 2016,

leading to more frequent wet snow avalanches.


- Strategic Risk:** Avalanches frequently disrupt military operations and border security, blocking vital routes like the **Manali–Leh highway** for months.

Mitigation


- Nodal Agency:** The **Defence Geoinformatics Research Establishment (DGRE)**, under DRDO, is the primary body for avalanche forecasting and mitigation in India.
- NDMA Guidelines:** Focus on hazard mapping, early warning systems (EWS), and "Aapada Mitra" community volunteer training.
- Structural Measures:** Includes snow fences, diversion dams, earthen mounds, and reforestation to stabilize slopes.
- Technology:** Recent advancements include the use of **AI-based prediction models** and **UAV-based snow depth mapping** for high-resolution risk assessment.




HOW CAN AVALANCHES BE PREVENTED OR CONTROLLED?




AVALANCHE DETECTION AND MONITORING:
Scientists analyze snowpack stability, wind patterns, and temperature variations to assess avalanche risks.




STRUCTURAL BARRIERS:
Diversion wells, fences, and rakes help redirect or slow down snow masses.




CONTROLLED EXPLOSIONS:
In ski resorts and high-risk zones, authorities use controlled explosions to trigger small avalanches before they become dangerous.



REFORESTATION AND VEGETATIVE BARRIERS:
Trees and vegetation help stabilize slopes and reduce the chances of snow slides.









EARLY WARNING SYSTEMS:
Using advanced sensors and beacons, authorities can warn residents and workers in avalanche-prone areas.







EMERGENCY RESPONSE PLANNING:
Training personnel and equipping them with rescue tools, including avalanche beacons and probes, enhance survival chances during disasters.

NDMA GUIDELINES FOR AVALANCHE MANAGEMENT

-  **RISK ZONATION:** Identify avalanche-prone areas & map hazard zones using satellite and ground surveys.
-  **EARLY WARNING SYSTEMS:** Deploy snow and weather monitoring stations to predict avalanche risk.
-  **INFRASTRUCTURE PLANNING:** Avoid human settlements and critical infrastructure in high-risk zones; implement slope stabilization measures.
-  **COMMUNITY PREPAREDNESS:** Conduct awareness programs and training for local communities and defense forces stationed in avalanche-prone regions.
-  **RESCUE PROTOCOLS:** Establish rapid response teams with specialized equipment for rescue and relief operations.
-  **RESEARCH & MONITORING:** Promote studies on snowpack stability, climate change impact, and avalanche dynamics.

WAY FORWARD

-  **FORECASTING TECHNOLOGY:** Use IoT, drones, and AI for accurate avalanche prediction.
-  **RESILIENT INFRASTRUCTURE:** Design avalanche-resistant roads and settlements for climate adaptation.
-  **COMMUNITY PREPAREDNESS:** Engage locals in monitoring, drills, and early response strategies.
-  **AGENCY COORDINATION:** Strengthen NDMA, BRO, and state collaboration for effective relief.

As NDMA notes, "preparedness is the best form of mitigation", strengthening forecasting, resilience, and community response is key to safeguarding the Himalayas.

8.2 SHORT ARTICLES

Bab El-Mandab Strait

Context

- The Bab el-Mandab Strait, often called the "Gate of Tears," has emerged as a primary geopolitical flashpoint due to its strategic location and the escalation of regional conflicts.

About Bab el-Mandab Strait

- Location & Connectivity:** Maritime corridor separating the Arabian Peninsula (Yemen) from the Horn of Africa (Djibouti and Eritrea). It serves as the southern entrance to the Red Sea, connecting it to the Gulf of Aden and the Indian Ocean.
- Physical Constraints:** At its narrowest point, the strait is only 29 km wide. It is divided into two channels by Perim Island (Mayun Island), with the western channel being the primary route for deep-draft commercial vessels.
- Global Trade Volume:** Approximately 12% of total global seaborne trade passes through this chokepoint.
- Security Risks:** Vulnerable to land-based ballistic missiles and drone attacks from the Houthi-controlled areas of Yemen.
- The "Suez-SUMED" Link:** The strait is the southern gate to the Suez Canal and the SUMED pipeline in Egypt.



