



**APRIL
2025**

ANURAG BACHAN'S DROANACHARYA-IAS

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POLITY AND GOVERNANCE

Challenges Faced by Women Panchayat Members in India**Context**

Recently, a panel from the Ministry of Panchayati Raj highlighted the persistent challenge of male relatives controlling decision-making on behalf of elected women representatives (EWRs) in Panchayati Raj Institutions (PRIs).

Women in Panchayati Raj Institutions

The 73rd Constitutional Amendment Act, 1992, introduced reservation for women in Panchayati Raj, marking a significant step toward gender equality. It mandated that at least one-third of PRI seats be reserved for women, which several states later increased to 50%. Today, over 1.45 million women serve as elected representatives across India's PRIs.

Major Challenges

- **Patriarchal Mindset and Sarpanch Pati Syndrome:** A deep-rooted patriarchal mindset continues to limit women's authority in Panchayats. The 'Sarpanch Pati Syndrome,' where male relatives (particularly husbands) act as proxies, reduces women to symbolic leaders. This phenomenon is particularly noticeable in Rajasthan, Madhya Pradesh, and Bihar.
- **Lack of Political Training and Awareness:** Many elected women lack adequate knowledge about governance structures, policies, and financial management. This often makes them dependent on male counterparts or bureaucrats, limiting their active role in decision-making processes.
- **Resistance from Bureaucracy and Male Counterparts:** Bureaucratic indifference and skepticism about women's leadership capabilities lead to delays in resource allocation and scheme implementation. Such biases undermine women's authority, hampering effective governance.
- **Economic Dependence and Limited Financial Autonomy:** Economic dependence on male family members restricts women's independent functioning in Panchayats. Limited access to financial resources and credit further weakens their capacity to make autonomous decisions.
- **Gender-Based Violence and Threats:** Women leaders, especially from rural areas, frequently encounter intimidation, harassment, and even physical violence from dominant caste groups or rival political factions. Such threats discourage active political participation, and in extreme cases, women leaders are compelled to resign.
- **Dual Burden of Political and Household Responsibilities:** Women representatives often juggle household duties alongside political responsibilities. This dual burden limits their time, attention, and energy for effective governance and community engagement.
- **Social and Caste-Based Discrimination:** Intersectional discrimination significantly impacts women from marginalized communities such as Dalits, Adivasis, and Other Backward Classes (OBCs). States like Uttar Pradesh, Bihar, and Haryana witness pronounced cases of such discrimination.

Benefits of Strengthening EWR Decision-Making

- **Enhanced Governance and Effective Policy Implementation:** Empowered women leaders, such as those in Kerala's Kudumbashree initiative, have demonstrated effective implementation of social welfare schemes.

- **Gender-Sensitive Policies:** Women-led Panchayats in Nagaland have successfully prioritized maternal health and reduced gender-based violence.
- **Economic Empowerment:** Elected women in Bihar have effectively managed micro-loan schemes, fostering rural entrepreneurship.
- **Reduced Proxy Leadership:** Training initiatives in Rajasthan have helped significantly reduce the incidence of the 'Sarpanch Pati Syndrome.'

Government Initiatives to Support Women in Panchayats

- **National Rural Livelihood Mission (NRLM):** Promotes leadership and economic independence through Self-Help Groups (SHGs).
- **Mahila Sabhas:** Women-specific meetings held before general Gram Sabhas, ensuring women's priorities are highlighted.
- **Panchayat Mahila Evam Yuva Shakti Abhiyan (PMEYSA):** Focuses on building leadership and governance skills among women Panchayat leaders.
- **Mission Shakti (2022):** Incorporates programs such as Sambal for women's safety and Samarthya for economic empowerment, indirectly strengthening women's roles in local governance.
- **Women's Leadership Development Programs:** Conducted by the Ministry of Panchayati Raj and NGOs to improve leadership skills and decision-making capacities.

Way Forward for Enhancing Women's Participation

- **Capacity Building and Leadership Training:** Expand schemes like Rashtriya Gram Swaraj Abhiyan to cover all EWRs, providing comprehensive training in governance.
- **Strict Enforcement against Proxy Representation:** State governments should rigorously implement laws against male proxy control, coupled with awareness campaigns for women's rights.
- **Financial Empowerment:** Direct access to Panchayat funds and easier availability of microfinance schemes will strengthen women's economic autonomy.
- **Reservation in Higher Political Offices:** Extend reservation quotas to state legislative assemblies and Parliament. The Nari Shakti Vandan Adhiniyam, 2023, aims to reserve one-third of seats in legislative bodies after delimitation and census.
- **Strengthening Support Networks:** Expand initiatives such as the National Federation of Elected Women Representatives (NFEWR) across all states to support women leaders.
- **Ensuring Safety and Security:** Strict actions and fast-track courts should be introduced to handle harassment or violence against women Panchayat leaders effectively.

Conclusion

Although reservation has substantially increased women's political representation, persistent social and structural challenges continue to limit their effectiveness. A comprehensive approach—combining education, legal reforms, financial empowerment, and community support—is essential. By empowering elected women representatives fully, India can achieve genuine gender equality and inclusive rural development.

Election Commission Acknowledged Concerns Over Duplicate Voter ID Numbers

Context

The Election Commission of India (ECI) has acknowledged the issue of identical Electors Photo Identification Card (EPIC) numbers being assigned to voters across different states, raising concerns about voter fraud and election integrity.

Concerns Raised

Reports of duplicate voter ID numbers have raised fears of bogus voting and electoral malpractices. Before the implementation of ERONET, states maintained their own voter databases, resulting in duplication, especially due to voter migration. The ECI is now actively working to eliminate these duplicates and improve voter database accuracy by upgrading to ERONET 2.0.

What is an EPIC Number?

The Electors Photo Identification Card (EPIC) number is a unique 10-digit alphanumeric voter ID provided by the Election Commission of India to every eligible citizen aged 18 and above. Its main functions include:

- Serving as proof of identity during elections.
- Providing easy access to electoral services like voter registration updates, checking voter status, and filing applications.
- Helping prevent electoral fraud by confirming voters' identities.

About ERONET

ERONET (Electoral Roll Management Platform) is a comprehensive, web-based system designed to maintain a unified and accurate electoral roll throughout India.

- Centralizes voter data across all states and Union Territories.
- Operates in 14 different languages and supports 11 scripts for broader accessibility.
- Automatically generates reports on Photo Similar Entries (PSE) and Demographic Similar Entries (DSE), helping detect and eliminate duplicate voter registrations.
- Significantly reduces duplication caused by interstate migration.

National Electoral Rolls Purification & Authentication Program (NERPAP) 2015

Launched in 2015, NERPAP aimed at eliminating duplicate voter registrations by linking EPIC numbers with Aadhaar data.

- Ensures the principle of "one voter, one vote."
- Enhances transparency and integrity in electoral rolls.
- Improves election management efficiency.

Challenges in EPIC-Aadhaar Linking

Despite benefits, linking voter IDs to Aadhaar raises certain concerns:

- Errors in Aadhaar databases could wrongly eliminate genuine voters.
- Aadhaar is not considered legal proof of citizenship, leading to fears about non-citizens getting enrolled.
- Linking voter and Aadhaar data may pose privacy risks.

Way Forward

To address these challenges and strengthen electoral integrity:

- Launch awareness campaigns to inform citizens about the advantages of linking EPIC and Aadhaar, while reassuring them about voter secrecy.
- Strengthen privacy measures and data protection safeguards.
- Enhance electoral transparency to build greater public trust in the democratic process.

Article 136 of the Constitution

Context

Vice President Jagdeep Dhankhar recently raised concerns regarding the potential misuse of Article 136 of the Indian Constitution during a conference on arbitration.

Significance

- Article 136, commonly known as the Special Leave Petition (SLP). It empowers the Supreme Court to grant special leave to appeal from any judgment, decree, or order of any court or tribunal across India.
- This extraordinary jurisdiction allows appeals even in cases lacking an automatic legal right of appeal.
- It applies to both civil and criminal cases. Importantly, granting leave under Article 136 remains a discretionary power of the Supreme Court; thus, the court is not obligated to accept all petitions.

Doctrine of Equality: Supreme Court's Stand on Disability Inclusion

Context

The Supreme Court of India recently delivered a landmark judgment affirming that visually impaired candidates should not be considered ineligible for appointment to judicial services. The verdict reflects a broader push toward inclusivity in public employment and a reinterpretation of constitutional guarantees.

Judicial Stand on Disability and Equality

The Court emphasized that exclusionary criteria based on disability violate the principles of equality and non-discrimination enshrined in the Constitution. It underlined that disability should be explicitly recognized as a ground of non-discrimination under Article 15.

It also stated that indirect barriers, such as rigid standards or procedural hurdles, disproportionately affect persons with disabilities and must be addressed to ensure equal opportunity.

Right to Equality under the Constitution

The Constitution of India guarantees equality through Articles 14 to 18, which collectively form the basis of the right to equality for all citizens.

- **Article 14:** Ensures equal protection of the laws and equality before the law. It bars arbitrary discrimination by the State and promotes legal uniformity.
- **Article 15:** Prohibits discrimination on grounds of religion, race, caste, sex, or place of birth. It also allows for affirmative action—permitting special provisions for women, children, and socially or educationally backward groups, including Scheduled Castes (SCs) and Scheduled Tribes (STs).
- **Article 16:** Guarantees equal opportunity in matters of public employment. It bars discrimination in appointments based on religion, race, caste, sex, descent, and place of birth or residence.
- **Article 17:** Abolishes untouchability in all its forms and makes its practice punishable by law.
- **Article 18:** Abolishes titles and prohibits the State from conferring any title (except academic and military distinctions).

Significance of the Verdict

This ruling reinforces the idea that equal opportunity must be accessible to all, regardless of physical abilities. It also compels public institutions to revise outdated criteria and adopt inclusive policies in recruitment and service conditions.

Way Forward

- Legal recognition of disability as a prohibited ground of discrimination in all public and private spheres.
- Structural reforms to make examinations, interviews, and work environments accessible.
- Creation of inclusive mechanisms for recruitment and evaluation that account for the unique abilities of PwDs (Persons with Disabilities).

Delimitation Dispute –North Vs South – Issue and Analysis

Context and Recent Developments

Recently, Tamil Nadu Chief Minister M. K. Stalin convened an all-party meeting on March 5, 2025. The meeting urged the Union Government to halt the proposed delimitation process scheduled for 2026. It also demanded that the current number and state-wise distribution of Lok Sabha seats remain frozen for another 30 years. This concern is shared by other southern states—Andhra Pradesh, Karnataka, Kerala, and Telangana—who fear that a population-based delimitation could reduce their parliamentary strength.

What is Delimitation?

Delimitation is the redrawing of the boundaries of Lok Sabha and State Assembly constituencies based on the latest population figures. It aims to ensure fair representation so that each MP or MLA represents a roughly equal number of people. It also involves reservation of seats for Scheduled Castes and Scheduled Tribes.

How is Delimitation Carried Out?

According to the Constitution, the Union Government forms a Delimitation Commission through an Act of Parliament. This commission is chaired by a retired Supreme Court judge, with the Chief Election Commissioner and state Chief Electoral Officers as members.

Delimitation has been conducted four times in India—1952, 1963, 1973, and 2002. The number of Lok Sabha seats was increased to 543 in 1973 based on the 1971 Census.

Why Was Delimitation Frozen?

During the Emergency, the 42nd Constitutional Amendment Act of 1976 froze the number of seats based on the 1971 Census. This was done to encourage family planning by assuring states that population control would not result in fewer seats.

Later, the 84th Constitutional Amendment Act of 2002 extended this freeze until 2026. Although a Delimitation Commission was formed in 2002, it only redrew constituency boundaries based on the 2001 Census without changing the number of seats.

Why Southern States Are Concerned

Southern states have implemented population control effectively. Their population growth has slowed over the decades, while northern states like Uttar Pradesh and Bihar have continued to grow rapidly. If seats are now reallocated based purely on population, the north stands to gain more representation in Parliament, while the south could lose out—despite better health indicators, governance, and economic contributions.

What Might Happen in 2026?

Once the freeze ends in 2026, the Centre must initiate a fresh delimitation exercise based on the next census. If the number of Lok Sabha seats remains at 543, southern India could lose over 20 seats. Even if the number is increased to 848, northern states—especially Uttar Pradesh—could gain over 60 seats, while the entire southern region might gain fewer than 40.

What Are Southern States Demanding?

Southern leaders are urging the government to extend the freeze on delimitation till 2056. This would allow states like Uttar Pradesh, Bihar, and Jharkhand more time to implement population stabilisation measures. They argue that good governance and family planning should not be punished with loss of representation.

What Has the Union Government Said?

Union Home Minister Amit Shah recently assured that southern states would not lose any Lok Sabha seats. Instead, new constituencies may be added on a pro-rata basis. However, there is no clarity on whether this will be based on existing seat share or population ratios.

The Way Forward

- **Reconsider the Population-Only Criterion:** Representation should not depend solely on population. Other indicators like literacy, health, and governance performance must also be considered.
- **Avoid Penalising States with Population Control Success:** States that have effectively implemented family planning must not be punished by reducing their Parliamentary strength.
- **Increase the Total Number of Seats:** Instead of redistributing the existing 543 seats, the total strength of the Lok Sabha can be increased to accommodate growing population without reducing seats for any region.
- **Adopt a Balanced Representation Formula:** A new formula combining population and development metrics can ensure fair and inclusive representation for all states.
- **Protect Minimum Representation for All States:** A fixed minimum number of seats can be ensured for every state, so that smaller or slower-growing states do not lose their political voice.

- **Hold Transparent Dialogue with States:** The Centre should hold regular discussions with all states to build trust and consensus on the delimitation process.
- **Set Up an Independent Expert Committee:** An expert panel can assess the impact of seat redistribution and propose a balanced model that protects national unity and federal fairness.
- **Explore Extending the Seat Freeze through Consensus:** If required, the freeze on seat redistribution can be extended again, based on national consensus, to ensure smooth and fair transition in future.

Conclusion

Delimitation is essential for democratic balance, but it should not penalize states that have performed well in population control and development. A fair, transparent, and inclusive approach is required to uphold federal unity and equitable governance in India.

UGC Discontinues UGC-CARE List

Context

The University Grants Commission (UGC) has decided to discontinue the UGC-CARE (Consortium for Academic and Research Ethics) list, which was introduced in 2018 to combat the growing menace of predatory journals. In its place, the UGC has announced a decentralised system that allows institutions to assess the quality of academic journals using a set of suggestive parameters.

Why Was UGC-CARE Introduced?

Prior to 2018, India witnessed a surge in predatory journals that published research articles in exchange for fees without peer review. These low-quality journals harmed the credibility of Indian academia and were being used by faculty to secure promotions, funding, and recognition. Responding to this, UGC launched CARE to maintain a curated list of approved journals with ethical publishing practices.

Problems with the UGC-CARE List

Despite its objectives, UGC-CARE drew criticism from various academic circles:

- **Lack of transparency:** Journals were added or removed without clear criteria or prior notice, affecting academic careers.
- **Over-centralisation:** A centralised decision-making model led to delays, bottlenecks, and exclusion of quality journals, especially in Indian languages and social sciences.
- **Limited inclusion:** Many reputed Indian-language and non-STEM journals were left out, contradicting the NEP 2020's vision of promoting Indian languages and knowledge systems.
- **Continued entry of dubious journals:** Despite the vetting process, several low-quality and questionable journals managed to enter the list.

These issues prompted UGC to form an expert committee in 2023, which ultimately recommended a shift away from the centralised model.

The New Decentralised Approach

The UGC has now provided “suggestive parameters” for institutions to independently evaluate journals. This marks a shift from a regulatory model to one based on institutional autonomy and accountability.

Key Parameters for Journal Evaluation

- Editorial and peer-review transparency
- Qualified and credible editorial board
- Frequency and continuity of publication
- Research ethics and adherence to academic standards
- Accessibility and circulation of the journal

These parameters are not mandatory but serve as guiding principles for institutions to assess journals relevant to their disciplines.

Rationale Behind the Shift

- **Academic freedom and autonomy:** Institutions can make informed, discipline-specific decisions.
- **Greater inclusion:** Allows flexibility to recognise journals in regional languages and emerging fields.
- **Responsibility-driven model:** Institutions now have an incentive to maintain credibility and avoid endorsing predatory publishing.

Concerns and Challenges

Despite these intentions, many academics have voiced apprehensions:

- **Risk of predatory journals resurging:** Without a central oversight mechanism, dubious journals may flourish again.
- **Inconsistent standards:** Different institutions may adopt varying levels of scrutiny, leading to uneven quality benchmarks.
- **Institutional capacity:** Not all institutions may have the expertise or infrastructure to evaluate journals rigorously.
- **Lack of public consultation:** The decision to scrap the list was sudden and did not involve wider academic discussion.

Conclusion

The discontinuation of the UGC-CARE list is a bold step toward decentralisation in academic journal evaluation. While it empowers institutions and promotes flexibility, the success of this approach will depend on how well universities uphold the principles of transparency, academic rigour, and ethical publishing. A careful balance between institutional freedom and accountability is essential to ensure that quality research is not compromised and India's academic credibility continues to grow.

The Right to Information Act: From Transparency to Denial

Context

The Right to Information (RTI) Act, enacted in 2005, was a major step in deepening democracy in India. It empowered citizens to seek information from public authorities, thereby enhancing transparency, accountability, and participation in governance. However, the recent Digital Personal Data Protection (DPDP) Act, 2023, has raised alarm among transparency advocates for undermining the core intent of the RTI Act.

A prominent civil society group National Campaign for Peoples' Right to Information (NCPRI) has expressed concern that the DPDP Act, instead of complementing the RTI Act, conflicts with it. According to the NCPRI, the amendments brought in by the new data protection law may lead to a significant erosion of citizens' right to know.

What Has Changed?

Under the original Section 8(1)(j) of the RTI Act, personal information could be withheld only if it had no relation to public activity or interest, or if disclosure caused an unwarranted invasion of privacy. Even then, if public interest outweighed the potential harm, the information could be released.

However, the DPDP Act modifies this balance by completely exempting personal information from disclosure, regardless of public interest or relevance to public activity. This means even information about the conduct or assets of public officials could now be denied—even if such information is crucial for accountability or exposing corruption.

Furthermore, the amendment removes an important safeguard clause in Section 8(1) of the RTI Act, which stated that any information that cannot be denied to Parliament or a State Legislature cannot be denied to any citizen. This clause served as a standard of transparency and ensured parity in access to information.

Concerns

1. **Undermining Public Interest Exception:** The amended provision now creates an absolute bar on disclosure of personal data, removing the previous safeguard that allowed exceptions in cases of public interest. This means crucial information that could reveal corruption, inefficiency, or misuse of office may now be withheld.
2. **Weakened Transparency Regime:** NCPRI argues that the RTI Act's strength lay in its balance **between privacy and public interest**. The DPDP Act, by enforcing a blanket exemption, tilts this balance in favour of secrecy, reducing the power of citizens to hold authorities accountable.
3. **Conflict Between Laws:** Instead of harmonizing data protection with the RTI Act, the DPDP Act is seen to override it. NCPRI suggests that privacy and transparency should be complementary, not conflicting. They urge that provisions of the DPDP Act should not prevail in cases where the RTI Act allows for justified disclosures.
4. **Threat to Democratic Participation:** Access to detailed and sometimes personal information about public servants—such as assets, service records, or decision-making processes—is essential for social audits, media investigations, and civil society monitoring. Blocking such access undermines informed public engagement.
5. **Concerns Over Data Protection Board Composition:** The proposed Data Protection Board (DPB), which will implement and adjudicate matters under the DPDP Act, is seen as being **too** closely linked to the government. All members, including the Chairperson, will be government-appointed. This compromises its independence and impartiality, especially since the government is the biggest data collector in the country.

Why It Matters

- The RTI Act has been a powerful tool for exposing corruption, improving delivery of public services, and enhancing citizens' trust in governance.
- The amendment made through the DPDP Act risks creating a culture of denial, where information of public value is routinely withheld under the pretext of privacy.

- For instance, the inability to access information about officials' assets or conduct may prevent early detection of disproportionate wealth, favoritism, or irregular appointments.

Way Forward

1. **Safeguard RTI as a Constitutional Right:** The government must ensure that any new law, including the DPDP Act, does not override or weaken a fundamental democratic right. RTI should continue to uphold the principle of maximum disclosure, especially in matters involving public officials.
2. **Restore Public Interest Test:** The previous clause that allowed personal information disclosure in cases of overriding public interest should be **reinstated**. This ensures a balance between privacy and transparency.
3. **Clarify Legislative Priority:** Rules under the DPDP Act must clarify that in case of conflict, the RTI Act's provisions for transparency and accountability will prevail.
4. **Reform the Data Protection Board Structure:** To avoid conflict of interest, the Data Protection Board should have an independent selection committee—similar to the Lokpal or Election Commission appointment process—to ensure it can operate impartially and fairly.
5. **Public Consultation and Legislative Oversight:** Any move to alter the RTI Act's framework must involve **public debate, stakeholder consultation, and parliamentary scrutiny**, rather than executive notifications.

Conclusion

The RTI Act was built on the promise of open government and accountable governance. However, recent legislative developments such as the DPDP Act threaten to dilute its effectiveness. Transparency and privacy are both essential pillars of a democracy, but one should not undermine the other. To preserve citizens' right to know, there must be clear safeguards, institutional reforms, and a reaffirmation of the core values of the RTI Act. Only then can India ensure that its democracy remains participatory, responsive, and transparent.

Digital Personal Data Protection (DPDP) Act and PwD Autonomy Concerns

Context

The Digital Personal Data Protection (DPDP) Act, 2023, has raised serious concerns among disability rights groups. The National Campaign for People's Right to Information (NCPRI) and various disability activists have flagged a specific clause—Section 9(1)—which requires that the consent of a legal guardian be taken before processing the personal data of persons with disabilities (PwDs). This provision, they argue, undermines the autonomy and decision-making rights of PwDs.

Why the Provision is Problematic

Section 9(1) treats all PwDs with guardians as incapable of giving consent themselves. This approach mirrors the treatment of children in the law. However, disability rights groups point out that not all disabilities impact cognitive capacity. The DPDP Act, by failing to differentiate between the types and severity of disabilities, assumes that all PwDs lack the ability to make informed decisions.

This directly contradicts the principles of the Rights of Persons with Disabilities (RPwD) Act, 2016, which supports limited guardianship—a model that allows PwDs to take decisions with assistance, not complete

substitution. The blanket provision in the DPDP Act ignores this distinction and pushes a one-size-fits-all model that undermines the legal and personal independence of PwDs.

Conflict with International Commitments

The DPDP Act also contradicts India's commitments under the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), which calls for respecting the autonomy and legal capacity of all persons with disabilities. By insisting on guardian consent in all cases, the Act denies the right of PwDs to participate equally in decision-making about their personal data.

Issues of Implementation and Accessibility

The Act does not explain how consent will be taken in cases of limited or partial guardianship. Unlike the rules for children's data, there are no guidelines for obtaining consent from PwDs with varying needs. This creates uncertainty for both users and digital platforms.

Moreover, many apps and websites are still not accessible to PwDs. A report by the Vidhi Centre for Legal Policy found that popular platforms like Flipkart and Paytm often lack features such as screen reader compatibility or text resizing. Without accessibility, the right to give or deny consent becomes meaningless for many users.

Risk to Data Privacy and Autonomy

With guardian-controlled access, there is a risk that personal or sensitive data—such as medical history, disability status, or financial data—could be shared or misused without the knowledge or approval of the PwD. This makes PwDs more vulnerable to privacy violations and exclusion from digital services.

Conclusion

The DPDP Act's Section 9(1) reflects a concerning shift toward overprotection at the cost of autonomy. It fails to uphold the principles of equal legal recognition and supported decision-making enshrined in Indian and international disability rights frameworks. For the Act to be inclusive, it must recognise the diversity of disabilities, respect individual autonomy, **and provide** clear, accessible mechanisms for data consent. Otherwise, the very people the law aims to protect may end up excluded from their own rights in the digital age.

Haryana Municipal Elections Conducted Peacefully

Context

The recent Municipal Corporation, Municipal Council, and Municipality elections in Haryana were conducted peacefully, reinforcing the state's commitment to democratic decentralization and effective grassroots governance. These elections highlight the growing significance of urban local bodies in shaping India's urban development.

Evolution of Municipal Governance in India

Early Beginnings (17th–18th Century)

The foundation of municipal governance in India was laid during colonial times. The first municipality was established by the Dutch in Fort Kochi in 1664. The British expanded this system by setting up the Madras Municipal Corporation in 1687, followed by similar institutions in Calcutta and Bombay in 1726. By the 19th century, several urban centres had functional municipal bodies with defined administrative roles.

Post-Independence Reforms

After independence, India recognized the need to strengthen urban local governance. Although municipal administration became a State subject under Entry 5, List II of the Seventh Schedule of the Constitution, various committees were set up to recommend reforms in urban governance and decentralization.

74th Constitutional Amendment Act, 1992

A major milestone in urban governance came with the 74th Constitutional Amendment, which gave constitutional status to urban local bodies. It laid down the structure, powers, and responsibilities of Municipal Corporations, Municipal Councils, and Nagar Panchayats. This act also ensured democratic participation through regular elections and empowered local governments in urban planning, infrastructure development, and service delivery.

Structure of Municipal Governance in India

Municipal governance in India is classified based on the size and character of urban areas:

Type of Local Body	Population Coverage	Key Responsibilities
1. Municipal Corporations	Cities with population above 1 million	Urban planning, solid waste management, public transport, infrastructure
2. Municipal Councils	Medium-sized towns	Sanitation, water supply, local amenities, community welfare
3. Nagar Panchayats	Transition areas from rural to urban	Providing urban facilities, preparing for future urban expansion

Other Urban Local Bodies

Besides the three statutory urban bodies, India also has various specialized and administrative urban institutions, including:

- Notified Area Committees
- Town Area Committees
- Special Purpose Agencies
- Townships & Port Trusts
- Cantonment Boards

Each plays a unique role in specific contexts like industrial townships, military areas, and port zones.

Roles and Responsibilities of Key Officials

- **Mayor:** The elected ceremonial head of a Municipal Corporation who chairs the meetings of the council.
- **Municipal Commissioner:** An IAS officer appointed by the state, responsible for implementing policies and overseeing the executive functioning of the body.
- **Councillors:** Directly elected from wards; they represent the interests of the public and make policy decisions.
- **Chairpersons:** Head Municipal Councils and Nagar Panchayats in smaller urban areas.

These officials ensure governance that is responsive, transparent, and participatory at the urban level.

Financial Management of Municipal Bodies

Urban local bodies rely on multiple sources of revenue to function effectively:

- **Property Tax** – A primary source of income for urban bodies.
- **Water Supply & User Charges** – Fees collected for municipal services.
- **Advertisement Tax** – Levied on hoardings and billboards.
- **Trade Licenses** – Charges from commercial activities and businesses.

Sound financial management enables municipalities to deliver essential public services like sanitation, roads, housing, and public lighting.

Conclusion

The peaceful conduct of municipal elections in Haryana reflects the strength and maturity of India's democratic institutions at the grassroots. As urban areas grow, empowered and accountable municipal bodies will be central to managing development challenges, improving service delivery, and ensuring inclusive growth. Strengthening urban local governance remains crucial for building sustainable and citizen-centric cities across India.

Electoral Photo Identity Cards (EPICs) and Duplicate Concerns

Context:

The Election Commission of India (ECI) has addressed concerns regarding duplicate Voter ID (EPIC) numbers assigned to voters across different States/UTs. The ECI clarified that even if EPIC numbers are identical, a voter can only cast their vote at their designated polling station in their registered constituency.

Understanding Voter ID (EPIC)

- The Voter ID is a crucial document that enables Indian citizens to exercise their fundamental right to vote in democratic elections.
- It also serves as a proof of identity and address for various official purposes.
- Holding a valid Voter ID allows individuals to participate in elections and elect representatives for governance at the national, state, or local level.
- Possession of more than one EPIC is illegal and is considered an offense, either civil or criminal.

Reason Behind Duplicate EPIC Numbers

- Before the implementation of ERONET, EPIC numbers were issued manually through a decentralized system.
- This manual system led to identical EPIC numbers being allotted to different voters across multiple States/UTs.
- Some State/UT CEOs unknowingly assigned the same EPIC numbers to different electors due to the lack of a centralized database.

What is ERONET?

ERONET (Electoral Roll Management System) is a web-based platform introduced to:

- Streamline voter registration, migration, and deletion processes.
- Minimize errors such as duplicate voter registrations.
- Ensure accuracy and transparency in electoral roll management.

The implementation of ERONET has significantly improved the integrity of the electoral roll system, reducing the chances of duplicate EPICs and ensuring a more reliable voter database.

Supreme Court on Private Hospital Pricing

Context:

The Supreme Court of India has urged State governments to formulate guidelines preventing private hospitals from overcharging patients for medicines, medical devices, implants, and consumables by compelling them to purchase from hospital-owned pharmacies. However, the court also emphasized the need for balanced regulations, cautioning against measures that could discourage private investment in the healthcare sector.

Supreme Court's Key Observations

- **Role of Private Healthcare**
 - The court acknowledged the dependency on private hospitals due to gaps in public health infrastructure.
 - Until government hospitals are strengthened, private facilities will remain **crucial** in healthcare delivery.
- **Need for State-Level Guidelines**
 - While refraining from imposing strict regulations, the court encouraged State governments to introduce policies ensuring fair pricing in private hospitals.
- **Avoiding Overregulation**
 - States must strike a balance between consumer protection and the development of private healthcare infrastructure to encourage investment and maintain service quality.

India's Healthcare Landscape

India's healthcare sector is diverse, encompassing hospitals, medical devices, clinical trials, telemedicine, medical tourism, health insurance, and medical equipment. The system is categorized into:

- **Public Sector:**
 - Comprises Primary Healthcare Centres (PHCs) in rural areas.
 - Limited secondary and tertiary care hospitals in urban centers.
- **Private Sector:**
 - **Dominates** secondary, tertiary, and quaternary healthcare services.
 - Concentrated in metros, Tier-I, and Tier-II cities.

Private Healthcare in India

- **Major Contributor:** The private sector accounts for nearly 60% of India's total healthcare expenditure.
- **Fragmentation & Disparities:** The private healthcare market is highly fragmented, leading to uneven service delivery between rural and urban areas.
- **Affordability Concerns:**
 - High cost of urban healthcare.
 - Limited insurance coverage with expensive policies.
 - Lack of uniform pricing mechanisms.

Challenges in India's Healthcare Sector

1. Limited Access to Basic Healthcare

- Shortage of medical professionals and quality facilities.
- Inadequate public health funding results in service gaps.
- Lack of preventive healthcare increases disease burden and treatment costs.

2. Low Public Health Expenditure

- India spends only 1% of its GDP on healthcare (2021-22), significantly lower than:
 - **Developed nations** (Japan, Canada, France: ~10%).
 - **Regional peers** (Bangladesh, Pakistan: ~3%).

3. Limited Research & Innovation

- Insufficient investment in medical R&D.
- Slow adoption of advanced healthcare technologies.

4. Shortage of Medical Professionals

- India faces a deficit of 600,000 doctors, along with shortages of nurses and paramedics.

5. Weak Infrastructure & Resources

- **Overcrowded hospitals**, inadequate staff, and limited access to essential medicines.

Legal Framework for Healthcare in India

- **Health as a State Subject**
 - Under the **Constitution**, healthcare falls under the **jurisdiction of State governments**.
- **Right to Affordable Healthcare**
 - **Article 21 (Right to Life)** includes access to **affordable medical care** as a **fundamental right**.
- **Directive Principles of State Policy (DPSP)**
 - Mandates the **State's duty** to ensure **social and economic justice**, including **universal healthcare access**.

The Supreme Court's intervention highlights the urgent need for pricing transparency in private hospitals while ensuring sustainable private sector participation in healthcare.

Supreme Court Highlights Lack of Disabled-Friendly Prisons in India

Context

The Supreme Court of India has expressed grave concern over the inhumane conditions faced by disabled prisoners in the country. This came in response to a petition highlighting the plight of Professor G.N. Saibaba and Father Stan Swamy, both of whom endured severe health challenges while incarcerated due to a complete lack of disabled-friendly facilities in prison.

Inhumane Treatment of Disabled Inmates

Professor G.N. Saibaba, a wheelchair-bound academic and rights activist, suffered immense physical hardship during his imprisonment. The absence of ramps, assistive devices, and basic medical care worsened his health.

Similarly, Father Stan Swamy, an elderly Parkinson's patient, was denied access to essential medical support and assistive aids. He died in custody, triggering national outrage and raising questions about the treatment of vulnerable inmates in Indian prisons.

Rights Violations and Legal Gaps

Disabled prisoners face what the Supreme Court termed a "double punishment": incarceration under a system that lacks basic accessibility and support. This treatment violates multiple constitutional guarantees:

- **Article 14:** The right to equality is compromised when disabled prisoners are not treated on par with others.
- **Article 21:** The right to life and dignity is denied when medical aid, humane conditions, and autonomy are withheld.

The Rights of Persons with Disabilities Act, 2016 mandates reasonable accommodations for individuals with disabilities. However, the Act is silent on the specific needs of incarcerated individuals, and Indian prison manuals lack any disability-specific mandates.

State Responsibility and Judicial Precedents

As prison administration falls under the State List, it is the duty of state governments to ensure humane treatment and accessibility for all inmates, including those with disabilities.

In *Upendra Baxi vs. State of U.P.* (1983), the Supreme Court emphasized the need for minimum standards of human dignity in prisons—standards that remain unmet for disabled inmates.

Global Commitments and Standards

India has ratified the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), which requires states to protect persons with disabilities from torture, neglect, and inhuman treatment. Further, the Nelson Mandela Rules (2015) call for reasonable accommodations in prison systems. Both frameworks remain largely unimplemented in India, reflecting a major compliance gap.

Prison Statistics and the Invisible Minority

According to Prison Statistics India (PSI) 2022 by the NCRB:

- India houses 573,220 prisoners, with undertrials making up nearly 75% of the population.
- Marginalized communities (SC, ST, OBC) constitute over 66% of inmates.
- Despite global estimates suggesting that 16% of the population has some form of disability, the report contains no data on prisoners with disabilities.

The absence of official records reflects systemic invisibility and policy neglect of this vulnerable group.

Measures for Immediate Action

To rectify these human rights violations, urgent steps must be taken:

- **Data Collection:** Establish reliable records on disabled prisoners across all states.
- **Revised Prison Manuals:** Include mandatory accessibility infrastructure such as ramps, modified toilets, and assistive devices.
- **Healthcare Access:** Ensure regular medical check-ups and specialized care for inmates with chronic illnesses or physical limitations.
- **Sensitization Training:** Train prison staff to handle the needs of disabled inmates with empathy and professionalism.

- **Independent Monitoring:** Create oversight mechanisms to ensure compliance with disability and human rights laws.

Learning from Global Practices

Countries like the United States and the United Kingdom have instituted prison reforms ensuring wheelchair-accessible cells, medical aids, and personalized care for disabled inmates. India must adopt such models to meet its domestic and international legal obligations.

Conclusion

The treatment of disabled prisoners in India reveals a glaring gap in the country's human rights and prison reform landscape. Ensuring accessibility, dignity, and medical care is not merely an act of benevolence—it is a constitutional duty and a global obligation. Urgent reforms must be initiated to protect the rights of this invisible minority within India's criminal justice system.

Blocking of Vikatan and Concern for Press Freedom

Context

The Tamil media platform Ananda Vikatan recently faced unexpected blocking of its website across several Internet Service Providers (ISPs). The media house received no prior notice or formal explanation for the action. Later, the Ministry of Information & Broadcasting (MIB) cited the Information Technology Rules, 2021, as the legal basis. The Ministry claimed that a cartoon published by Vikatan, which satirized a deportation controversy involving Indian migrants in the U.S., posed a threat to India's sovereignty and foreign relations.

Concerns Over Violation of Fundamental Rights

The blocking of the Vikatan website raises serious constitutional questions. Firstly, it undermines Article 19(1)(a), which guarantees freedom of speech and expression. Restricting media content without following due process curtails press freedom. Secondly, Article 19(1)(g), which provides the right to practice any profession, is affected when an entire media platform is blocked, disrupting its business operations. Additionally, Article 14, the right to equality, is violated when enforcement appears arbitrary or selectively targets certain media outlets. The action also indirectly impacts Article 21, which upholds the right to life and personal liberty, as it restricts public access to information.

Balancing Free Speech and Government Restrictions

While the Constitution grants freedom of speech under Article 19(1)(a), it also allows the government to impose reasonable restrictions under Article 19(2). These restrictions include concerns related to national sovereignty, state security, foreign relations, and public order. However, in the case of Vikatan, the government did not present any direct or immediate threat that would justify a blanket website ban. As a result, the action appears disproportionate and excessive.

Legal Framework for Website Blocking

The legal basis for blocking digital content in India comes from Section 69A of the Information Technology Act, 2000. This provision allows the government to block websites in the interest of national security, public order, or foreign relations. However, it also mandates procedural safeguards such as issuing prior notice and giving the content creator a chance to be heard—except in cases of emergency.

The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, further strengthen the framework. They create a three-tier content regulation system, where an Inter-Departmental Committee can recommend content blocking.

Judicial Viewpoint: Shreya Singhal Case

The Supreme Court, in the landmark *Shreya Singhal v. Union of India* (2015) case, upheld the constitutionality of Section 69A but laid down important guidelines. It emphasized that any blocking order must be reasoned, transparent, and subject to judicial review. Secretive and arbitrary censorship without following due process, as allegedly seen in the *Vikatan* case, would be unconstitutional.

Why This Case Matters

The incident involving *Vikatan* reflects growing concerns around digital censorship and shrinking space for press freedom in India. It draws attention to the lack of transparency in how website blocking is carried out and the increasing tendency to suppress dissenting or satirical content. This episode adds to the ongoing debate on how digital rights and constitutional freedoms can be protected in the era of online governance.

Conclusion

The *Vikatan* case highlights the need for transparency and due process in digital censorship. Arbitrary website blocking undermines press freedom and constitutional rights. As digital media grows, protecting free speech and ensuring lawful regulation is essential to uphold democratic values and prevent misuse of state power.

Fast Track Special Courts

Context

Fast Track Special Courts (FTSCs) have significantly accelerated the legal process for cases related to sexual offenses, particularly under the Protection of Children from Sexual Offences (POCSO) Act, 2012. With a disposal rate of 96.28%, they play a vital role in ensuring timely justice for survivors of sexual crimes.

What are Fast Track Special Courts (FTSCs)?

FTSCs are special courts established to handle cases of rape and child sexual abuse with urgency. They were introduced in 2019 by the Department of Justice under the Ministry of Law and Justice. The initiative is implemented as a Centrally Sponsored Scheme.

Funding is shared between the Centre and the States in the ratio of 60:40. For Northeastern and Hilly States, the ratio is 90:10. The target is to set up 790 FTSCs across the country, including courts dedicated exclusively to POCSO cases (e-POCSO courts).

Each FTSC is expected to handle and dispose of approximately 41-42 cases per quarter, ensuring at least 165 cases are resolved annually.

Need for Fast Track Courts

The Supreme Court in 2019 directed the establishment of such courts for faster disposal of POCSO cases. Both the CrPC and the POCSO Act mandate a specific timeline for investigations and trials. However, delays due to limited judicial capacity result in prolonged trauma for victims and weaken the deterrent value of the law.

FTSCs help bridge this gap by delivering justice swiftly and reinforcing societal commitment to fighting sexual crimes.