Baltic Sea

Context

- The Baltic Sea is currently the focus of a major multinational expedition, Alkor, tasked with mapping

nearly **1.6 million tonnes** of corroding World War II munitions

About Baltic Sea

- **Location:** A semi-enclosed, inland sea in Northern Europe, bordered by nine countries: **Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, and Sweden.**
- **Connectivity:** It connects to the Atlantic Ocean via the **North Sea** through the narrow straits of Kattegat and Skagerrak.
- **Brackish Nature:** It is one of the world's largest bodies of **brackish water**, formed by the mixing of saltwater from the North Sea and freshwater from over 200 inflowing rivers.
- **Depth and Circulation:** It is relatively shallow, with an average depth of **55 metres**. Due to its narrow opening, water renewal is extremely slow, taking approximately **30 years** for a complete exchange.
- **Biodiversity Sensitivity:** Due to low salinity and young geological age, the sea has low species diversity, making its ecosystem highly vulnerable to pollutants and invasive species.



8.3 SNIPPETS

Topics	Details
Khondab Heavy Water Complex and the Ardakan yellowcake plant	<ul style="list-style-type: none"> • Israel strikes on Khondab and Ardakan are designed to dismantle the dual-track (Uranium and Plutonium) capability of the Iranian nuclear programme. • Khondab Heavy Water Complex situated near Arak in Central Iran. The facility produces heavy water, a moderator required for reactors fueled by natural uranium. Such reactors are capable of producing plutonium-239 as a byproduct, which can be utilized for nuclear weapons. Ardakan Yellowcake Production Plant located in the Yazd Province, is Iran's primary facility for converting uranium ore into Yellowcake (U3O8); essential raw material for uranium hexafluoride (UF6) gas used in enrichment centrifuges
Zojila Pass	<ul style="list-style-type: none"> • Avalanche at the Zojila Pass has resulted in the loss of five lives. • Zojila Pass is situated at an elevation of approximately 3,528 metres. It is the only terrestrial link connecting the Kashmir Valley (Sonamarg) to the high-altitude cold desert of Ladakh (Dras and Leh). Primary supply route for Indian troops stationed at the Siachen Glacier and along the Line of Actual Control (LAC). To mitigate the 6-month seasonal closure and avalanche risks, the 14.15 km long Zoji-la Tunnel is currently under construction. Once completed, it will be Asia's longest bidirectional tunnel, reducing travel time from 3 hours to just 15 minutes.
Padma River	<ul style="list-style-type: none"> • A tragic bus accident at the Dauladia ferry terminal has resulted in at least 16 deaths after a vehicle plunged into the Padma River. • The Padma is the main distributary of the Ganges (Ganga) in Bangladesh. It