Key Recommendations by IIPA

The Indian Institute of Public Administration (IIPA) has recommended the continuation and strengthening of the FTSCs. It emphasized the need to enhance the courts' infrastructure and judicial capacity.

States and High Courts should appoint judges with experience in POCSO cases and offer training in handling sensitive matters. Courtrooms should be equipped with modern facilities like audio-video recording systems, e-filing mechanisms, and digital case records.

The number of forensic labs must be increased to ensure timely DNA reports. This will help speed up trials and ensure fair outcomes. Training forensic staff is also important for handling sensitive evidence efficiently. Sensitive testimony collection is vital in child abuse cases. Therefore, IIPA has suggested setting up Vulnerable Witness Deposition Centres (VWDCs) in every district. These should include child-friendly environments and psychological support for victims. The presence of child psychologists at FTSCs can make the legal process less traumatic for young survivors.

Sub-categorisation of Scheduled Castes in Andhra Pradesh

Context

The Andhra Pradesh government has accepted the recommendations of a commission that studied the demand for dividing Scheduled Castes (SCs) into sub-categories. This step aims to ensure that the benefits of reservations and welfare schemes are shared more equally among different SC communities.

Background and Rationale

The concept of sub-categorisation refers to dividing the broader SC category into smaller groups. The aim is to address the uneven distribution of reservation benefits in education, jobs, and welfare. Some SC communities argue that a few sub-castes are getting a major share of the benefits while others remain left out.

This demand is not new. It has existed for more than three decades in Andhra Pradesh. A similar attempt was made earlier through the Justice Ramachandra Rao Commission in 1996. The recent move is part of a continuing effort to correct historical imbalances among SC sub-groups.

Legal Developments and Supreme Court Rulings

In 1975, Punjab issued a directive prioritising some SC groups in reservation. This action was later questioned. In Andhra Pradesh, a similar law was struck down by the Supreme Court in the E V Chinnaiah case (2004). The Court ruled that once a caste is included in the SC list by the President under Article 341, states cannot further divide or create sub-quotas.

However, the legal position evolved. In 2020, the Supreme Court observed that there are "unequals among equals" in the SC category. It said the earlier judgment needed review. The Court referred to the 2018 Jarnail Singh case, where the concept of a "creamy layer" was extended to SCs to exclude the wealthier members from reservation benefits.

In a landmark 2024 decision, the Supreme Court permitted sub-categorisation of SCs and STs. It clarified that Article 341 only limits the power of the President to include or exclude castes but does not prevent states from creating internal quotas if done with care and data support.

Arguments Supporting Sub-categorisation

Many states argue that not all SCs are equally backward. Some communities continue to be underrepresented even after decades of reservation. Sub-categorisation is seen as a way to correct this imbalance.

The idea is based on Article 14 of the Constitution, which supports equality. Treating unequals equally leads to injustice, and sub-categorisation helps ensure true equality. It can also lead to caste-wise data collection to measure representation more accurately.

Arguments Against Sub-categorisation

Critics believe that dividing SCs further could lead to political misuse of reservation policies. It may also go against the original intent of including castes in a unified SC list through Presidential notification.

They argue that allowing states to modify the reservation structure may weaken the central authority and create confusion.

Conclusion

With the Supreme Court's latest ruling, states now have the legal basis to sub-categorise SCs. However, the process must be guided by data and fairness, not political interest.

Any sub-division must be supported by solid evidence to justify unequal treatment. The use of socio-economic surveys and caste-based data is essential to make informed decisions. There must also be judicial oversight to ensure transparency and protect the rights of all communities.

Finally, policies must also consider removing the creamy layer among SCs, so that the most disadvantaged groups receive the support they need. Only then can reservation truly serve the purpose of social justice.

Madras High Court on NIRF Ranking

The Madurai Bench of the Madras High Court recently directed the Ministry of Education and the National Board of Accreditation to stop publishing the 2025 edition of the National Institutional Ranking Framework (NIRF). The court raised concerns about the current process and accuracy of the rankings.

NIRF was launched in 2015 and ranks educational institutions based on parameters such as teaching, research, graduation outcomes, outreach, and perception. The framework helps students make informed choices and motivates institutions to improve their academic performance. However, it has also faced criticism over transparency and methodology.

Judiciary's In-House Inquiry Against Delhi High Court Judge

Context

The Chief Justice of India (CJI) has initiated a rare in-house inquiry into the conduct of Justice Yashwant Varma of the Delhi High Court. This is seen as a significant move in maintaining ethical standards within the judiciary.

What is an In-House Inquiry?

The in-house inquiry mechanism is an internal process used to examine complaints against judges without involving the formal process of impeachment.

This system was developed following multiple controversies:

- In 1995, financial allegations were raised against Bombay High Court Chief Justice A.M. Bhattacharjee.
- In 1997, the Supreme Court laid down in-house procedures after the Justice V. Ramaswami episode.
- In 2014, the framework was refined to handle complaints such as sexual harassment through a step-by-step inquiry process.

How Does It Work?

The process includes the following steps:

1. Initial Scrutiny:

Complaints are first reviewed by the Chief Justice of India (for SC judges) or the Chief Justice of the respective High Court (for HC judges).

2. Formation of a Committee:

If a prima facie case is found, a three-member inquiry committee is formed.

For Justice Varma's case, the panel includes the Chief Justices of Punjab & Haryana and Himachal Pradesh High Courts, and a judge from Karnataka High Court.

3. Inquiry Process:

The committee examines evidence, records statements, and evaluates the complaint.

It then submits its findings to the CJI for final decision-making.

4. Possible Outcomes:

- If serious misconduct is found, the CJI may forward the report to the President for impeachment.
- For minor issues, the judge may be asked to resign.
- If charges are baseless, the matter is closed.

How is it Different from Impeachment?

Impeachment is a constitutional process under Article 124(4). It involves both Houses of Parliament and is often politically influenced and time-consuming.

In contrast, the in-house inquiry is an internal disciplinary mechanism to uphold judicial accountability.

Challenges in the Current System

- **Lack of Transparency:** Most inquiries are conducted in secrecy, with limited public disclosure.
- **No Direct Power of Removal:** Even after misconduct is proved, the judiciary cannot remove a judge.

- **Delayed Justice:** Investigations often stretch over years.
- **Political Hurdles in Impeachment:** The Parliament's role in impeachment often leads to inaction due to political reasons.

Notable Cases

- **Justice V. Ramaswami (1991):** Faced impeachment but was saved by political support in Parliament.
- **Justice Soumitra Sen (2011):** Found guilty by inquiry, resigned before the Lok Sabha could vote.
- **Justice S.N. Shukla (2022):** Found guilty of judicial misconduct but no impeachment followed.

Reform Measures Suggested

- **Publish Inquiry Reports:** Making findings public will enhance trust and accountability.
- **Create a Judicial Oversight Body:** Bodies like the Judicial Standards and Accountability Commission can act as independent watchdogs.
- **Alternative Punishments:** Penalties like suspension or financial fines should be introduced to deal with minor misconduct.
- **Timely Completion:** Ensure time-bound inquiries to prevent prolonged delays.

Conclusion

The in-house inquiry system is a crucial tool to uphold integrity within the judiciary. However, its effectiveness depends on transparency, timely execution, and the willingness to act on its findings. Strengthening it will help protect judicial credibility and uphold public trust.

Rules for Disclosure of Judges' Assets

Context

The discovery of significant cash at the residence of Delhi High Court judge Justice Yashwant Varma has reignited national debates on judicial accountability. The incident has led to renewed demands for mandatory public disclosure of judges' assets and liabilities, an area still lacking regulation in India.

Historical Context of Asset Disclosure

The issue of judges disclosing their assets first surfaced in 1997 when the Supreme Court adopted a resolution requiring judges to declare their assets to the Chief Justice of the respective court. However, these declarations were not meant for public viewing.

In 2009, the Supreme Court allowed judges to voluntarily make their asset declarations public via the court's website. While this step was hailed as progressive, the practice has seen inconsistency and dilution over time. The last known updates were posted in 2018, reflecting a gradual lapse in implementation.

Current Status of Asset Declarations

As of March 2025, only 97 out of 770 High Court judges have publicly disclosed their assets—less than 13% of the total. Most High Courts remain resistant to transparency measures. Several courts have denied requests under the Right to Information (RTI) Act, with the Uttarakhand High Court ruling in 2012 that judges are not bound by RTI provisions. High Courts in Allahabad, Bombay, Rajasthan, and Gujarat have also declined RTI pleas for judges' asset details.

The RTI Act and Public Servants

The Right to Information (RTI) Act, enacted in 2005, mandates that public servants must submit annual declarations of their assets and liabilities. These declarations are typically accessible to the public. While the RTI Act has empowered citizens and bolstered administrative transparency, judges remain largely outside its purview, creating a transparency gap within the higher judiciary.

Legislative Recommendations

In 2023, the Parliament's Committee on Personnel, Public Grievances, and Law and Justice recommended enacting legislation to make judges' asset disclosures mandatory. Despite this, no tangible legislative progress has been achieved so far. The absence of reform underscores the judiciary's institutional resistance to external accountability.

Comparative Analysis and Need for Reform

There exists a disparity in transparency norms between judges and other public officials. Politicians and civil servants must publicly declare their assets, while judges enjoy exemption. This discrepancy undermines public confidence in judicial integrity.

Given the judiciary's influential role in upholding the Constitution, ensuring transparency in judges' financial conduct is essential. Citizens expect the same accountability from the judiciary as they do from elected representatives and bureaucrats.

Conclusion

The debate around asset disclosure in the judiciary has gained urgency following recent controversies. To restore public trust and uphold democratic values, India must institutionalize mandatory, public, and periodic disclosure of judges' assets through appropriate legislation.

Supreme Court Sets up Task Force to Address Student Suicides

Context

The Supreme Court has taken a significant step to address the rising cases of student suicides in higher education institutions by forming a national-level task force. The move reflects growing concerns about mental health in academic spaces.

Why This Matters

The court observed that suicides among students now surpass those by farmers due to agrarian distress. It stressed the urgent need to improve mental health frameworks within educational institutions to prevent such tragedies.

About the Task Force

- **10-Member Committee:** Constituted to study the root causes behind student suicides such as academic stress, ragging, discrimination, and financial or emotional strain.
- **Mandate:** It will assess existing mechanisms, laws, and institutional support systems to recommend improvements.

- **Inspection Powers:** The task force can conduct surprise inspections in higher education institutions.
- **Reporting Timeline:** An interim report is to be submitted within four months, followed by a final report in eight months.
- **Flexible Scope:** The task force can offer suggestions beyond its original brief, based on findings.

Student Suicide Data in India

- According to the NCRB 2022 report, over 13,000 students died by suicide in one year.
- **Annual Rise:** Student suicides are growing at nearly 4% per year, twice the national average suicide rate.
- **Gender Disparity:** Male suicides slightly decreased (6%), but female suicides rose (7%) between 2021–22.
- **Hotspots:** Maharashtra, Tamil Nadu, and Madhya Pradesh contribute to one-third of all student suicides.

Causes Behind Student Suicides

1. **Academic Pressure:** Especially in competitive environments like Kota or IITs.
2. **Mental Health Struggles:** Depression, anxiety, and burnout with limited access to help.
3. **Social Stigma:** Fear of being judged stops students from seeking psychological support.
4. **Discrimination:** Caste-based or gender-based bias remains a concern in some institutions.
5. **Family & Financial Burden:** Parental pressure and lack of economic resources increase stress.
6. **Fear of Failure:** Exam failure or low grades can trigger intense distress.
7. **Weak Support Systems:** Many colleges lack trained counselors or mental health infrastructure.
8. **Social Media Impact:** Cyberbullying and peer comparisons worsen self-esteem and mental health.

Government Initiatives

- **Manodarpan:** A nationwide helpline and counseling platform launched by the Ministry of Education.
- **Rajasthan's Kota Model:**
 - Appointed 90 psychological counselors.
 - Toll-free helpline and "Dinner with DM" program for student interaction.
 - 10,000 hostel gatekeepers trained to detect distress signs.
- **National Mental Health Policy:** Focuses on enhancing awareness and institutional mental health services.

What Experts Recommend

- The IC3 Institute emphasizes reshaping the education system to support emotional well-being alongside academics.
- Strong career and emotional counseling systems are needed to guide students through stress and expectations.
- Focus must shift from marks and competition to holistic development and nurturing student potential.

Conclusion

Student suicides reflect a deeper systemic failure in how institutions handle mental health and pressure. The Supreme Court's initiative is a wake-up call. Educational spaces must become safer, supportive, and mentally nurturing for students. This requires collaboration among institutions, families, and governments.

MPs Get Pay Hike

Context

The Centre has notified a 24% salary hike for Members of Parliament (MPs), effective from April 1, 2023. This is the first revision since April 2018.

Key Changes

- The salary increase has been made under the Salary, Allowances and Pension of Members of Parliament Act, using the Cost Inflation Index under the Income Tax Act, 1961.
- The monthly salary of an MP has risen from ₹1 lakh to ₹1.24 lakh. Daily allowance has increased from ₹2,000 to ₹2,500.
- Former MPs will now receive ₹31,000 as monthly pension, up from ₹25,000. MPs are also provided rent-free housing in New Delhi during their tenure.

PM VIKAS Scheme for Minorities

Context

The Union Minister of Minority Affairs reaffirmed the focus of the PM VIKAS scheme on empowering minority communities.

About the Scheme

PM VIKAS (Pradhan Mantri Virasat Ka Samvardhan) merges five earlier schemes aimed at skilling, education, and heritage promotion among six notified minorities—Muslims, Sikhs, Christians, Buddhists, Jains, and Parsis.

Focus Areas

It supports traditional and modern skill development, women's entrepreneurship, credit access, and education through open schooling.

The Export Promotion Council for Handicrafts (EPCH) acts as a knowledge partner, helping with training, branding, and market linkages.

Debate over Collegium System in Judicial Appointments

Context

A recent meeting chaired by Vice President Jagdeep Dhankhar with Rajya Sabha floor leaders discussed judicial reforms, including concerns about the Collegium system. The backdrop was the controversy over the recovery of semi-burnt currency notes from the residence of a Delhi High Court judge.

What is the Collegium System?

The Collegium system governs the appointment and transfer of judges in the higher judiciary, including the Supreme Court and High Courts. It is not mentioned in the Constitution but evolved through Supreme Court rulings known as the “Judges Cases.”

The Supreme Court Collegium consists of the Chief Justice of India and four senior-most judges. In High Courts, the Collegium includes the Chief Justice of the High Court and two senior-most judges. Recommendations for judicial appointments are made by the Collegium and sent to the government, which may conduct background checks through the Intelligence Bureau. However, if the Collegium reiterates a name, the government must approve it.

Issues with the Current System

The Collegium has been criticized for being opaque and lacking institutional accountability. There are no formal eligibility criteria or structured procedures. Deliberations are held in private, with no public record or explanation for decisions. As a result, even senior advocates are often unaware of whether their names are under consideration.

NJAC and the Call for Reform

To address these shortcomings, the National Judicial Appointments Commission (NJAC) was proposed and passed by Parliament in 2014. It was meant to replace the Collegium with a body including the CJI, two senior judges, the Law Minister, and one eminent person appointed by the President. However, in 2015, the Supreme Court struck down the NJAC as unconstitutional, citing concerns about judicial independence.

Recommendations for the Way Ahead

Judicial independence must be preserved, but the system of appointments must also be transparent and accountable. Reforms could include clearer selection criteria, broader participation in the decision-making process, and maintaining records of deliberations. A structured and transparent appointment mechanism can improve public trust and institutional credibility in the judiciary.

Reforming the Central Bureau of Investigation

The Central Bureau of Investigation (CBI) is set for major reforms following a Parliamentary committee’s detailed recommendations aimed at boosting efficiency, autonomy, and transparency. These changes seek to resolve structural challenges that affect the CBI’s functioning.

Key Issues Identified

The 145th report by the Parliamentary Standing Committee on Personnel, Law, and Justice highlights:

- Shortage of deputed officers due to delays and lack of incentives
- Legal limitations due to states withdrawing general consent
- Increasing complexity in investigations, especially cyber and financial crimes

Proposed Reforms

1. Permanent Cadre Formation

- Direct recruitment for core ranks like DSPs, Inspectors, and SIs
- Recruitment through SSC, UPSC, or a dedicated CBI exam
- Reduced reliance on deputation to build stability

2. Lateral Entry of Experts

- Hire specialists in cybercrime, forensics, and financial fraud
- Address modern crime challenges with domain expertise

3. Legal Empowerment

- Propose a law allowing CBI to investigate national-level crimes without state consent
- Include checks to ensure federal balance and impartiality

4. Boosting Transparency and Accountability

- Publish annual reports and case statistics online
- Introduce public-access case tracking for non-sensitive investigations

5. Streamlining Administration

- Improve nomination processes and incentives for deputation
- Establish in-house expert teams to reduce consultant dependency

These reforms aim to build a stronger, independent, and modern CBI capable of addressing 21st-century challenges while ensuring public trust and operational effectiveness.

CBI Recruitment and Autonomy Reforms

Recommendations

- Develop a recruitment framework through UPSC or dedicated CBI exams.
- Limit deputations to senior posts.
- Create a permanent cadre and allow lateral hiring in cybercrime and forensics.
- Enact a law for CBI to act without state consent on national security issues.

Current Challenges

- Lack of autonomy and manpower shortages.
- Dependence on deputations, especially for lower ranks.
- Operational limits due to withdrawn general consent by several states.

Privilege Motion in Parliament

Context

An opposition leader moved a privilege motion against a Union Minister, accusing him of giving false information about MGNREGS fund allocations.

What is a Privilege Motion?

A privilege motion is filed when a Member of Parliament believes there has been a violation of their parliamentary rights. If accepted, the motion is sent to the Privileges Committee for review. The committee may summon people, examine records, and report its findings to the House.

Difference from Contempt

A breach of privilege violates the rights of members, while contempt is any act that disrupts parliamentary functioning.

Constitutional Provisions

- **Article 105:** Grants MPs immunity and privileges.
- **Article 122:** Prevents judicial review of parliamentary procedures.

Samagra Shiksha Abhiyan (SSA): Fund Disputes**Context**

A Parliamentary Committee asked the Education Ministry to resolve a ₹4,000 crore fund dispute with West Bengal, Kerala, and Tamil Nadu under SSA.

About the Scheme

Samagra Shiksha is a centrally sponsored scheme that supports school education from pre-primary to Class 12. It aims to provide inclusive, quality, and equitable education aligned with the National Education Policy (NEP) 2020.

Features

It funds uniforms, books, support for out-of-school children, infrastructure like classrooms and hostels, and promotes ICT and teacher training.

Current Issue

Tamil Nadu has declined to adopt the three-language formula under NEP and hasn't signed the PM-SHRI MoU, leading to withheld funds..

Betting and Gambling: State Jurisdiction**Context**

The Union Minister clarified that betting and gambling fall under the State List in the Constitution.

Regulatory Highlights

- **Finance Act 2023:** Imposes 30% tax on net winnings from online gaming.
- **GST Council:** Imposed 28% GST on online gaming from October 2023.
- **MeitY:** Blocked over 1,400 illegal online betting websites.
- **State Role:** States handle regulation, while the Centre provides support and advisory.

Legal Framework

- **Bharatiya Nyaya Sanhita, 2023:** Imposes 1–7 years imprisonment for unauthorized gambling.
- **Awareness Drives:** Guidelines by Ministries of Education and Information for addressing online gaming addiction.

Pradhan Mantri Matru Vandana Yojana (PMMVY)

Context

Opposition parties raised concerns over inadequate maternity benefits under PMMVY due to low budget allocations.

About the Scheme

Implemented under the National Food Security Act, PMMVY provides financial support to pregnant and lactating mothers. It offers ₹5,000 directly and, with Janani Suraksha Yojana, the total benefit reaches ₹6,000. Additional support of ₹6,000 is given for a second girl child under Mission Shakti.

District Mineral Foundation (DMF)

In News

- Odisha Government has reworked DMF norms to improve project selection, coverage, and fund usage.

What is DMF?

- Established under the Mines and Minerals (Development and Regulation) Amendment Act, 2015.
- A non-profit trust in mining-affected districts, aiming to benefit communities affected by mining.

Recent Updates

- Directly-affected area redefined: Now up to 15 km from mines (up from 10 km).
- Indirectly-affected area: Now up to 25 km.
- Development within 5 km radius to be done in saturation mode.

Key Features

- Funded by contributions from leaseholders, in addition to royalty payments.
- Governed by state-specific rules, aligned with laws like PESA Act (1996) and Forest Rights Act (2006).
- DMFs have been established in 645 districts across 23 states.

Wage Hike under MGNREGS

In News

- Union Government announced a 2–7% wage hike under MGNREGS for FY 2025–26.

Details

- Wage increase ranges from ₹7 to ₹26.
- Haryana recorded the highest wage: ₹400/day.
- States like AP, Assam, Arunachal Pradesh, Telangana saw a ₹7 increase.

About MGNREGA

- A demand-driven wage employment programme providing 100 days of guaranteed work annually to rural households.
- Covers 266 work types including agriculture, irrigation, and natural resource management.

Wage Calculation

- Based on CPI for Agricultural Labourers (CPI-AL).
- Goa (FY 2024–25) saw the highest hike (10.56%), UP and Uttarakhand the lowest (3.04%).

Digital Reforms

- ABPS for payment efficiency (99.49% Aadhaar-linked workers).
- NMMS for real-time attendance and transparency.
- NeFMS and DBT ensure 100% electronic wage disbursement.

Impact

- Budget allocation rose from ₹11,300 crore (2006–07) to ₹86,000 crore (2024–25).
- Women's participation has increased to over 58%.

Supreme Court Directs Timely Processing of Mercy Petitions

In a landmark move, the Supreme Court of India has directed the formation of dedicated cells in state governments to ensure swift disposal of mercy petitions by death row convicts. The decision came in light of prolonged delays in executing death sentences, which the court observed to be inhuman and psychologically damaging.

Background on Mercy Petitions

Mercy petitions are clemency appeals made by convicts to the President or the Governor. These go through multiple bureaucratic stages, often resulting in years of delay.

Supreme Court's Stand

- The court upheld the Bombay High Court's ruling commuting the death sentence of two convicts in the 2007 Pune gang-rape case.
- It stressed the urgent need for a structured mechanism to avoid unnecessary delays in mercy petition processing.

New Procedural Reforms

- States must establish dedicated cells in home or prison departments.
- An officer-in-charge will oversee petition tracking and coordinate with relevant authorities.
- All communication is to be digitised for efficiency.

Case Study – Pune Gang-Rape

Mercy petitions filed in 2015 faced excessive delay, leading to commutation in 2025. This delay triggered the Supreme Court's intervention.

Maharashtra's Implementation

A nine-member committee has been set up to review and expedite pending petitions quarterly.

This ruling aims to institutionalise fairness, reduce mental trauma for convicts, and uphold the humane administration of justice.

UNESCO Report Calls for Nutritional Overhaul of School Meals Globally

At the 'Nutrition for Growth' summit in France (March 27–28, 2025), UNESCO launched its report titled *"Education and Nutrition: Learn to Eat Well."* It urges governments worldwide to improve the nutritional quality of school meals and include food education as part of formal learning.

Global Status of School Meals

Nearly 47% of primary school children receive school meals, but the nutritional value remains poor in many countries. Only 93 of 187 countries have any food-related school legislation, and just 65% regulate food sold in cafeterias and vending machines.

Key Findings

- 27% of meals in 2022 were not planned with nutritionist input.
- Rising childhood obesity and food insecurity show urgent need for reform.
- School food systems often fail to promote healthy eating habits.

Successful Models

- **Brazil** restricts ultra-processed food in schools.
- **China** improved diets in rural schools with dairy and vegetables.
- **Nigeria's** programme boosted enrolment by 20%.
- **India** enhanced adolescent cognition by adding fortified pearl millet.

Recommendations

UNESCO calls for prioritising fresh, local food, cutting sugary and processed meals, and integrating food literacy into education. It will soon provide tools and training to support governments in achieving these goals.

India to Launch 'Sahkar Taxi'

The Government of India is launching a new ride-hailing initiative called Sahkar Taxi, aiming to offer a cooperative-driven alternative to platforms like Ola and Uber. Announced by Union Minister Amit Shah, the scheme seeks to directly benefit drivers rather than large tech corporations.

Key Features

- **Cooperative Ownership:** Drivers will own and run the service collectively, ensuring profits are shared among them.
- **Inclusive Fleet:** Will include two-wheeler taxis, auto-rickshaws, and four-wheelers.
- **Driver Welfare:** A cooperative insurance scheme is planned to protect driver interests.

Background and Need

India's ride-hailing sector is booming, expected to reach \$44.18 billion by 2030. Despite this growth, platforms like Ola and Uber face shortages in vehicle supply and driver dissatisfaction due to high commissions and operating costs.

Driver-Focused Model

Unlike corporate platforms that take a percentage of fares, Sahkar Taxi will give drivers full earnings, enhancing income stability and self-reliance.

Successful Regional Models

- **West Bengal's Yatri Sathi:** Offers affordable, reliable rides with regional language support.
- **Kerala Savaari:** Government-backed service now relaunching with better tech and pricing.

Conclusion

Sahkar Taxi is part of a broader trend supporting cooperative entrepreneurship in India's gig economy. By prioritising driver ownership, income equity, and service accessibility, the model promises a transformative shift in urban mobility.

Supreme Court Ruling on GST

In a major relief for businesses, the Supreme Court of India has ruled that companies can rectify human or arithmetical errors in their GST filings without facing penalties. The ruling is expected to improve tax compliance and reduce undue burden on honest taxpayers.

Background and Legal Context

- The case originated from a CBIC appeal against a Bombay High Court verdict allowing rectification of GST returns.
- The Supreme Court upheld the High Court's decision, stating that corrections should be allowed manually or electronically.
- The Court stressed that making genuine errors is a human trait and even tax authorities are not immune to such mistakes.

Key Takeaways from the Judgment

- Right to correct errors is part of the constitutional right to do business.
- Input Tax Credit (ITC) should not be denied for clerical mistakes if there is no revenue loss to the government.
- Small and medium businesses, often without advanced accounting tools, stand to benefit the most.

Directions to CBIC

- The Court instructed the CBIC to revise guidelines and extend timelines for error correction in GST filings.
- It also urged the development of more adaptive and user-friendly GST software to ensure smoother compliance.

Implications

This ruling sets a precedent for a more flexible and humane tax system, protecting taxpayer rights while upholding the principle of justice. It is expected to ease compliance and reduce litigation related to minor filing mistakes.

INTERNATIONAL RELATIONS

Kurd Issue**Context**

The Kurdistan Workers Party (PKK) recently declared an immediate ceasefire, potentially ending a prolonged insurgency.

About Kurds

Kurds are an ethnic group comprising approximately 40 million people across Turkey, Syria, Iran, and Iraq. Historically, despite promises post-World War I, Kurds never received their own nation-state. They've endured cultural suppression and military repression. PKK, initially seeking independence, has waged insurgency against Turkey since the 1980s. Repeated peace attempts have previously failed.

India's Strategic Copper Acquisition in Zambia**Context**

India has secured a copper and cobalt exploration block covering 9,000 square kilometers in Zambia, a significant step towards ensuring access to critical minerals essential for green and digital technologies. Zambia is currently ranked as the seventh-largest copper producer globally.

Global Trends in Copper Demand and Supply

Recent reports suggest that copper ore supplies are tightening globally, while demand continues to surge. Copper is increasingly vital for renewable energy systems, electric vehicle batteries, and clean technologies. China controls about half of the world's copper smelting and refining capacity. Leading producers include Chile, Peru, China, the Democratic Republic of the Congo (DRC), and the United States. The race among major economies like India, the U.S., and China to secure copper supply chains has heightened geopolitical competition.

India's Domestic Copper Landscape

India has notable copper ore reserves, but production remains limited. In 2023–24, the country produced 3.78 million tonnes of copper ore, showing a decline compared to earlier years. Madhya Pradesh is the top copper-producing state, followed by Rajasthan.

Despite existing reserves, mining projects require years of exploration and regulatory clearance. Globally, the average time to operationalize a new copper mine is approximately 17 years.

Growing Import Dependence

India's reliance on imports has increased. The value of copper concentrate imports doubled to ₹26,000 crore in 2023–24 compared to 2018–19.

This growing dependence has prompted India to look outward to meet its short-term needs through overseas investments.

Strategic Overseas Investments and Associated Risks

To diversify its resource base, India has expanded exploration partnerships in mineral-rich regions such as Zambia, Chile, and the DRC.

While overseas ventures offer access to essential resources, they also carry significant geopolitical and regulatory risks that must be managed carefully.

Africa's Critical Role in Global Mineral Supply

Africa holds a central position in the global critical minerals supply chain. The continent accounts for about 70% of global cobalt production and around 16% of global copper output. By 2030, the DRC is expected to emerge as the second-largest copper supplier globally.

India's Expanding Presence in Africa

India's Ministry of Mines has intensified efforts to establish partnerships across several African countries, including the DRC, Tanzania, Mozambique, and Rwanda. These efforts are part of India's broader strategy to secure long-term access to key resources that power clean energy and digital technologies.

Isolationism

Context

The "America First" policy under President Donald Trump revived interest in isolationism—focusing on national over global interests.

What is Isolationism?

It is a foreign policy that avoids political and military alliances and global engagements. The idea traces back to George Washington's farewell address.

Historical Examples

- U.S. avoided European wars in the 19th century.
- Rejected joining the League of Nations post-World War I.
- Passed Neutrality Acts in the 1930s to avoid foreign conflicts.

Current Trend

A moderate version called "restraint" is gaining popularity, avoiding both extreme isolation and heavy interventionism.

Russia-Ukraine War – Issue and Analysis

The beginning and escalation

The Russia-Ukraine war began in 2014 after Ukraine's Revolution of Dignity led to the removal of pro-Russian President Viktor Yanukovich. Taking advantage of the political transition, Russia annexed Crimea through a controversial referendum. The conflict then spread to Eastern Ukraine, where pro-Russian separatists, backed by Moscow, declared independence in Donetsk and Luhansk.

Although a ceasefire was attempted under the Minsk II Agreement in 2015, violations continued. The situation escalated sharply in February 2022 when Russia launched a full-scale invasion under the pretext of a "special military operation."

Russia's territorial ambitions and annexation strategy

Since 2014, Russia has gradually expanded its territorial control within Ukraine. The most aggressive moves came in 2022 when four more regions were annexed, even without full control. The territories claimed and annexed by Russia include:

- Crimea (2014)

- Donetsk (2022)
- Luhansk (2014 and reaffirmed in 2022)
- Zaporizhzhia (2022)
- Kherson (2022)

These annexations were accompanied by referendums that lacked transparency and international legitimacy. Ukraine and most global actors continue to reject these claims as illegal occupations.

Strategic and economic importance of annexed territories

Each annexed region holds significant strategic or economic value:

- Crimea provides Russia with a vital naval base and Black Sea access.
- Donetsk and Luhansk are industrial hubs rich in coal and steel.
- Zaporizhzhia hosts Europe's largest nuclear power plant.
- Kherson connects to Crimea and controls critical water supply routes.

These territories also serve as military buffers, reinforcing Russia's sphere of influence in the region.

Changing frontlines and new dimensions of conflict

Despite early military gains, Russia faced strong resistance. In late 2022, Ukraine regained parts of Kharkiv and Kherson through counteroffensives. In 2024, Ukrainian forces crossed into Russia's Kursk region, briefly capturing territory and prisoners.

Currently, Russia controls large portions of Donetsk and Luhansk and smaller parts of Zaporizhzhia and Kherson. The battle lines remain active, and Ukraine refuses to cede any part of its internationally recognized territory.

International response and shifting alliances

The war has transformed the global diplomatic landscape:

- NATO expanded its footprint in Eastern Europe, with Finland joining in 2023.
- Western nations imposed sweeping sanctions on Russia and increased arms supplies to Ukraine.
- Russia deepened ties with China, North Korea, and Iran.
- India maintained a neutral stance, advocating dialogue while balancing strategic interests.

Cold War-style rivalries have resurfaced, dividing the world into opposing political blocs.

Humanitarian impact and documented war crimes

The war has created a severe humanitarian crisis. Over 7 million Ukrainians have become refugees. Civilian casualties continue to rise due to bombings and drone strikes across cities.

International organizations have documented numerous war crimes, especially by Russian forces. These include:

- The Bucha massacre near Kyiv
- Torture, rape, and mass executions
- Forced deportations and denial of Ukrainian citizenship
- Destruction of civilian infrastructure

War crimes on both sides have been reported, but the scale of violations by Russia has drawn greater international condemnation.

Russia's strategic motivations

Analysts point to several goals behind Russia's invasion:

- Prevent Ukraine from joining NATO and the EU
- Reassert dominance over former Soviet territories
- Gain access to critical minerals and energy routes
- Undermine Western democratic influence near its borders

Ukraine's resource wealth and geographical location make it a critical geopolitical prize.

Hybrid warfare and information battles

This war is not just military; it includes:

- Cyberattacks on Ukrainian infrastructure
- Disinformation campaigns promoting false claims of Nazism or genocide
- State censorship and propaganda within Russia
- Psychological operations to influence both domestic and global opinion

The media war has become as significant as the battlefield.

Role of religion and ideological narratives

The Russian Orthodox Church, especially Patriarch Kirill, has endorsed the invasion. Framing it as a spiritual mission to protect "Holy Russia," the Church portrays Ukrainians and Belarusians as integral to Russian identity. This religious narrative supports nationalism and state policies.

Current status and future outlook

As of early 2025, the war continues:

- Russia holds over 18% of Ukrainian territory
- Ukraine is conducting limited strikes within Russian borders
- Civilian areas and critical infrastructure remain targets
- Peace negotiations remain stalled

The war has escalated into a prolonged struggle with global implications. It challenges international norms and tests the resilience of democratic alliances.

Conclusion

The Russia-Ukraine War is more than a territorial conflict. It is a clash over sovereignty, identity, global order, and the limits of power in the modern world. The choices made by global actors today will shape the principles of international relations for decades to come.

Philadelphi Corridor

Context

The ongoing conflict between Israel and Hamas has intensified, with ceasefire efforts led by the US, Egypt, and Qatar yielding limited results. A key point of dispute is Israel's control over the Philadelphi Corridor, a narrow but strategically vital strip of land along the Gaza-Egypt border. This corridor plays a crucial role in security, border control, and regional diplomacy.

Understanding the Philadelphi Corridor

The Philadelphi Corridor—also known as the Philadelphi Route—is a narrow strip of land about 14 km (8.7 miles) long and 100 meters wide. It runs along the entire southern edge of the Gaza Strip, forming the border with Egypt. This area includes the crucial Rafah Border Crossing and stretches from the Mediterranean Sea to the Kerem Shalom crossing with Israel.

Historical Evolution

- **1979 Camp David Accords:** The corridor was defined during the peace agreement between Egypt and Israel. It became a demilitarized zone with limited Israeli military presence allowed.
- **2005 Israeli Disengagement:** Israel withdrew its military and civilians from Gaza. The Philadelphi Accord signed with Egypt allowed Egypt to deploy 750 border guards along its side of the corridor to prevent smuggling and infiltration.
- **2007 Hamas Takeover:** After seizing control of Gaza, Hamas also gained de facto control of the Palestinian side of the corridor.
- **May 2025 Offensive in Rafah:** As part of renewed military operations, Israeli forces reclaimed control of the Philadelphi Corridor.

Strategic Importance

The Philadelphi Corridor is a focal point of regional security for several reasons:

- It is the primary land route used to prevent the smuggling of weapons, ammunition, and other contraband between Egypt and Gaza.
- It separates the Palestinian city of Rafah from its Egyptian counterpart, splitting families and communities along the border.
- It includes underground tunnels used historically by Hamas and other groups to transport materials and people, posing a significant security challenge to Israel and Egypt.

The Philadelphi Accord

In September 2005, Israel and Egypt signed the Philadelphi Accord—formally titled “Agreed Arrangements Regarding the Deployment of a Designated Force of Border Guards Along the Border in the Rafah Area.” Key highlights include:

- Egypt was authorized to deploy 750 border guards on its side of the corridor.
- The objective was to prevent weapons smuggling, infiltration, and criminal activity.
- Operations were to be coordinated between Egypt and Israel, with provisions for intelligence sharing.
- The corridor and the adjacent Area C were designated as demilitarized zones—only police forces, not heavy weaponry, were allowed.
- The Rafah Crossing was to function as the main passage for Palestinians with ID cards, with limited exceptions.

The agreement contains 83 clauses detailing responsibilities, permitted equipment, and cooperative measures to ensure border security.

Destruction and Transformation

Following a series of militant attacks in Egypt’s Sinai region in 2014, Egypt undertook a campaign to eliminate smuggling tunnels.

It destroyed thousands of buildings on its side of Rafah, displacing residents and drastically changing the landscape. By 2020, more than 7,000 structures had been demolished to create a security buffer.

Current Status and Global Implications

As of early 2025, Israel has expressed strategic interest in reclaiming full control over the Philadelphi Corridor amid its ongoing military operations in Gaza. Reports suggest intensified Israeli activities near Rafah and the border zone, but Egypt has voiced concerns about any unilateral actions that may violate prior agreements or impact the humanitarian situation in Gaza.

The corridor remains central to regional tensions—its control influences the dynamics of arms smuggling, the Israel-Egypt-Gaza relationship, and broader peace efforts. Global actors, including the US, Egypt, and Qatar, continue to push for de-escalation, highlighting the need for balancing security with humanitarian responsibilities.

U.S.–Taiwan Relations- Issue and Analysis

Context

The evolving relationship between the United States and Taiwan recently gained renewed attention when the U.S. State Department revised its official factsheet on Taiwan. One key change was the quiet removal of the statement that the U.S. "does not support Taiwan independence." Though subtle, this change marked a significant shift in American rhetoric, signaling a more flexible approach. The update also emphasized U.S. support for Taiwan's participation in international organizations wherever applicable. This move provoked a strong reaction from China, which described it as a "serious deviation" from past U.S. policy and accused Washington of emboldening pro-independence sentiments in Taiwan.

Historical Roots and Policy Evolution

The Taiwan issue traces its origin to the end of the Chinese Civil War in 1949, which resulted in two rival governments. The Communist Party established the People's Republic of China (PRC) on the mainland, while the defeated Republic of China (ROC) relocated to Taiwan. Initially, the U.S. recognized the ROC in Taiwan as the legitimate government of all China. However, diplomatic tides shifted in 1972 when U.S. President Richard Nixon visited China and signed the Shanghai Communiqué, acknowledging the "One China" stance without endorsing either side's claim. In 1979, formal recognition was extended to the PRC, ending official ties with Taiwan.

To preserve ties with Taiwan, the U.S. Congress passed the Taiwan Relations Act (TRA) in 1979. This legislation provided a legal framework for continued cooperation with Taiwan in the fields of security, trade, and culture. It also authorized arms sales to Taiwan for self-defense and affirmed that any attempt to determine Taiwan's future by non-peaceful means would be viewed as a matter of grave concern.

Diplomatic Engagement Without Formal Ties

Although the U.S. does not have an embassy in Taiwan, it maintains a strong presence through the American Institute in Taiwan (AIT), while Taiwan functions in the U.S. through the Taipei Economic and Cultural Representative Office (TECRO). These institutions handle all the practical aspects of bilateral relations, including arms sales, cultural exchanges, and trade cooperation.