	<p>flows southeast until its confluence with the Meghna River. The river enters Bangladesh from India near Chapai Nawabganj. It is formed where the Ganges bifurcates at the Farakka Barrage in Murshidabad, West Bengal. At Chandpur, the Padma joins the Meghna River to form the massive Meghna Estuary before emptying into the Bay of Bengal.</p>
Diego Garcia Island	<ul style="list-style-type: none"> • The U.K. condemned an Iranian ballistic missile attack aimed at the U.K.-U.S. military base on Diego Garcia. • Diego Garcia is the largest island in the Chagos Archipelago, located in the central Indian Ocean. Originally uninhabited, it was settled by the French in the 1790s, ceded to Britain in 1814 under the Treaty of Paris. Prior to granting independence to Mauritius in 1968, the UK "detached" the Chagos Archipelago to create the British Indian Ocean Territory (BIOT). In 2019, the International Court of Justice ordered the return of the Chagos Islands. In 2025, the UK and Mauritius signed a treaty transferring sovereignty to Mauritius.
Port of Fujairah	<ul style="list-style-type: none"> • Recent missile/drone attacks on Fujairah port have disrupted oil loading and gas operations. • The Port of Fujairah is the only multipurpose deep-sea port on the eastern seaboard of the United Arab Emirates (UAE), located in the Emirate of Fujairah on the Gulf of Oman. It is the world's second-largest bunkering hub (ship refuelling) after Singapore and ranks among the top three oil storage centres globally. The port features a massive storage capacity of 18 million cubic metres, hosting the Middle East's largest commercial storage for refined products.
Silverpit Crater	<ul style="list-style-type: none"> • Scientists discovered that Silverpit crater, located in the North Sea, was formed during the Eocene epoch by a high-velocity asteroid approximately 160 metres wide • The Silverpit crater is a buried sub-sea structure located approximately 130 km off the coast of Yorkshire in the North Sea. The central crater is approximately 3.2 km wide, surrounded by a massive system of concentric ring faults spanning roughly 20 km in diameter. It formed during the middle Eocene, roughly 43 to 46 million years ago.
Bosphorus Strait	<ul style="list-style-type: none"> • A Russian oil tanker was hit by a sea drone near the Bosphorus Strait. • Bosphorus Strait located in northwestern Turkey, it divides the city of Istanbul between two continents: Europe (Thrace) and Asia (Anatolia). It connects the Black Sea (North) to the Sea of Marmara (South). From the Sea of Marmara, ships pass through the Dardanelles Strait to reach the Aegean Sea and finally the Mediterranean. For Black Sea nations (Russia, Ukraine, Georgia, Romania, Bulgaria), the Bosphorus is the <i>only</i> maritime exit to the world oceans. Under the 1936 Montreux Convention, Turkey has sovereignty over the strait.
MINAMITORISHIMA ISLAND	<ul style="list-style-type: none"> • Japan has successfully extracted rare earth-rich mud from the deep seabed near Minami-Torishima Island. • Minami-Torishima (also known as Marcus Island) is a remote, triangular coral atoll in the northwestern Pacific Ocean. It is the easternmost point of Japanese territory.
STRAIT OF HORMUZ	<ul style="list-style-type: none"> • The joint attack by the US and Israel on Iran has disrupted the logistics supply chain in the Strait of Hormuz.

- **Strait of Hormuz** links the **Persian Gulf** (west) with the **Gulf of Oman** and the **Arabian Sea** (southeast). It is bordered by **Iran** to the north and **Oman** (Musandam exclave) and the **United Arab Emirates (UAE)** to the south. The strait handles about **20-21% of the world's oil supply** (17–20 million barrels daily) and **20-30% of global seaborne LNG shipments**, including almost all Qatari exports. The strait is **only 21–22 nautical miles wide at its narrowest**, with shipping lanes just 2 miles wide each way. This narrowness makes it highly vulnerable to disruption from military action, blockades, or piracy.

8.4 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
Avalanches	30 th March
Extreme Heat Limits Daily Activity In India	14 th March

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9. GOVERNMENT SCHEMES

9.1 SHORT ARTICLES

Regional Connectivity Scheme – Modified UDAN

Context

- The Union Cabinet approved the Regional Connectivity Scheme – Modified UDAN with an outlay of Rs 28,840 crore for 2026–2036.

About Modified UDAN

- It is the second phase of the 2016 UDAN scheme, designed to shift focus from mere connectivity to **long-term operational sustainability** and infrastructure modernization.
- Infrastructure Expansion (CAPEX):** An allocation of **₹12,159 crore** to transform 100 existing unserved airstrips into functional regional airports over the next eight years.
- The Helipad Network:** A dedicated investment to build **200 modern helipads** (at ₹15 crore each) specifically for the "Last Mile Connectivity" in hilly regions, North-East India, and island territories.
- Enhanced Viability Gap Funding (VGF):** A fund of **₹10,043 crore** to provide financial "top-ups" to airline operators, ensuring that regional routes remain economically viable even with capped low fares.
- Operational & Maintenance (O&M) Support:** Provides a safety net for around 441 aerodromes with O&M support capped at **₹3.06 crore per year** for the first three years of operation.
- Atmanirbhar Aviation:** Prioritizes the procurement of indigenous aircraft like the HAL Dornier-228 and HAL Dhruv helicopters for state-run carriers like Alliance Air and Pawan Hans.

Bharat Audyogik Vikas Yojna (BHAVYA)

Context

- The Union Cabinet approved the **Bharat Audyogik Vikas Yojna (BHAVYA)**.

What is BHAVYA?