China's Stance and Increasing Pressures

China views Taiwan as a breakaway province that must be reunified with the mainland, by force if necessary. In recent years, China has stepped up its pressure through military exercises near Taiwan's territory, cyberattacks, and disinformation campaigns. Additionally, China continues to isolate Taiwan diplomatically by using its influence to persuade countries to sever ties with Taipei. Today, only a handful of countries officially recognize Taiwan.

The political landscape in Taiwan has also contributed to rising tensions. The Democratic Progressive Party (DPP), which won the 2024 elections, remains committed to preserving Taiwan's de facto sovereignty and resisting Chinese influence. This has further widened the gap between Beijing and Taipei, especially in a time of growing regional and global uncertainty.

Strategic Importance of Taiwan in the Indo-Pacific

Taiwan's geographical location makes it central to security dynamics in the Indo-Pacific region. It lies along the first island chain, a strategic defense line stretching from Japan to the Philippines. This positioning makes Taiwan a critical partner in the U.S. strategy to counter China's maritime expansion and preserve freedom of navigation in the region.

Economically, Taiwan plays an outsized role in global supply chains, especially in the semiconductor industry. The Taiwan Semiconductor Manufacturing Company (TSMC) alone produces more than half of the world's advanced microchips, which are essential for a wide range of industries, including defense. As a result, Taiwan's security and economic stability have global implications.

Challenges Faced by Taiwan

Despite its technological and economic strength, Taiwan faces increasing military threats and diplomatic challenges. Its security heavily depends on continued U.S. support, and any wavering in Washington's policy could expose Taiwan to greater risks. The island also struggles with limited international recognition and participation in global forums, often blocked by China's objections.

India's Balancing Act with Taiwan

India, like most countries, adheres to the One China policy and does not maintain official diplomatic relations with Taiwan. However, practical engagement between the two sides has grown steadily. India's diplomatic affairs with Taiwan are handled by the India-Taipei Association (ITA), while Taiwan operates the Taipei Economic and Cultural Center (TECC) in New Delhi.

Although political ties remain limited, trade, academic exchange, and technological cooperation have seen a gradual rise. In 2016, the India-Taiwan Parliamentary Friendship Forum was established, though it has not been very active. Still, there is scope for deepening ties in sectors like electronics, pharmaceuticals, and education.

Conclusion

U.S.-Taiwan relations have evolved significantly, especially in light of rising tensions between the U.S. and China. The latest shift in American policy reflects growing global concern about China's assertiveness and Taiwan's strategic role in countering it. For countries like India, navigating this complex geopolitical environment involves balancing diplomatic sensitivities with national interests, while continuing to explore areas of mutual benefit with Taiwan.

India and EU Accelerate Free Trade Agreement Talks

Context

India and the European Union (EU) have significantly intensified efforts to finalize a long-awaited Free Trade Agreement (FTA). Originally launched in 2007 and stalled for years, the negotiations resumed in 2021 with an ambitious goal to conclude the agreement by the end of 2025. The renewed momentum is driven by shifting global dynamics, economic priorities, and strategic calculations on both sides.

Revival of Long-Stalled Negotiations

- **Early Roadblocks:** Talks that began in 2007 were hindered by disagreements over market access, tariffs, intellectual property, and mobility.
- **Fresh Momentum Since 2021:** The revival reflects the urgency to diversify global supply chains and reduce economic dependence on singular markets like China.
- **2025 as a Target Year:** Both sides are aiming to sign the deal by the end of 2025, with several technical and high-level discussions underway.

Geopolitical and Economic Drivers

- **Uncertainty in U.S. Trade Policies:** With former U.S. President Donald Trump signaling high tariffs (up to 25%) on EU goods, both India and the EU are preparing to rebalance trade ties independently.
- **Response to Global Power Shifts:** The growing assertiveness of China and Russia, especially in the Indo-Pacific region, has reinforced the need for like-minded democracies to collaborate.
- **Strategic Realignment:** A successful FTA would not just be about trade—it would represent a shared commitment to open markets, democratic values, and strategic autonomy.

Scope and Significance of the India–EU FTA

- One of the most comprehensive agreements under discussion globally.
- Expected to enhance cooperation in:
 - Market access for goods and services
 - Technology transfer and innovation
 - Sustainable development and climate policies
 - Investment protection and regulatory cooperation
 - Data governance and digital infrastructure

Why India Matters to Europe

1. **A Rapidly Expanding Economy:** India is currently the world's fifth-largest economy and is projected to surpass both Germany and Japan by the end of this decade. With a large consumer base and growing middle class, India is essential for Europe's long-term economic diversification.
2. **Manufacturing and Supply Chain Potential:** As global companies look for China+1 alternatives, India emerges as a leading destination. India's growing infrastructure, young workforce, and government incentives (like PLI schemes) add to its appeal for European industries.
3. **Energy and Climate Partnership:** India's fast-growing energy demand positions it as a key player in global energy transition efforts. With a strong focus on solar and wind power, India aligns well with the EU's Green Deal and climate goals.

4. A Stabilizing Force in the Indo-Pacific: As the world's largest democracy, India plays a vital role in promoting peace and stability in the Indo-Pacific region. Strengthening India-EU ties complements Europe's broader Indo-Pacific strategy, especially amid rising tensions with authoritarian regimes.

Changing Perceptions

In the past, Europe's policy outlook on India was shaped by challenges such as poverty, coal dependency, and bureaucratic red tape. However, recent developments have dramatically shifted this narrative:

- India is no longer seen merely as a developing nation seeking aid.
- It is now viewed as a rising power, a digital innovator, and a global manufacturing hub.

India's Economic and Structural Advancements

1. Strong Economic Fundamentals

- Sustained growth of over 3% per annum since the 1990s.
- In key sectors like electronics, India has overtaken traditional export leaders like China and Japan.

2. Global Trade Integration

- Between 2007 and 2019, India's export growth rate outpaced China's.
- India has also attracted increasing FDI inflows, outperforming China in some years as a percentage of GDP.

3. Rise in Manufacturing and Start-Ups

- India is a global leader in IT services and is fast becoming a manufacturing hub for mobile phones and electronics.
- With over 100 unicorns, India has surpassed the UK and Germany in tech start-up creation.

4. Digital and Infrastructure Leap

- Over 50% of new energy generation in India comes from renewable sources.
- The country's fintech revolution has enabled millions to access banking services via platforms like UPI.

5. Key Reforms Boosting Growth

- **Make in India:** Aims to promote domestic manufacturing and attract foreign investment.
- **PLI Schemes:** Incentivizes investment in priority sectors such as solar energy, electric vehicles, and semiconductors.

Persistent Challenges in India's Growth Story

Despite its achievements, India faces several structural hurdles:

- **Income Disparities:** Growth has not been equitable across all regions or populations.
- **Employment Needs:** With 10 million new entrants to the labor force annually, job creation remains critical.
- **Governance and Implementation Bottlenecks:**
 - Dominance of public sector banks
 - Slow judicial process
 - Regulatory red tape and bureaucratic inefficiencies

What the FTA Means for Europe

The India-EU FTA is not just about economics. It is a cornerstone for future-proofing Europe's trade and strategic interests in Asia.

- **Strategic Autonomy:** A strong India offers Europe a credible alternative to Chinese supply chains.
- **Climate Goals:** India's green transition can complement EU climate targets.
- **Market Access:** India's growing economy and youth-driven consumption provide vast opportunities for European exporters.

India-EU Trade Snapshot

- The EU is India's largest merchandise trading partner, with bilateral trade at USD 135 billion in FY 2024.
- India is the EU's 10th largest trading partner, while the EU is India's second-largest export destination, after the U.S.
- Services trade reached USD 53 billion in 2023, with India exporting services worth USD 30 billion to the EU.

Conclusion

As the global order becomes more uncertain, India and the European Union are redefining their economic and strategic engagement. The proposed Free Trade Agreement, if signed, will serve as a pillar of cooperation in trade, climate action, digital economy, and geopolitics. For both regions, it represents not just economic opportunity, but a vision for a balanced, rules-based global future.

Khalistan Issue

Context

India has strongly condemned a recent security breach involving External Affairs Minister S. Jaishankar in London, blaming Khalistani extremist elements for threatening Indian diplomatic interests. The Ministry of External Affairs (MEA) criticized the UK for its failure to ensure the security of Indian officials and highlighted growing concerns about the activities of Khalistan supporters abroad.

What is the Khalistan Movement?

The Khalistan Movement is a separatist campaign that seeks to create an independent Sikh homeland, Khalistan, carved out of India's Punjab region. The term "Khalistan" means "Land of the Khalsa" or "Pure Land." While it has minimal support within India today, the movement remains active in parts of the Sikh diaspora, especially in Canada, the United Kingdom, and Australia.

Historical Background

- **Sikh Empire and Early Autonomy Demands:** Sikhism emerged in the 15th century, and by the early 19th century, the Sikh Empire under Maharaja Ranjit Singh ruled much of northwestern India with Lahore as its capital. After the British annexed Punjab in 1849, Sikh political autonomy was curtailed, and discussions about greater autonomy slowly began taking shape.
- **Insurgency and Violence in the 1980s:** The Khalistan movement became violent in the 1980s, gaining momentum under the leadership of Jarnail Singh Bhindranwale, who advocated for a separate state. His followers occupied the Golden Temple, leading to Operation Blue Star in 1984, when the Indian Army

stormed the shrine to flush out militants. In retaliation, Prime Minister Indira Gandhi was assassinated by her Sikh bodyguards, sparking nationwide anti-Sikh riots that caused thousands of deaths.

In 1985, Khalistani extremists were responsible for the Air India bombing, killing 329 people, marking the worst terrorist attack in Canadian history.

The armed insurgency in Punjab gradually declined by the early 1990s after extensive counter-terror operations.

- **Territorial Claims and Separatist Goals:** While some Khalistani groups demand an independent Punjab, others expand their territorial claims to include parts of Haryana, Himachal Pradesh, and Pakistani Punjab. However, the movement today finds little resonance among Sikhs in India, who overwhelmingly support India's constitutional framework.

Why is the Movement Stronger Abroad?

Many Khalistani supporters fled India during and after the 1984 unrest, settling in countries like Canada, the UK, and the U.S., where they established political and community influence. These diaspora groups have continued to push the Khalistan narrative, often using democratic freedoms in host countries to promote separatist agendas. The 2020–21 farmer protests briefly revived Khalistani slogans abroad, but the movement failed to gain ground domestically.

Canada's Controversial Role

Canada is home to the largest Sikh population outside India. Some Sikh politicians and organizations there have expressed support for the Khalistan movement, causing friction with India. Diplomatic tensions have intensified over allegations of inaction by Canadian authorities on extremist activities targeting Indian interests.

Underlying Issues Behind Sikh Grievances

- **Partition and Reorganization:** The 1947 Partition divided Punjab between India and Pakistan, displacing millions and creating lasting communal tensions. In 1966, Punjab was reorganized on linguistic lines, with the creation of Haryana and Himachal Pradesh. Many Sikhs felt politically and culturally marginalized by this division.
- **Operation Blue Star and 1984 Riots:** The 1984 attack on the Golden Temple and the subsequent anti-Sikh riots in Delhi left deep emotional scars. These events are central to Sikh resentment and a critical source of distrust toward the Indian state.
- **Economic Disparities and Water Disputes:** Although Punjab played a leading role in the Green Revolution, many Sikhs felt they did not benefit equitably from the agricultural boom. Additionally, the diversion of Punjab's river waters to other states remains a contentious issue, further fueling regional discontent.

Conclusion

The Khalistan movement today is largely dormant within India but continues to persist abroad, posing diplomatic challenges. While addressing security concerns related to extremist elements, India must also engage with historical grievances to maintain harmony. International cooperation is crucial to curb the spread of separatist ideologies, ensure the safety of diplomatic personnel, and prevent foreign soil from being used to incite violence against India.

India-Nepal Educational Ties

Context

The tragic suicide of a Nepali woman student at KIIT, Bhubaneswar, allegedly due to harassment, sparked protests by Nepali students, who accused the university of neglecting their complaints. In response, KIIT ordered all Nepali students to vacate the campus, triggering widespread outrage and diplomatic intervention from Nepal. Following backlash, the university withdrew the order and resumed normal academic activities.

Historical Ties in Education

- Since the Rana regime, Nepalese students have pursued education in Indian cities like Banaras, Patna, Gorakhpur, Darjeeling, and Dehradun.
- Colonial Influence: Nepal's first higher education institution, Tri-Chandra College (1918), was initially affiliated with Calcutta University and later Patna University.
- **Higher Education Development in Nepal:**
 - **1959:** Establishment of Tribhuvan University, Nepal's first university.
 - **1971:** Implementation of the New Education System Plan (NESP) aimed at "Nepalising" the education system.
- Despite Nepal's educational advancements, Indian institutions remain a preferred choice due to their quality education, established reputation, and strong cultural connections.

Nepalese Students in India

- Nepalese students make up the largest group of foreign students in India.
- In 2021-22, they accounted for 28% of all foreign students, the highest among 170 countries.
- Over 180 universities across India enroll Nepalese students, with engineering and technology courses in IITs, IISc, and private institutions like KIIT being the most sought-after.

Impact on Indo-Nepal Relations

- **Indo-Nepal Peace Treaty of 1950:**
 - **Article 6** ensures equal treatment for nationals of both countries.
 - **Article 7** allows for free movement, residence, trade, and education between the two nations.
- KIIT's eviction order was seen as a violation of these treaty provisions, raising diplomatic concerns and reinforcing the need for greater sensitivity in handling bilateral educational ties.

Raisina Dialogue 2025

The 10th edition of the Raisina Dialogue was held in New Delhi. This international conference was co-hosted by the Ministry of External Affairs and the Observer Research Foundation (ORF). The Prime Minister of New Zealand, Christopher Luxon, was the chief guest.

The theme for 2025 was "Kālachakra – People, Peace, and Planet," reflecting on the interconnectedness of human welfare, global peace, and environmental balance. Over 125 countries participated, making it a major platform for discussing issues like climate change, digital governance, global health, and international cooperation.

India renewed its demand for a global ban on Sikh For Justice (SFJ)

Context

During the Raisina Dialogue 2025, India renewed its demand for a global ban on Sikh For Justice (SFJ), especially urging action from countries like the United States and New Zealand.

Who is SFJ?

- Sikh For Justice is a pro-Khalistan secessionist group.
- It was banned in India in 2019 under the Unlawful Activities (Prevention) Act (UAPA).
- SFJ claims to advocate for an independent Sikh state called Khalistan.

Activities of SFJ Abroad

- SFJ has conducted so-called referendums in cities like London, Rome, Geneva, and Brampton since 2021.
- These events attract diaspora support but are seen by India as provocative and destabilizing.
- India alleges that SFJ is not just ideological but is actively inciting violence and radicalizing youth, with alleged links to Pakistan's ISI.

India's Global Concern and Demand

- India wants SFJ to be designated as a terrorist group by major countries, especially those in the Five Eyes alliance — the U.S., U.K., Canada, Australia, and New Zealand.
- India has argued that banning SFJ globally could also lead to a UN Security Council listing under Resolution 1373, which targets groups promoting terrorism.
- If the U.S. designates SFJ as a Foreign Terrorist Organization, it would:
 - Freeze the group's financial assets
 - Restrict travel and movement of members
 - Enable prosecution under terrorism laws

Challenges in Global Ban

- Many Western nations still view SFJ as a fringe group, not a serious threat.
- This perception leads to limited or no action despite India's repeated appeals.
- India warns of the risk of repeating past mistakes — especially citing the 1985 Air India bombing.
- That bombing was allegedly linked to Khalistani extremists in Canada, and India believes Canadian inaction at that time enabled the attack.

About the Khalistan Movement

- The Khalistan movement advocates for an independent Sikh homeland carved out of Punjab.
- The idea gained momentum after the 1947 Partition, with tensions escalating in the 1970s and 1980s.

Key Events:

1. Operation Blue Star (1984):

- The Indian Army stormed the Golden Temple to remove separatist leader Jarnail Singh Bhindranwale.
- This deeply hurt Sikh sentiments.

2. Aftermath:

- Prime Minister Indira Gandhi was assassinated by her Sikh bodyguards.

➤ This led to anti-Sikh riots and a prolonged period of insurgency in Punjab.

3. Air India Bombing (1985):

- An Air India plane was bombed mid-air, killing 329 people, most of them Canadians.
- It was linked to Khalistani extremists based in Canada.

Present Status of Khalistan Movement

- **In India:** The movement has lost popular support and remains largely dormant.
- **Abroad:**
 - It still receives backing from small segments of the Sikh diaspora in countries like Canada, the U.K., the U.S., and Australia.
 - India remains concerned about external attempts to revive separatist sentiments.

Conclusion

India's global campaign against SFJ reflects its broader concerns about terrorism, foreign interference, and diaspora radicalization.

A coordinated international effort, especially involving major democracies, is essential to counter extremist groups misusing freedom of expression to fuel separatist agendas.

India's Push for UNSC Reform – Issue and Analysis

Context

India has once again highlighted the urgent need to reform the United Nations Security Council (UNSC), emphasizing the changing global realities and the evolving nature of threats faced by peacekeeping forces.

Key Highlights of India's Stand

India stressed that UN peacekeepers are increasingly exposed to threats from non-state actors, armed groups, and terrorists. To protect them, India called for ensuring their safety and delivering justice in cases of crimes against peacekeepers. India also underlined the importance of modernising peacekeeping operations by incorporating advanced technologies such as surveillance tools, communication systems, and data analytics.

To meet the expectations of such operations, India recommended that peacekeeping missions be adequately funded and resourced according to their mandates. India also called for a more inclusive approach by involving troop-contributing countries in framing mandates, making the process more adaptive and responsive.

India also showcased its commitment to peacekeeping through training initiatives at the Centre for UN Peacekeeping (CUNPK) in New Delhi, where modern peacekeeping skills are imparted to personnel.

About the UNSC

The United Nations Security Council (UNSC) was established in 1945 to maintain global peace and security. It consists of 15 members—five permanent members with veto powers (China, France, Russia, the United Kingdom, and the United States) and ten non-permanent members elected for two-year terms. The Council is headquartered in New York.

Need for Reform

The existing structure of the UNSC does not reflect present-day geopolitical and demographic realities. Many regions, including Africa, Latin America, and South Asia, remain underrepresented or entirely unrepresented.

The use of veto power by permanent members has often blocked meaningful interventions, as seen in conflicts such as Ukraine and Gaza. The inability of the Council to act decisively in global crises has affected its credibility and effectiveness.

The power imbalance caused by the veto privilege creates a perception of inequality and limits the legitimacy of UNSC decisions. With major global changes since 1945, there is growing consensus that the composition and decision-making mechanisms of the Council must evolve.

Why India Deserves a Permanent Seat

India accounts for nearly 18% of the global population and is among the world's top economies. Its rising economic and strategic influence, particularly in the Indo-Pacific, makes it a vital player in global security. India has also contributed significantly to UN peacekeeping missions and consistently supported multilateralism and democratic values.

Furthermore, India enjoys broad diplomatic support from various regions and powerful member states, underlining its global acceptance as a potential permanent member.

Challenges in Reforming the UNSC

The biggest obstacle to reform is the veto power held by current permanent members, who are unlikely to support changes that might dilute their authority. In addition, geopolitical rivalries—especially in Asia—complicate consensus-building. For example, China has consistently opposed India's permanent membership.

Reforming the UNSC would require amending the UN Charter, which involves a complex ratification process by two-thirds of the UN member states, including all permanent members. These procedural hurdles make meaningful reform difficult to achieve.

Way Forward

The global community must acknowledge that the legitimacy and effectiveness of the UNSC depend on how well it reflects present realities, not the power dynamics of 1945. Reform is critical for the Council to remain relevant in dealing with 21st-century challenges such as climate change, terrorism, and cyber threats.

Although difficult, dialogue and consensus-building efforts must continue. India's strong case for permanent membership should be supported by nations advocating for fairness, inclusivity, and global equity in decision-making.

India-China Seek to Stabilize Relations

Context

India and China held talks under the Working Mechanism for Consultation and Coordination (WMCC) on border affairs, focusing on restoring normalcy in bilateral ties and enhancing cooperation.