- The **Bharat Audyogik Vikas Yojna (BHAVYA)** is an industrial development scheme designed to provide a comprehensive "plug-and-play" ecosystem for global and domestic manufacturers.
- It serves as an umbrella framework to bridge the infrastructure gaps in India's existing industrial corridors.
- Financial Outlay:** ₹25,000 crore for the period 2026–2031.
- Vision:** To align with the "Make in India 2.0" and "Viksit Bharat 2047" goals, ensuring India becomes a global manufacturing hub.

Key Pillars of the Scheme

- Integrated Industrial Smart Cities:** BHAVYA focuses on developing **12 new Industrial Smart Cities** across the country. These cities will be equipped with multi-modal connectivity (Rail, Road, and Port) and high-speed digital infrastructure.
- Plug-and-Play Infrastructure:** To reduce the "Time to Market" for investors, the **scheme provides pre-cleared land, ready-to-use factory sheds**, and assured utility connections (power, water, and waste management).
- Sustainable & Green Manufacturing:** A significant portion of the fund is dedicated to **Common Effluent Treatment Plants (CETPs)** and green energy integration, ensuring that the new industrial zones comply with global Environmental, Social, and Governance (ESG) standards.
- Logistics Synergy:** BHAVYA projects are integrated with the **PM Gati Shakti National Master Plan**, ensuring that industrial clusters are located near major logistics nodes to minimize transportation costs.

Small Hydro Power (SHP) Development Scheme

Context

- The Union Cabinet has approved the **Small Hydro Power (SHP) Development Scheme** for the period FY 2026-27 to FY 2030-31.

What is the SHP Development Scheme?

- It is a centrally sponsored initiative managed by the **Ministry of New and Renewable Energy (MNRE)** that provides financial assistance for installing 1–25 MW projects in remote and border areas.
- Budgetary Outlay:** A total of **₹2,584.60 crore** has been allocated, which is expected to catalyze a private and institutional investment of approximately **₹15,000 crore**.
- Differential Central Financial Assistance (CFA):**
 - NE & Border States:** Higher incentive of **₹3.6 crore/MW** (capped at ₹30 crore per project) to offset high construction costs in difficult terrains.
 - Other States:** Support of **₹2.4 crore/MW** (capped at ₹20 crore per project).

- Project Pipeline:** The scheme earmarks **₹30 crore** to assist state and central agencies in preparing **Detailed Project Reports (DPRs)** for 200 future potential sites.
- Indigenous Mandate:** To align with **Atmanirbhar Bharat**, 100% of the plant and machinery used in these projects must be sourced from domestic manufacturers.

Strategic Significance

- Ecological Advantage:** Unlike "Large Hydro" (>25 MW), Small Hydro Projects are generally "Run-of-the-River" types. They do not require large dams, thus avoiding massive deforestation, large-scale land acquisition, or the displacement of local communities.
- Decentralized Power:** By promoting **distributed generation**, the scheme reduces the "Aggregate Technical and Commercial (AT&C) losses" associated with long-distance transmission.
- Grid Stability:** Small hydro provides a stable "base-load" compared to the intermittent nature of solar and wind, helping in regional grid balancing.

9.2 SNIPPETS

Topics	Details
MLATrack.com	<ul style="list-style-type: none"> Kerala launched MLATrack.com to track the legislative interventions of Members of the Legislative Assembly (MLAs). MLATrack.com is a comprehensive public digital database that aggregates and visualizes the performance and legislative activities of all MLAs. It promotes transparency and accountability by providing citizens, researchers, and the media with objective data to evaluate their elected representatives.
PRISM-SG Portal	<ul style="list-style-type: none"> The Union Government launched the PRISM-SG portal to digitize the approval and inspection processes for Steel Girders in Road Over Bridges (ROBs). The PRISM-SG (Portal for Rail-Road Inspection & Stages Management – Steel Girders), launched by the Union Minister for Road Transport and Highways, and Union Minister for Railways, is a digital platform to streamline technical approvals and inspections for steel girders used in bridges where highways and railways intersect.
Gruh Sugam Portal	<ul style="list-style-type: none"> The Gruh Sugam Portal launched by the National Housing Bank (NHB) to simplify home ownership. Gruh Sugam Portal is a dedicated digital bridge that acts as a marketplace, connecting Defense, Paramilitary, and Government personnel with multiple