Highlights of the Dialogue

The Indian delegation engaged with Chinese officials to explore ways of rebuilding trust and gradually stabilizing relations. Discussions included proposals for reviving direct flights, resuming the Kailash Manasarovar Yatra, and promoting people-to-people exchanges. These efforts followed recent remarks by Prime Minister Narendra Modi, who highlighted the global importance of India-China cooperation for peace and prosperity.

The meeting marks another step in a “step-by-step” approach towards normalisation, especially as 2025 marks 75 years of India-China diplomatic ties.

Evolution of India-China Relations

The Panchsheel Agreement of 1954 laid the foundation for peaceful coexistence between India and China. However, relations have been marked by ups and downs, especially following the 1962 war and recent clashes in areas like Galwan Valley and Doklam. India’s policy responses included banning Chinese apps, limiting investments, and halting travel.

Despite these tensions, China became India’s largest trading partner in 2024, surpassing the U.S., with over \$100 billion in imports. Mechanisms like the Special Representatives dialogue and WMCC have continued to function, aiming to reduce friction, especially along the Line of Actual Control (LAC).

Major Areas of Concern

1. Unresolved Border Dispute

The India-China border stretches over 3,400 km, with longstanding disputes in areas such as Arunachal Pradesh, Sikkim, and Ladakh. Clashes in Galwan (2020) and recent incidents in the northeast continue to test ties.

2. Military Infrastructure Build-Up

Both countries have invested heavily in strengthening their border infrastructure, including roads, helipads, and airstrips for quick troop deployment.

3. China’s Belt and Road Initiative (BRI)

India opposes BRI, particularly the China-Pakistan Economic Corridor (CPEC), which passes through Indian-claimed territory in Pakistan-occupied Kashmir.

4. Trade Imbalance

India’s trade with China remains skewed, especially in sectors like electronics and solar technology, making self-reliance a challenging goal.

5. China's Influence in India's Neighborhood

China’s growing presence in the Indian Ocean Region is a strategic concern:

- **Sri Lanka:** Strategic control over Hambantota port.
- **Nepal:** Infrastructure investment, including airports.
- **Bangladesh:** Economic ties and infrastructure loans.
- **Myanmar:** Stronger ties with the junta and expansion of the China-Myanmar Economic Corridor.

India’s Strategic Responses

1. Strengthening Defense Partnerships

India has deepened defense cooperation with countries like France, Germany, and Southeast Asian nations, while enhancing naval alliances.

2. Quad Engagement

India has become a proactive member of the Quad (India, U.S., Japan, Australia), using it as a platform to counterbalance China’s influence.

3. Alternative to BRI

India has joined initiatives like the India-Middle East-Europe Economic Corridor to provide alternative connectivity routes.

4. Maritime Security

India is enhancing its naval presence and investing in Indo-Pacific security collaboration, including with Japan and ASEAN countries.

5. Reducing Trade Dependency

Efforts are underway to promote domestic manufacturing in key sectors to reduce dependence on Chinese imports.

Way Forward

India and China must prioritize resolving the border issue, particularly through sustained diplomatic and military-level talks. Confidence-building measures, disengagement at friction points like Depsang and Demchok, and avoidance of future stand-offs are necessary.

At the same time, continued diplomatic engagement through regional and global forums like BRICS, SCO, and the G20 will be key in managing strategic rivalry while exploring areas of cooperation. Balancing assertive national interests with mature diplomacy can help build a more stable, if not fully friendly, bilateral relationship in the future.

Black Sea: A Strategic Waterbody**Context**

Russia and Ukraine agreed to suspend military strikes in the Black Sea, facilitated by the U.S.

About the Black Sea

It is bordered by six countries: Bulgaria, Romania, Ukraine, Russia, Georgia, and Turkey. It connects to the Mediterranean via the Bosphorus and Dardanelles. Its deeper layers are oxygen-deprived, affecting marine life. It is crucial for trade, security, and energy transport.

Free Movement Regime (FMR) with Myanmar**Context**

India plans to revoke the Free Movement Regime (FMR) due to rising security concerns.

About FMR

- Introduced in 1968 for cross-border tribal ties.
- Allows visa-free travel up to 16 km across the India-Myanmar border.

Reasons for Scrapping

- Rise in drug trafficking and insurgent camps.
- Refugee influx due to political unrest in Myanmar.
- Increased Chinese influence post-2021 coup.

India-Myanmar Ties

- Shared border with four Indian states.
- Strategic and cultural ties.
- Connectivity projects: Kaladan and IMT Trilateral Highway.

Way Forward

- Ensure border security without hurting ethnic relations.
- Public awareness on regional dynamics.
- Enhance border infrastructure and cooperation.

49 Indian Nationals Face Death Sentences Abroad

The recent execution of Shahzadi Khan in the UAE has sparked concern over Indian citizens facing capital punishment overseas. According to the Ministry of External Affairs (MEA), 49 Indians are currently on death row.

Country-wise Breakdown

- UAE: 25 Indians
- Saudi Arabia: 11 Indians
- Remaining in other nations in smaller numbers

Diplomatic and Legal Process

- MEA aids during arrest, trial, and pardon plea stages.
- Post-sentencing, embassies can only forward family petitions for pardon.
- In Gulf nations, “blood money” may offer clemency but is not guaranteed.

Challenges and Success Stories

- Embassies often lack timely updates, especially under authoritarian regimes.
- India’s successful interventions include saving 8 ex-naval personnel in Qatar and Gurdip Singh in Indonesia.
- These instances underline the role of diplomacy in securing justice for Indian nationals abroad.

HISTORY, ART AND CULTURE

Project PARI

The Ministry of Culture has taken a new step to promote public art in India through the Public Art of India (PARI) project. This initiative is being implemented by the Lalit Kala Akademi and the National Gallery of Modern Art.

Project PARI celebrates India's diverse artistic traditions. Over 200 artists have showcased regional art forms such as Phad, Thangka, Gond, and Warli.

The goal of PARI is to blend India's cultural heritage with modern themes and stimulate public conversation through art. As of now, the project is active only in Delhi.

Indo-U.S. Cultural Property Agreement

India and the United States have signed a Cultural Property Agreement (CPA) to prevent the illegal export of Indian antiquities.

This agreement is in line with Article 9 of the 1970 UNESCO Convention. It allows nations to seek international support to protect their cultural heritage.

- The agreement is preventive in nature, with no fixed timelines or targets.
- So far, 588 antiquities have been returned to India from the US, including 297 in 2024 alone.

India also cooperates with UNESCO and INTERPOL on cultural heritage issues.

Jadayaswamy Festival Celebrated in Tamil Nadu

The Jadayaswamy festival was recently observed in Tamil Nadu by the Badagas community of the Nilgiris district.

- The Badagas is a tribal group, reside in settlements known as "Hattis" and speak the Badugu language.
- The festival is held in Jackanarai village near Kotagiri and is dedicated to the deity Jadayaswamy.
- It symbolizes the community's faith and their ancestral traditions.
- As part of the celebration, people from eight villages gather for a procession to the temple and perform a ritual firewalk.

Kaliyattam Festival

- Kaliyattam is also known as Theyyam. It is a vibrant ritualistic festival celebrated in the Malayalam month of Kumbham, which falls between February and March. It is mainly observed in the northern regions of Kerala. The festival is a dramatic blend of dance, music, and divine expression, performed to honour Goddess Kali.
- Theyyam performers wear elaborate costumes and striking facial makeup. These performers are believed to be possessed by the deity during the ritual earning it the title "dance of gods" or "dance of the divine".

People seek blessings and guidance from them. This unique form of worship is often held in sacred groves called *Kavus* and in ancestral homes known as *tharavadus*. It forms a crucial part of Kerala's living traditions and intangible cultural heritage.

Jnanpith Award 2024

- Vinod Kumar Shukla is a renowned poet and writer from Raipur, has been chosen for the 59th Jnanpith Award for 2024. He is the first writer from Chhattisgarh to receive this prestigious honor.
- His literary journey began in 1971 with the poetry collection *Lagbhag Jaihind*. He went on to write notable works like *Deewar Mein Ek Khidki Rehti Thi* and *Naukar Ki Kameez*, the latter adapted into a critically acclaimed film.
- The Jnanpith Award is India's highest literary recognition. It honors writers in any of the 22 official Indian languages—and since 2013, English as well. It includes a citation, a bronze replica of Vagdevi, and a cash prize of ₹11 lakh.
- The award was conceptualized by Rama Jain to recognize literary excellence and promote Indian languages and literature.

Shaheed Diwas

Context

Every year on March 23, India observes Shaheed Diwas to honour Bhagat Singh, Rajguru, and Sukhdev. On this day in 1931, they were executed by the British in Lahore Jail. The Prime Minister and citizens across the country pay tribute to their sacrifice.

Historical Background

In 1928, the British government sent the Simon Commission to India. The commission had no Indian members. This sparked widespread anger across the country. In Lahore, Lala Lajpat Rai led a peaceful protest against it. During the protest, the police used force. Superintendent James A. Scott ordered a brutal lathi charge. Lala Lajpat Rai was seriously injured and died later from his wounds.

Bhagat Singh, Rajguru, and Sukhdev decided to avenge his death. Their original target was James Scott, but in a case of mistaken identity, they ended up killing British officer John Saunders. The act brought them into the spotlight.

Trial and Execution

After the incident, they were arrested and charged with murder. The trial was swift and heavily publicized. Despite widespread public support and pleas for clemency, the British sentenced them to death. On March 23, 1931, all three were hanged. They were very young — Bhagat Singh and Sukhdev were 23, Rajguru was 22.

Revolutionary Ideals

The three revolutionaries were members of the Hindustan Socialist Republican Association (HSRA). This was a radical group that believed in direct action against colonial rule. They wanted to overthrow the British through armed struggle and mass awakening.

Bhagat Singh was deeply inspired by socialist and Marxist ideologies. He studied the works of Karl Marx, Lenin, and Trotsky. He believed that revolution was not just about political freedom but also about social justice.

One of his most famous acts was the bombing of the Central Legislative Assembly in 1929. Along with Batukeshwar Dutt, Bhagat Singh threw non-lethal bombs in the assembly chamber. They shouted slogans and surrendered willingly. The aim was to protest against repressive laws, not to harm anyone.

Legacy and Significance

Shaheed Diwas is a reminder of their courage, vision, and sacrifice. Their story continues to inspire generations of Indians. They did not fight for personal gain or power but for the dignity and freedom of the nation. Their actions lit a spark of revolutionary thought among India's youth.

They are remembered not only for their bravery but also for their strong commitment to justice and equality. Shaheed Diwas urges us to reflect on the values they stood for — patriotism, courage, and social change.

Lapis Lazuli

Lapis lazuli is a deep blue gemstone known for its beauty and historical significance. The stone gets its brilliant blue color from the mineral lazurite. The golden sparkles in it come from pyrites, while other minerals like diopside and sodalite are also present in small amounts.

This rock has been mined for over 6,000 years, especially in Afghanistan's Badakhshan province. Though it is also found in Chile, Russia, and the US, the finest quality comes from Afghanistan.

Lapis lazuli was highly valued in ancient times. Traders imported it to India as early as 1000 BC. It has been found in archaeological sites of the Indus Valley Civilization like Harappa and Mohenjo-daro. Egyptians used it for jewellery and eye makeup. During the Renaissance in Europe, artists crushed it to make ultramarine – a costly blue pigment used in paintings.

Remembering the Third Battle of Panipat

Context

Maharashtra Chief Minister Devendra Fadnavis recently defended the Marathas' role in the Third Battle of Panipat. He called it a symbol of bravery rather than just a defeat.

About the Battle

The Third Battle of Panipat was fought on January 14, 1761. It was one of the largest and bloodiest battles of the 18th century.

The Maratha Empire, led by Sadashivrao Bhau, fought against the Afghan ruler Ahmad Shah Durrani. Durrani had support from the Rohillas and other allies.

Course of the Battle

Initially, the Marathas saw some success. But they were later surrounded and suffered from food shortages. Eventually, the Afghans won the battle decisively.

It is estimated that around 60,000 to 70,000 Maratha soldiers were killed. The battle ended their expansion into northern India for nearly a decade.

Aftermath and Recovery

Despite the defeat, the Marathas were not crushed completely. Under the leadership of Peshwa Madhavrao, they regained control over northern India by 1771. This comeback reflected their strong political and military resilience.

Conclusion

The Third Battle of Panipat is often remembered for its heavy loss. However, it also reflects the Marathas' unmatched courage and their ability to recover even after a major setback.

Reviving Vikramshila University

Context

After Nalanda University was re-established, efforts are now being made to revive Vikramshila University. This ancient centre of learning was once a major hub of Buddhist education in India.

Historical Background

Vikramshila University was founded by King Dharmapala of the Pala dynasty. It was established during the late 8th to early 9th century AD.

The university was located in present-day Bhagalpur district of Bihar.

Importance of Vikramshila

Vikramshila became one of the most important centres of Buddhist learning in medieval India. It ranked second only to Nalanda University.

The university was especially known for teaching Tantric Buddhism. This was widely practiced during the Pala period in both Buddhist and Hindu traditions.

Destruction

Vikramshila University was destroyed in the late 12th century. It was attacked by Bakhtiyar Khalji, a military commander under Qutb-ud-din Aibak.

This attack marked the decline of many major Indian universities of that time.

Notable Scholars

One of the most famous scholars from Vikramshila was Atisa Dipankara. He played a key role in reviving Buddhism in Tibet during the 11th century.

Conclusion

Vikramshila University holds great historical and cultural value. Its revival could restore India's legacy as a global centre of learning and promote heritage tourism in Bihar.

Political statements on Rana Sanga

Context

- A political statement sparked debate by labeling Rana Sanga, a celebrated Rajput ruler, as a “traitor” for allegedly inviting Babur to India.

First Battle of Panipat (1526)

- Babur vs. Ibrahim Lodi
- Despite being outnumbered, Babur used superior artillery and tactics to defeat Lodi.
- This battle ended the Delhi Sultanate and marked the beginning of Mughal rule in India.

About Rana Sanga (1482–1528)

- Also known as Maharana Sangram Singh, he ruled Mewar and aimed to resist Delhi Sultanate and Mughal expansion.
- **Capital:** Chittor
- **Territory:** Parts of modern Rajasthan, Gujarat, and MP
- **Cultural Contribution:** Patron of arts and literature; supported Malik Muhammad Jayasi, author of *Padmavat*.

Battle of Khanwa (1527)

- Fought between Rana Sanga and Babur.
- **Aim:** To expel Mughals from India.
- **Outcome:** Rana Sanga was defeated due to Babur’s artillery, but remains a symbol of Rajput valor and unity.

Sarhul Festival

Context

The Sarhul festival is a significant cultural event for Adivasi communities in Jharkhand and the Chhotanagpur region. Celebrated in spring, it honours the Sal tree and symbolizes a profound connection with nature, seasonal cycles, and agricultural life. It reflects both spiritual devotion and ecological harmony.

Significance of the Sal Tree

The Sal tree (*Shorea robusta*) is considered sacred in Adivasi belief systems. It is believed to be the abode of Sarna Maa, the protective village deity. The tree symbolizes the union of the Sun and Earth, fundamental to sustaining life, and serves as a key spiritual and ecological symbol in the festival.

Structure of the Festival

Sarhul is observed over three days:

- The first day is for preparations. The village priest, called the *pahan*, collects Sal flowers and purifies homes and *Sarna Sthals* (sacred groves), which are adorned with red and white flags.
- On the second day, main rituals are performed. These include the sacrifice of a rooster, offerings of Sal flowers to Sarna Maa, and traditional songs and dances such as *Jadur* and *Gena*.
- The final day features a community feast. Villagers prepare and share traditional food and *handia* (rice beer). The *pahan* blesses the people, reinforcing a sense of unity.

Community Involvement

Sarhul promotes collective participation. Youth engage in ceremonial fishing and gather resources for the feast. The festival fosters community bonding, social harmony, and cultural continuity through shared meals, rituals, and blessings.

Historical Context

Originally rooted in hunting traditions, Sarhul evolved into an agricultural celebration, mirroring the Adivasis' gradual shift to settled farming. As tribal communities faced displacement during colonial times, Sarhul spread to regions like Assam, Nepal, and Bhutan, adapting to local contexts while preserving its essence.

Contemporary Celebrations

In present times, Sarhul is observed by several tribes such as the Munda, Santal, and Oraon. Each community integrates its own traditions. Beyond being a religious event, Sarhul today represents Adivasi identity, environmental consciousness, and solidarity in the face of cultural and socio-political challenges.

President Murmu visits Dholavira

Context

The President of India recently visited the UNESCO World Heritage Site, Dholavira, in Gujarat.

About Dholavira

Dholavira was discovered in 1968 by archaeologist Jagat Pati Joshi. It is situated on Khadir island in the Kachchh district of Gujarat, near the Tropic of Cancer. Dholavira was a prominent southern urban center of the Indus Valley Civilization (Harappan Civilization), flourishing between 3000-1500 BCE. It is the sixth-largest known Harappan site. In 2021, it was inscribed as India's 40th UNESCO World Heritage Site.

Architectural Highlights

Dholavira is known for its remarkable urban planning. The city comprises a fortified Castle with an adjoining fortified Bailey and Ceremonial Ground, along with a fortified Middle Town and Lower Town. It is distinguished from other Indus Valley sites by its extensive use of stone rather than bricks. The city also featured advanced water management systems, including reservoirs situated east and south of the Citadel.

Economic Importance

Dholavira served as a significant trading center. It engaged in extensive trade of copper, shells, semi-precious stones, and timber. Its strategic location allowed trade connections with Mesopotamia (modern-day Iraq), Magan (Oman), and other contemporary cities of the Indus Valley. Dholavira primarily exported finished products such as beads, metals, and pottery.

Reasons for Decline

Several factors contributed to Dholavira's decline. Climate change leading to increased aridity and the drying up of the Saraswati River severely impacted its agriculture and water supply. Additionally, the collapse of Mesopotamian civilization disrupted trade networks, affecting economic stability. Over time, the Rann of Kutch, initially navigable, turned into a mudflat due to desertification, further isolating the city.

25th Anniversary of Jahan-e-Khusrau Sufi Music Festival

Context

Prime Minister Narendra Modi recently attended the 25th edition of *Jahan-e-Khusrau*, a globally renowned Sufi music festival held in 2025. The event also featured *TEH Bazaar*, an exhibition of India's One District-One Product (ODOP) crafts, celebrating India's artistic and spiritual diversity.

About Jahan-e-Khusrau Festival

Jahan-e-Khusrau is an international Sufi music and cultural festival that brings together musicians, poets, and dancers from across the world. It was founded in 2001 by filmmaker and artist Muzaffar Ali under the Rumi Foundation. The festival is dedicated to the legendary Sufi poet and musician, *Amir Khusrau*, celebrating his spiritual and cultural legacy through music and poetry.

Amir Khusrau: The Soul of Sufi Legacy in India

Amir Khusrau was a disciple of the revered Chishti saint Nizamuddin Auliya. Initially serving royal courts, Khusrau gained prominence during the Delhi Sultanate, serving under five Sultans. His poetry in Persian and Hindavi earned him titles like '*Amir*' and '*Tuti-yi-Hind*' (Parrot of India). His contributions to Indian classical music, particularly the creation of new ragas and styles like *khayal*, and the development of *qawwali*, have left a lasting impact. He is also credited with shaping the Hindavi language, which later evolved into Hindi and Urdu.

Understanding Sufism

Sufism is the mystical branch of Islam that emphasizes inner purity, divine love, and devotion to God. Originating in the Middle East between the 9th and 10th centuries, it reached India through Arab traders by the 11th century. It integrates elements from Persian, Turkish, Arabic, Urdu, Punjabi, and Sindhi cultures. Sufi practice focuses on personal connection with the divine through prayer, meditation, and music, aiming to transcend materialism and ego.

Sufism's Influence in India

Sufism found a rich and receptive ground in India. Saints like *Moinuddin Chisti*, *Nizamuddin Auliya*, *Amir Khusrau*, and later *Kabir* and *Guru Nanak Dev* played a pivotal role in shaping Indian spirituality. Their teachings often blended Hindu Bhakti traditions with Islamic mysticism, fostering religious harmony and inclusivity.

Major Sufi Orders in India

1. **Chisti Order** – Introduced by Khwaja Muin-ud-din Chisti in Ajmer; known for simplicity and love-based devotion.
2. **Suhrawardi Order** – Focused on knowledge and spiritual awareness, more prominent in Punjab and Multan.
3. **Naqshbandi Order** – Emphasized silent meditation and strict adherence to Shariah law; conservative in nature.
4. **Qadri Order** – Popular during Mughal rule; promoted the idea of divine unity (*Wahdat-al-Wajood*). Key followers included Jahanara and Dara Shikoh.

Role of Music in Sufi Practice

Music in Sufism is not merely art but a form of spiritual discipline. It is used to enter deep meditative states, creating a path toward divine union.

- **Sama** – A form of spiritual concert, often involving poetry and dance.
- **Whirling Dervishes** – Symbolic spinning dance representing the soul's journey to God, tied to concepts like *fana* (self-annihilation) and *baqa* (eternal presence in God).
- **Poetry and Devotion** – Sufi poets such as *Rumi*, *Hafiz*, and *Bulleh Shah* wrote emotionally profound verses that are sung during gatherings.
- **Dhikr (Remembrance)** – Music enhances this repetitive chanting of God's name, fostering emotional purification.

Cultural and Social Impact in India

Sufism helped bridge gaps between different religious communities. Sufi shrines became centers of communal harmony, drawing both Hindu and Muslim devotees. Their teachings upheld the universal values of peace, love, and compassion, resonating with the Indian ethos of *Vasudeva Kutumbakam* — the world as one family.

Important Terms in Sufism

- **Tariqa**: The spiritual path or method followed by Sufis.
- **Pir / Sheikh**: A spiritual guide or master.
- **Murid**: A devoted disciple of a Sufi teacher.
- **Khanqah**: A retreat or lodge for Sufi practices.
- **Wali**: A friend or saint of God.
- **Qalb**: The spiritual heart.
- **Muraqaba**: Meditative contemplation of God's presence.

Conclusion

The Jahan-e-Khusrau Festival is not just a cultural event but a spiritual reminder of India's pluralistic heritage. It revives the message of Sufi saints who envisioned a society grounded in unity, love, and tolerance. Celebrating 25 years in 2025, the festival continues to act as a bridge between the past and the present, the temporal and the eternal.

Battle of Karnal

Context

The Battle of Karnal, fought on February 24, 1739, marked a decisive turning point in Indian history. It exposed the declining military strength of the Mughal Empire and paved the way for its eventual collapse.

Background

Nadir Shah, the founder of the Afsharid dynasty in Iran, had already defeated multiple powers across Central Asia. After securing Kandahar, he crossed the Khyber Pass and advanced swiftly through northern India, taking control of Mughal vassal territories on his way to Delhi.

The Battle

At Karnal, Nadir Shah's army of 55,000 decisively defeated the 300,000-strong Mughal force led by Emperor Muhammad Shah 'Rangila'. The battle lasted only three hours. Nadir Shah's disciplined troops, equipped with mounted musketeers and modern tactics, overwhelmed the poorly coordinated Mughal forces.

Following the victory, he entered Delhi, looted its treasures, and took away the famous Peacock Throne and the Koh-i-Noor diamond.

Impact on the Mughal Empire

Although Nadir Shah spared Muhammad Shah and restored his throne, the damage was irreversible. The imperial treasury was drained, and the Mughal Empire's political authority was permanently undermined. Over time, regional powers grew more assertive, and by 1857, the British had established control, formally ending Mughal rule.

Reasons for Mughal Decline

The empire was already suffering from deep-rooted issues. Excessive taxation, corruption, religious intolerance under Aurangzeb, and administrative inefficiency weakened the state's foundation. The Battle of Karnal only accelerated its disintegration.

INTERNAL SECURITY & DEFENCE

INSV Tarini – Navika Sagar Parikrama II: A Historic Maritime Expedition

Introduction

Navika Sagar Parikrama II is a monumental maritime expedition undertaken by the Indian Navy, aiming to circumnavigate the globe aboard INSV Tarini, a 56-foot sailing vessel. What makes this voyage exceptional is that it is crewed by two women officers, symbolizing India's rising commitment to gender equality in the defence and maritime sectors. The expedition is a testament to:

- India's expanding maritime reach and naval capability
- The courage, resilience, and skill of Indian women naval officers
- The promotion of ocean sailing and India's maritime self-reliance
- Global outreach through cultural exchange and diplomacy

Port Stanley: The Third and Most Challenging Stop

On 18 February 2025, INSV Tarini reached Port Stanley, the capital of the Falkland Islands, marking the successful completion of the third leg of its voyage.

Strategic and Historical Significance of Port Stanley:

Located in the Southern Atlantic Ocean, it serves as a vital stop for oceanic navigation. As a British Overseas Territory, the port has geopolitical relevance, especially in historical naval conflicts like the Falklands War. Reaching Port Stanley affirms India's capabilities in enduring and navigating one of the world's most treacherous maritime routes.

Overcoming Formidable Challenges

The journey from New Zealand to the Falkland Islands tested the limits of endurance, seamanship, and courage. Key challenges included:

- **Three Cyclonic Weather Systems**

INSV Tarini navigated through three cyclones, battling high winds, extreme turbulence, and unpredictable ocean currents.

- **Point Nemo – Oceanic Pole of Inaccessibility**

Known as the most isolated point in the ocean, over 2,688 km from any landmass. Emergency support is nearly impossible in this region. Interestingly, the nearest humans are often astronauts aboard the International Space Station (ISS).

- **Drake Passage**

Located between South America and Antarctica, this waterway is infamous for its violent storms and massive swells. It is considered one of the world's most dangerous sailing routes.

- **Cape Horn**

The southernmost tip of South America, historically known as a graveyard for ships. Crossing this point highlights INSV Tarini's world-class build and the crew's advanced training.

Strategic Objectives of the Expedition

A. Gender Empowerment in the Armed Forces

Navika Sagar Parikrama II is India's bold step toward encouraging women in defence. It sends a powerful message of inclusion and resilience, inspiring the youth, especially women, to consider naval careers.

B. Maritime Diplomacy and Global Goodwill

The expedition acts as a floating ambassador, strengthening India's bilateral maritime ties. Through port calls and community engagements, it fosters cultural understanding and India's soft power diplomacy.

C. Oceanic Research and Environmental Insights

INSV Tarini collects valuable data for studies related to:

- Climate change and marine biodiversity
- Weather pattern tracking for navigation and forecasting
- Understanding navigational challenges in remote maritime corridors

D. Celebrating India's Maritime Heritage

Reinforces India's ancient seafaring traditions—from the Indus Valley dockyards to Chola naval expeditions. Promotes the ideals of Atmanirbhar Bharat, especially in shipbuilding and defence technologies.

Community Engagement in Port Stanley

The crew of INSV Tarini actively engaged with the local population in Port Stanley. These interactions included:

- Sharing experiences of their journey
- Promoting women's roles in maritime domains
- Strengthening cultural and diplomatic bonds between India and local communities

Such engagements underscore the strategic use of naval assets for diplomacy and people-to-people connections.

The Road Ahead: Final Legs of the Expedition

After Port Stanley, INSV Tarini is scheduled to sail toward Cape Town, South Africa, marking the penultimate leg of its circumnavigation. The final destination will be Goa, India, where the voyage began.

Key Expected Outcomes:

- Encouraging greater female participation in India's armed forces
- Advancing India's climate and ocean research initiatives
- Cementing India's reputation as a capable, responsible maritime power

About INSV Tarini

Built by Aquarius Shipyard Limited in Goa and commissioned into the Indian Navy on 18 February 2017. Designed for long-distance ocean sailing under extreme weather. Named after the Tara-Tarini shrine in Odisha, symbolizing courage and protection. This is its second global circumnavigation, following the first Navika Sagar Parikrama in 2017–18.

Key Expedition Statistics

- Total Distance: 23,000 nautical miles
- Duration: 240 days
- Route: Covers 4 continents, 3 oceans, and 3 major capes
- Divided into 5 voyage legs, with stopovers for resupply and diplomatic outreach

Route Overview

1. Goa to Fremantle (Australia)
2. Fremantle to Lyttleton (New Zealand)
3. Lyttleton to Port Stanley (Falkland Islands)
4. Port Stanley to Cape Town (South Africa)
5. Cape Town to Goa (India)

Point Nemo: An Extraordinary Feat

Reaching Point Nemo, the most remote location in the ocean, stands out as a unique achievement. First explored by the Spanish ship Hespérides in 1999, it is also known as the "spacecraft graveyard." Decommissioned satellites and space stations are directed to crash here, minimizing risks to populated areas.

Conclusion

Navika Sagar Parikrama II is more than a maritime expedition—it is a symbol of India's naval strength, scientific ambition, and progressive spirit. By successfully sailing through some of the world's most perilous waters, INSV Tarini and her crew have etched their place in history.

This expedition not only furthers India's geopolitical outreach and oceanic research but also reinforces the nation's narrative of women-led excellence and global cooperation in the 21st century.

SCIENCE AND TECHNOLOGY

Aditya-L1 Captures Unprecedented Solar Flare Details**Context**

India's Aditya-L1 mission has achieved a breakthrough by capturing the first-ever image of a solar flare 'kernel' in the lower layers of the solar atmosphere — specifically, the photosphere and chromosphere. This marks a major milestone in space-based solar observation and deepens our understanding of solar dynamics.

About Aditya-L1

Aditya-L1 is India's first space mission dedicated entirely to studying the Sun. It was launched in September 2023 aboard ISRO's PSLV C-57 rocket. In January 2024, the spacecraft was successfully positioned in a halo orbit around the Earth-Sun Lagrange Point 1 (L1), located about 1.5 million kilometers from Earth. This strategic location enables continuous, uninterrupted observation of solar activities without interference from eclipses or Earth's atmosphere.

Aditya, which means "Sun" in Sanskrit, and L1, referring to the Lagrange Point 1, symbolizes the mission's central aim — to monitor the Sun from a stable vantage point in space.

Significance of Lagrange Point 1

L1 is a gravitationally stable point between the Earth and the Sun. A satellite positioned here remains in constant alignment with both, making it ideal for monitoring solar phenomena in real time. Aditya-L1, from this position, can provide early warnings about solar storms and flares that might impact satellites, power grids, and communications on Earth.

Scientific Payloads on Board

The mission carries several advanced instruments designed to study the Sun's atmosphere and magnetic activities:

- **Solar Ultraviolet Imaging Telescope (SUIT):** Captures high-resolution images in 11 near-ultraviolet (NUV) bands to study various layers of the Sun.
- **Solar Low Energy X-ray Spectrometer (SoLEXS):** Detects low-energy X-ray emissions, particularly during solar flares.
- **High Energy L1 Orbiting X-ray Spectrometer (HEL1OS):** Monitors high-energy X-rays to analyze powerful flare events.

Breakthrough Discovery

One of the most significant achievements of Aditya-L1 so far is its ability to observe the 'kernel' — the central region of a solar flare — in the Sun's lower atmosphere. These observations help scientists link the initial brightening in the chromosphere and photosphere with later heating in the outer solar corona. This supports long-standing theories that localized magnetic reconnection and energy release near the solar surface drive flare activities higher up.

Understanding Solar Flares

A solar flare is a sudden explosion of energy caused by tangling, crossing, or reorganizing magnetic field lines near sunspots. These flares release radiation across the electromagnetic spectrum, affecting Earth's ionosphere and sometimes damaging satellites or causing power grid disturbances.

Solar flares consist of charged particles and radiation, and their sudden bursts of energy have far-reaching implications for space weather forecasting. Studying these phenomena is vital for protecting technological infrastructure on Earth and in orbit.

Importance of the Mission

Aditya-L1 fills critical gaps in global solar observation. The correlation it has established between lower-atmosphere brightening and coronal heating offers key insights into the origins of solar flares. The mission enhances India's capacity to understand and predict space weather, which is essential for satellite communication, navigation systems, and astronaut safety.

This mission positions India alongside global space leaders in heliophysics and sets the foundation for future space weather monitoring and solar research.

Giloy

Context

Giloy (*Tinospora cordifolia*) has gained renewed attention for its medicinal properties, especially post-COVID, with a 376.5% surge in related research.

About Giloy

Giloy is a native climber found across tropical India. In Ayurveda, it is revered as 'Amrita' or the 'elixir of life' for its health-enhancing effects. It contains compounds like alkaloids, steroids, and glycosides, found in its stem, root, and leaves.

Health Benefits

It is known for its anti-inflammatory, anti-diabetic, antioxidant, hepatoprotective, anti-stress, and immunomodulatory effects. Cultivation is widespread in states like Uttar Pradesh, Bihar, and West Bengal.

Tiangong Space Station

Context

Pakistan has partnered with China to train astronauts for missions to the Tiangong space station.

About Tiangong

China's Tiangong Space Station, completed in 2022, operates in low Earth orbit at around 450 km altitude. It can accommodate three astronauts for extended periods and has an expected lifespan of 15 years. It supports space research in microgravity, like the International Space Station (ISS), and allows modular upgrades.

Amazon's 'Ocelot' Quantum Computing Chip

Context

Amazon Web Services (AWS) has unveiled 'Ocelot', a prototype quantum chip that reduces error correction costs by up to 90%.

Key Features

The chip integrates silicon layers with:

- 5 data qubits (Cat qubits)
- 5 buffer circuits for stabilization
- 4 error-detection qubits
- Tantalum-based oscillators for superconducting performance

Quantum Error Correction

Unlike classical bits, quantum qubits are fragile. Cat qubits, inspired by Schrödinger's Cat, help reduce susceptibility to external disturbances, making quantum computing more stable and efficient.

Sources and Health Effects of PM2.5

Context

A recent study in the Indo-Gangetic Plain, particularly in northern India, analyzed the sources and health impacts of PM2.5.

Understanding PM2.5

PM2.5 consists of fine particulate matter with diameters less than 2.5 micrometers. Due to their tiny size, these particles easily penetrate deep into human lungs, causing serious health issues. Primary sources include combustion activities, industrial emissions, and vehicular pollution.

Major Sources in Northern India

In Delhi, PM2.5 primarily arises from ammonium chloride and organic aerosols related to vehicular emissions, residential heating, and fossil fuel oxidation. In other areas, ammonium sulfate, ammonium nitrate, and biomass-burning-derived organic aerosols dominate. Organic aerosols from incomplete combustion of biomass (e.g., cow dung used for heating and cooking during winters) significantly contribute to high PM2.5 oxidative potential, surpassing levels found in European and Chinese cities.

Health Impacts

Exposure to PM2.5 is linked to respiratory diseases (like asthma and chronic obstructive pulmonary disease), cardiovascular diseases (such as heart attacks), neurological disorders, and premature death. The World Health Organization recommends maintaining annual average PM2.5 levels below $5 \mu\text{g}/\text{m}^3$ to reduce health risks.

Link between High Selenium in Wheat and Hair Loss

Context

A joint investigation by ICMR and AIIMS linked excessive selenium in wheat supplied through the Public Distribution System (PDS) to hair loss incidents in Shegaon taluka.

About Selenium

Selenium is an essential mineral required for various body functions, including thyroid hormone metabolism, DNA synthesis, and protection against oxidative damage. It occurs naturally in soil and groundwater, where plants absorb it. However, excessive selenium intake (selenosis) can cause adverse effects, notably hair loss. The recent case in Maharashtra points towards selenosis from wheat consumption.

Ultra-Conserved Elements (UCEs) in DNA

Context

Scientists recently identified Ultra-Conserved Elements (UCEs) in DNA that have remained unchanged for over 80 million years.

About UCEs

UCEs are DNA segments conserved across diverse species such as humans, rodents, chickens, and fish. They play a critical role in regulating gene expression rather than coding proteins directly. In the Tra2b gene, for instance, UCE acts as a "poison exon," preventing excess protein production crucial for fertility. Any alteration in these elements could disrupt essential biological functions, explaining their evolutionary conservation.

Firefly Aerospace's Blue Ghost Lunar Mission

Context

Firefly Aerospace successfully landed its Blue Ghost lander on the Moon as part of NASA's Commercial Lunar Payload Services (CLPS) program.

Mission Highlights

Nicknamed "Ghost Riders in the Sky," Blue Ghost landed upright near Mons Latreille, aiming to support NASA's Artemis goals for sustainable lunar exploration. Equipped with advanced instruments for scientific research, it will operate for approximately one lunar day (14 Earth days). Lunar landings remain challenging due to thin atmospheres, rugged terrains, and lack of atmospheric braking.

Einstein Ring Observed by ESA's Euclid Mission

Context

ESA's Euclid mission recently spotted an Einstein Ring phenomenon in galaxy NGC 6505, located 590 million light-years away.

About Einstein Rings

Einstein Rings occur when a massive celestial body gravitationally lenses the light of a distant object, creating a distinctive circular pattern. Such phenomena offer insights into dark matter, distant galaxy characteristics, and cosmic expansion. Euclid mission aims to map universe structure, observing galaxies billions of light-years away.

Gene Therapy for Maple Syrup Urine Disease (MSUD)

Context

Researchers have developed gene therapy for Maple Syrup Urine Disease, a rare genetic metabolic disorder.

About MSUD

MSUD results from deficient enzymes failing to break down branched-chain amino acids. It leads to toxic metabolites accumulation, causing neurological issues or death. The therapy uses viral vectors to deliver functional gene copies, successfully restoring metabolic activity in lab tests, presenting promising treatment possibilities.

Planetary Parade Phenomenon

Context

A rare planetary parade occurred on February 28, 2025.

About Planetary Parades

Planetary parades are astronomical events where multiple planets align visibly in the night sky. This recent alignment involved Mercury, Venus, Mars, Jupiter, Saturn, Uranus, and Neptune, presenting a remarkable celestial spectacle.

Exercise Desert Hunt 2025

Context

The Indian Air Force conducted Exercise Desert Hunt 2025 at Air Force Station Jodhpur, Rajasthan.

Key Objectives

The exercise aimed to enhance interoperability among India's tri-service Special Forces units (Para SF, MARCOS, Garud). Operations practiced included airborne insertions, precision strikes, hostage rescue, counter-terrorism, combat free falls, and urban warfare scenarios, testing the readiness of India's elite forces under realistic conditions.

Recent Deaths Linked to Rare Hantavirus Infection

Context

Recently, some deaths have been linked to a rare but dangerous disease called hantavirus, including the death of Betsy Arakawa, wife of Oscar-winning actor Gene Hackman. Health officials confirmed that she died from a serious lung illness caused by Hantavirus, known as Hantavirus Pulmonary Syndrome (HPS). This virus usually spreads to humans when they come into contact with the droppings, urine, or saliva of infected rodents.

What is Hantavirus?

- Hantavirus is a group of viruses that can cause serious illnesses, such as Hantavirus Pulmonary Syndrome (HPS). It begins with flu-like symptoms and can lead to severe respiratory problems and death.
- It spreads through inhalation of particles from rodent droppings, urine, or saliva. It can also spread by touching contaminated materials and then touching the face.
- There is currently no specific antiviral treatment or cure.

Smart Proteins

Context

India is investing in smart protein research under the BioE3 initiative.

What are Smart Proteins?

These are sustainable alternatives to meat proteins. They are made using plant-based, fermentation, or cell-culture methods.

About BioE3 Initiative

- Launched in 2024 by the Department of Biotechnology
- Aims to support a Net Zero economy
- Promotes a circular bioeconomy

Hydrogen-Powered Fuel Cells for Reliable Power in Telecom Towers

Context

Hydrogen-powered fuel cells have been tested as a backup energy source for telecom towers.