	<p>lending institutions for home loans.</p>
Reform Express Initiative	<ul style="list-style-type: none"> The Reform Express is a comprehensive policy initiative launched by the Ministry of Railways. The Reform Express Initiative modernizes Indian Railways through technology, including Aadhaar-based ticketing to eliminate fraud and specialized wagons for efficient freight transport. The strategy, supported by strict infrastructure bidding rules, aims to lower national logistics costs to 8% of GDP and improve passenger services.
PRARAMBH 2026	<ul style="list-style-type: none"> The Union Finance Minister launched 'PRARAMBH 2026', a nationwide awareness campaign. PRARAMBH 2026 (Policy Reform and Responsible Action for Mission Viksit Bharat) is a nationwide awareness campaign to educate citizens and stakeholders about the provisions of the Income Tax Act, 2025, which officially replaces the 1961 Act starting April 1, 2026.
Krishi Sakhi Initiative	<ul style="list-style-type: none"> The Agriculture Insurance Company of India Limited (AIC), under the administrative control of the Ministry of Finance, launched the Krishi Sakhi Initiative. The initiative aims to enhance the participation of women in Crop Insurance schemes to mitigate climate-related risks. A year-long campaign involving digital media, walkathons, and village-level workshops to ensure sustained engagement. The program also addresses non-agricultural barriers like sanitation and hygiene
Sujal Gaon ID	<ul style="list-style-type: none"> To ensure the sustainability of the "Har Ghar Jal" revolution, the Union Ministry of Jal Shakti has launched the Sujal Gaon ID. Sujal Gaon ID is a scheme-based unique digital identifier. Unlike a generic location tag, this ID is assigned to a specific Rural Piped Drinking Water Supply Scheme, acting as the "Aadhaar" for water infrastructure. It enables the digital mapping of both the physical assets (pumps, pipes, tanks) and the service areas (villages/habitations covered) into a unified national database.
Dumpsite Remediation Accelerator Programme (DRAP)	<ul style="list-style-type: none"> The Union Government launched the Dumpsite Remediation Accelerator Programme (DRAP) to fast-track the clearance of legacy waste dumpsites across urban India. DRAP is a core component of Swachh Bharat Mission – Urban 2.0 (SBM-U 2.0), which aims to achieve "Lakshya Zero Dumpsites" by September 2026. The program prioritizes 214 major dumpsites across 202 urban local bodies, addressing approximately 80% of India's legacy waste. The Central Government provides ₹550 per tonne for legacy waste remediation to support urban local bodies in this year-long acceleration. It utilizes a 5P Framework (Political leadership, Public financing, Partnerships, People's participation, and Project management) to ensure multi-stakeholder accountability.
Jal Jeevan Mission (JJM)	<ul style="list-style-type: none"> The Union Cabinet extended the deadline of the Jal Jeevan Mission (JJM) to December 2028. The scheme aims to provide 55 litres of water per person per day to every rural household through Functional Household Tap Connections (FHTC). Transparency is being enhanced by assigning a unique Sujal Gaon ID to every village, digitally mapping the entire supply chain from the water source to the individual tap. The mission integrates Greywater Management (using soak pits and kitchen gardens) and water source strengthening through convergence with

Ningol Van Initiative	<p>MGNREGS and 15th Finance Commission grants.</p> <ul style="list-style-type: none"> The State Government of Manipur launched the "Ningol Van Initiative". The Ningol Van Initiative is a women-led environmental campaign launched by the Manipur Forest Department in March 2026 to combat deforestation and illicit cultivation, specifically by replacing illegal poppy fields with sustainable crops like Bamboo. It empowers women as "Guardians of the Green" by integrating them into forest protection, management, and sustainable livelihoods through Van Dhan Vikas Kendras.
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9.3 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
NITI Aayog Report on Ayushman Bharat	21 st March
Svmitva Scheme: Digitizing Rural Land Records	19 th March
Namaste Scheme: Mechanizing Sanitation For Dignity	18 th March
Pradhan Mantri Bhartiya Janaushadhi Pariyojana	9 th March
Biopharma Shakti Mission Explained	5 th March
Rice Fortification Scheme Suspended	2 nd March



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