India has taken a major step towards clean energy by using hydrogen-powered fuel cells as a backup power source for telecom towers. This eco-friendly innovation supports the country's renewable energy goals and helps provide uninterrupted mobile network services, especially in areas with unreliable electricity.

How It Works

- Hydrogen is fed into the fuel cell where it is split into electrons and protons. Electrons generate electricity, while protons combine with oxygen to form water and heat.

- Hydrogen is the lightest element and highly abundant. It is non-toxic, colorless, and highly combustible.

Why This Innovation Matters

India has over a million telecom towers, many of which are located in remote areas where grid electricity is weak or unavailable. These towers often rely on diesel generators for backup, which are costly to run and harmful to the environment due to their carbon emissions.

Clean and Efficient Alternative

Hydrogen fuel cells, especially Proton Exchange Membrane Fuel Cells (PEMFC), offer a cleaner and more efficient solution. These fuel cells generate electricity through a chemical reaction using hydrogen and oxygen, producing only water as a by-product. They have fast start-up times, run at lower temperatures, and require less maintenance compared to diesel generators.

Support from Policy Makers

The Telecom Regulatory Authority of India (TRAI) has encouraged the use of renewable energy in telecom operations. Its 2012 policy calls for at least 50% of rural and 33% of urban towers to shift to green power sources. The hydrogen fuel cell system directly supports this policy.

A Step Toward Sustainable Telecom

As India's digital infrastructure expands, the demand for reliable and sustainable power will grow. Hydrogen fuel cells offer a promising solution that ensures steady service while cutting down on carbon emissions. This innovation could revolutionize how telecom towers are powered, promoting green energy use in one of the country's fastest-growing sectors.

Exercise KHANJAR-XII

Context

India and Kyrgyzstan are holding the 12th edition of their joint special forces exercise.

- Held annually in both countries
- Focus: Counter-terrorism and special ops in high-altitude and urban areas
- Promotes military cooperation and knowledge sharing

Space-Tech for Good Governance – Issue and Analysis

Context

India's space technology is increasingly becoming a powerful tool in enhancing governance. At the recent "Good Governance" Conclave, the Minister of Science and Technology emphasized how satellite-based applications are transforming planning, monitoring, and decision-making in public administration.

What is Space Technology?

Space technology refers to tools and systems used in outer space operations. These include Earth observation satellites, GPS and navigation systems, communication satellites, and technology for human or robotic exploration. These technologies generate geospatial data that governments use for better service delivery and project management.

India's Expanding Space Sector

- **Rapid Growth:** India's space economy is expanding rapidly. Over 300 startups are now active in the sector, and India's space budget has tripled in recent years.
- **Future Goals:** Major projects like the Gaganyaan mission (India's first human spaceflight) are set for trials by 2025. Plans include a Moon mission by 2040 and the creation of the Bharat Antariksh Station by 2035.
- **Expected Growth:** The space economy is projected to grow from \$8 billion to \$44 billion in the coming years.

How Space Technology Supports Governance

1. Disaster Management

- ISRO's National Remote Sensing Centre (NRSC) helps identify flood-prone areas, map disaster damage, and plan recovery efforts.
- NDMA uses satellite data for coordinating relief work during natural calamities.

2. Agriculture and Rural Development

- Programmes like FASAL use satellite-based tools to predict crop yields and weather patterns.
- Satellite imaging helps manage soil health and optimize irrigation practices.

3. Land and Property Records

- Initiatives like the Swamitva Yojana utilize satellite mapping for updating land records, resolving property disputes, and promoting transparency in land ownership.

4. Environmental Monitoring

- ISRO's "Bhuvan" platform tracks deforestation, water bodies, and land-use changes.
- Oceansat satellites help monitor coastal changes, sea temperatures, and ocean pollution.

5. Security and Border Surveillance

- Satellites provide crucial data for monitoring India's borders and sensitive regions.

6. Boosting E-Governance

- Satellite communication systems support Digital India by extending online services to remote areas, promoting administrative efficiency.

Challenges in Implementing Space-Tech for Governance

- **High Costs:** Building, launching, and maintaining satellites require huge investments.
- **Infrastructure Gaps:** Limited ground-based support and lack of trained personnel, especially in rural areas, hinder effective use.
- **Data Interpretation Issues:** Poor analysis or misreading of space data can mislead policy decisions.

- **Privacy Risks:** Citizens may face surveillance concerns with increasing use of satellite monitoring.
- **Environmental Concerns:** Frequent launches contribute to space debris and atmospheric pollution.

Way Forward

1. **Strengthen Infrastructure:** Build better ground systems and data centers to handle space data efficiently.
2. **Private Sector Collaboration:** Encourage innovation and cost reduction by working with startups and private firms.
3. **Increase Satellite Coverage:** Deploy diverse satellite types to monitor agriculture, urban growth, forests, and disaster zones.
4. **Promote Research:** Invest in research to tailor space solutions to Indian governance needs.
5. **Ensure Sustainability:** Adopt eco-friendly launch practices and reduce space debris.

Conclusion

India's space technology has immense potential to transform governance, enhance transparency, and deliver better services to citizens. With strategic investments, stronger public-private partnerships, and sustainable practices, space-tech can become the backbone of smart and responsive governance.

Blue Ghost: A Milestone in Private Lunar Exploration

Context:

Blue Ghost, a private spacecraft developed by Firefly Aerospace, has successfully landed on the Moon. This makes it the second commercial vehicle to achieve a functional lunar landing.

Mission Highlights:

- **Developer:** Firefly Aerospace, a private U.S.-based space company.
- **Objective:** Explore the Mare Crisium (Sea of Crises), a large lunar basin.
- **Significance:** It is the first privately developed lander to land intact and remain functional.
- **NASA Partnership:** The mission is part of NASA's Artemis program under a public-private model.
- **Landing Details:** The lander touched down safely after spending two weeks in lunar orbit.

Importance of the Mission:

- **Technological Advancement:** Shows private companies can now build reliable lunar landers.
- **Gateway to Deep Space Missions:** The Moon could be a base for future missions to Mars and beyond.
- **Revival of Lunar Missions:** Blue Ghost brings new momentum to lunar exploration after decades.

Euclid Space Telescope Captures an Einstein Ring

Context:

The European Space Agency's Euclid telescope has captured an image of an Einstein ring—an extremely rare cosmic event caused by gravitational lensing.

What is an Einstein Ring?

- **Gravitational Lensing:** Light from a distant galaxy is bent by a massive galaxy in the foreground, forming a ring of light.
- **Example:** In this case, a galaxy 42 billion light-years away was lensed by NGC 6505, which lies 590 million light-years from Earth.

Scientific Significance:

- **Rare Phenomenon:** Offers valuable data for astrophysical studies.
- **Understanding Dark Matter:** The bending of light helps trace the presence of invisible dark matter.
- **Natural Telescope:** The lens magnifies distant galaxies, making them easier to study.

About Euclid Mission:

- **Launched:** July 1, 2023.
- **Duration:** 6 years.
- **Key Goals:** Map dark matter and dark energy via two main techniques—gravitational lensing and baryon acoustic oscillations.

Hypertrichosis (Werewolf Syndrome): A Rare Disorder

Context:

Lalit Patidar from Madhya Pradesh has set a world record for the hairiest face due to hypertrichosis, also known as “werewolf syndrome.”

What is Hypertrichosis?

- **Definition:** A condition causing excessive hair growth in areas not usually hairy.
- **Types:**
 - *Generalized:* Covers the entire body.
 - *Localized:* Affects specific areas only.

Causes:

- **Congenital:** Present from birth, due to genetic mutation.
- **Acquired:** Occurs later due to cancer, hormonal disorders, or medications.

Impacts:

While not life-threatening, it can lead to significant psychological and social challenges. Only about 50 cases have been recorded globally since medieval times.

AI Kosha and GPU Access Portal: Boosting India's AI Mission

Context:

The Ministry of Electronics and IT has launched AI Kosha and the IndiaAI Compute Portal to expand AI innovation in India.

AI Kosha Platform:

- A centralized repository offering:
 - Non-personal datasets for AI training.
 - Pre-built models and development tools.
 - A secure test environment for startups and researchers.
- Datasets are sourced from various government ministries.

India AI Compute Portal:

- Provides high-performance GPU access for AI development.
- Partners include NVIDIA, AMD, Intel, and AWS.
- Crucial for training large AI models and running advanced ML applications.

IndiaAI Mission: Key Focus Areas:

Launched in March 2024, it focuses on seven pillars:

1. Compute infrastructure
2. Dataset accessibility
3. AI application development
4. AI education and skills
5. Innovation hubs
6. Startup funding
7. Ethical and safe AI practices

Significance:

By democratizing data and computing resources, these initiatives will strengthen India's global position in AI development while encouraging innovation and ethical practices.

Seabed Warfare in a New Era of Geotech Conflicts

Context

As countries increasingly depend on underwater infrastructure for internet, energy, and resources, the seabed has turned into a new domain of strategic competition. Technological advancements have added a new layer to geopolitical tensions, making seabed warfare a modern reality.

What is Seabed Warfare?

Seabed warfare involves military actions carried out on or near the ocean floor. It uses advanced underwater technologies like:

- Unmanned Underwater Vehicles (UUVs)
- Remotely Operated Vehicles (ROVs)
- Autonomous Submersibles

These systems are used to target and protect key infrastructure like:

- **Undersea communication cables** that carry over 95% of global internet data
- **Oil and gas pipelines** essential for energy trade
- **Sensor networks** for defense and surveillance

Geotech Conflicts Under the Sea

Seabed warfare is part of broader geotechnological conflicts. It includes:

- **Cyber and hybrid operations** using drones or AI-driven submarines for spying or sabotage
- **Autonomous underwater systems** developed for attack or surveillance
- **Seabed militarization**, such as planting mines or offensive UUVs near strategic infrastructure

Why the Seabed Matters

The ocean floor holds critical assets:

- **Global Connectivity:** Fiber-optic cables run through the seabed, making it vital for finance, communications, and defense
- **Energy Security:** Vast reserves of oil, gas, and rare minerals lie beneath the seabed
- **Military Advantage:** Underwater networks and submarines operate for defense, making the ocean floor strategically important

Global Actors and Incidents

Several nations are now active in seabed warfare:

- **United States:** Operates Seawolf and Virginia-class submarines with seabed capabilities
- **China:** Has built deep-sea surveillance systems like the “Great Underwater Wall” in the South China Sea
- **Russia:** Submarines like *Losharik* and vessels like *Yantar* are suspected of undersea sabotage
- **NATO and Europe:** Increased focus after the 2023–2024 sabotage of Baltic Sea cables; UK and France are enhancing seabed defense
- **Incidents:** Sabotage of Nord Stream pipelines and multiple undersea cables show rising risks

India’s Strategic Moves

India is boosting its seabed presence through multiple initiatives:

- **Submarine Programs:**
 - *Project 75 & 75I* for Scorpène-class and future submarines
 - *INS Arihant*, a nuclear-powered submarine, enhances strategic capability
- **Deep Ocean Mission:** Aims to secure deep-sea resources and conduct seabed mining
- **Autonomous Underwater Vehicles (AUVs):** Deployed for both coastal and deep-sea surveillance
- **NIOT’s Role:** National Institute of Ocean Technology leads seabed monitoring research
- **QUAD Cooperation:** India partners with Quad nations to secure undersea infrastructure in the Indo-Pacific

Challenges and the Road Ahead

The future of seabed security lies in proactive steps:

- **AI-Powered Monitoring:** Use of underwater sensors and satellites for real-time tracking
- **Policy Gaps:** UNCLOS offers limited guidance; a stronger global treaty is needed
- **Defensive Tech:** Nations must invest in anti-drone systems and seabed surveillance grids

Conclusion

The seabed is no longer a neutral zone—it is a silent battlefield of modern geopolitics. As technology reshapes security concerns, nations must act swiftly to secure this hidden frontier through cooperation, innovation, and legal safeguards.

TB Champions and India's Fight Against Tuberculosis

Context

Meghalaya is training TB survivors as 'TB Champions' to support India's goal of eliminating tuberculosis (TB) by 2025.

Who are TB Champions?

- A TB Champion is a person who has recovered from TB after completing treatment.
- These individuals are trained to help current patients and spread awareness.
- The National TB Elimination Program (NTEP) has created a standard training curriculum for them.
- Self-learning modules are available online, and training can be coordinated through local NGOs or health departments.

Understanding Tuberculosis (TB)

- TB is a contagious bacterial disease caused by *Mycobacterium tuberculosis*.
- It mostly affects the lungs but can also impact the spine, kidneys, brain, and skin.
- TB spreads through the air when an infected person coughs or sneezes.
- Symptoms include a persistent cough, fever, chest pain, weight loss, and fatigue.
- It is preventable and curable with timely use of antibiotics.
- The BCG vaccine offers protection to children from severe forms of TB.

TB Situation in India

- India has the world's highest TB burden, contributing to 26% of all cases globally.
- India also accounts for 29% of TB-related deaths and 27% of multidrug-resistant TB (MDR-TB) cases.
- Despite these challenges, WHO has acknowledged India's progress, with a 17.7% decline in TB cases between 2015 and 2023.
- India aims to eliminate TB by 2025, five years ahead of the global deadline.

Key Challenges

- **Drug-Resistant TB:** MDR-TB is harder and costlier to treat.
- **Delayed Diagnosis:** Lack of modern testing tools in many rural areas.

- **Poor Health Infrastructure:** Limited access to care in remote regions.
- **Stigma:** Fear and misconceptions delay treatment seeking.
- **Private Sector Coordination:** Standardization of care across public and private health systems is needed.
- **Treatment Adherence:** Completing long treatment courses is difficult for many.
- **Vulnerable Groups:** Migrants, slum dwellers, and the poor are more exposed.

Government Initiatives

- **RNTCP (1997):** The earlier national program to control TB.
- **NTEP (2017–25):** The revised plan aims to end TB by 2025.
- **Pradhan Mantri TB Mukh Bharat Abhiyan (PMTBMBA):** Launched in 2022 for nutritional and diagnostic support to patients.
- **Universal Drug Susceptibility Testing (DST):** Ensures patients are tested for drug resistance early.
- **Ni-kshay Portal:** Tracks TB cases online to improve surveillance.
- **New Drugs:** Drugs like Bedaquiline and Delamanid are used for MDR-TB.
- **Vaccine Trials:** Vaccines like Immuvac and VPM1002 are under trial to enhance prevention.

World Tuberculosis Day 2025

- Observed on March 24 to mark the discovery of *Mycobacterium tuberculosis* by Dr. Robert Koch in 1882.
- **Theme:** “Yes! We Can End TB: Commit, Invest, Deliver.”
- It calls for global action and investment to meet the SDG target of ending TB by 2030.

Conclusion

Empowering TB survivors as ‘TB Champions’ brings a human touch to the TB elimination mission. With community participation, stronger health systems, and political commitment, India can move closer to a TB-free future.

Goa Shipyard Limited recently launched Tavasya

Goa Shipyard Limited recently launched Tavasya, the second stealth frigate under Project 1135.6 Additional Follow-on Ships. This project is a result of a 2016 agreement between India and Russia to build four Krivak-class frigates—two in Russia and two in India under technology transfer.

- The first frigate, Tripud, was launched in 2024. Both ships are expected to join the Indian Navy by 2026 and 2027. Tavasya derives its name from Bhima’s mace, symbolizing strength and power in naval combat.
- These frigates are designed for multi-domain warfare—including surface, sub-surface, and air operations. They are 124.8 meters long and 15.2 meters wide, with a draught of 4.5 meters and displacement around 3,600 tonnes. Their top speed is 28 knots.

A significant feature of both ships is the use of indigenous equipment and weapons. Tavasya marks a shift from license-built to fully indigenous warship construction, underlining India’s commitment to self-reliance in defence manufacturing.

DNA and Its Role in Identification

Context

DNA technology has become a vital tool in forensic science, especially in solving cold cases by analyzing biological evidence from past crime scenes. It helps identify individuals with a high degree of accuracy, even when only trace materials are available.

What is DNA?

Deoxyribonucleic acid, or DNA, is the genetic material found in almost all living organisms. It exists mainly in the nucleus of cells (nuclear DNA) and to a lesser extent in mitochondria (mitochondrial DNA). DNA is made up of four chemical bases—adenine (A), guanine (G), cytosine (C), and thymine (T). These bases pair specifically (A with T, C with G) to form a double-helix structure.

Each DNA strand is built from nucleotides, which include a sugar, a phosphate group, and one of the four bases. The sequence of these bases carries genetic instructions for the development and functioning of living organisms.

How DNA Helps in Identification

Every person (except identical twins) has a unique DNA sequence. This makes DNA a biological identifier, similar to a fingerprint or Aadhaar number. Each cell in the human body contains 46 chromosomes—23 from the mother and 23 from the father. Chromosomes are dense packages of DNA; for example, chromosome 3 carries 6.5% of a person's total DNA.

Polymorphisms in DNA

Polymorphisms are small variations in DNA sequences among individuals. These variations are inherited and help trace ancestry or individual identity. Two key techniques used in identification are:

1. Short Tandem Repeats (STRs): STRs are short sequences of DNA that repeat several times in a row.

Different people usually have different numbers of repeats at specific points in their DNA. Because of this variation, STRs are useful for distinguishing between individuals.

2. Polymerase Chain Reaction (PCR): PCR is a lab technique used to make millions of copies of a specific DNA segment. Even tiny DNA samples can be amplified through PCR. This method involves separating DNA strands, attaching primers, and using an enzyme (DNA polymerase) to build new strands. It takes less than an hour and is widely used in forensic labs.

Applications of DNA Fingerprinting

DNA fingerprinting is widely used in:

- **Forensic investigations** to identify criminals or victims.
- **Paternity tests** to determine biological relationships.
- **Disaster victim identification** where traditional methods fail.
- **Organ transplant matching** to reduce rejection risks.
- **Cold case resolution**, using DNA from archived crime scene materials.

Importance of DNA in Justice and Research

DNA is remarkably stable. Scientists have extracted DNA from remains thousands of years old, such as 65,000-year-old human fossils. This durability makes DNA crucial for revisiting unsolved crimes and uncovering historical human migration patterns.

In summary, DNA has transformed the way identities are verified and has become an essential component of modern justice and research systems. Its ability to preserve information over time and its uniqueness to each individual make it a powerful tool in both science and society.

Indian Navy Launches AIKEYME and IOS Sagar

Context

India has launched two new initiatives—AIKEYME and IOS Sagar—to enhance maritime cooperation in the Indian Ocean Region.

About AIKEYME

It is a joint naval exercise between India and African countries, co-hosted with Tanzania. It aims to promote regional maritime security and will take place in April 2025.

IOS Sagar

As part of the initiative, INS Sunayna will carry crews from India and nine partner nations to strengthen friendship and preparedness in the Southwest Indian Ocean.

Transgenic Organisms and Their Applications

Context

A recent statement by U.S. President Donald Trump mistakenly referred to research funding for "making mice transgender." It was later clarified that the funding supported studies involving transgenic mice used in medical research.

What are Transgenic Organisms?

Transgenic organisms are those whose genetic material (genome) has been altered by inserting DNA from another species. This is done through artificial methods in laboratories. The introduced gene, called a transgene, gives the organism new traits that it does not naturally possess.

Applications of Transgenic Organisms

- **Medical Research:** Transgenic animals, especially mice, are widely used to study human diseases such as cancer, diabetes, and genetic disorders. They help scientists understand how genes work and how treatments may affect living systems. For example, some transgenic goats and cows are modified to produce human insulin or other therapeutic proteins in their milk.
- **Agriculture:** Transgenic crops are developed to resist pests, diseases, and harsh weather conditions. These crops can also have improved nutritional content or longer shelf life. Common examples include Bt cotton and genetically modified corn.
- **Environmental Use:** In bioremediation, transgenic microbes are engineered to break down toxic substances like oil spills and heavy metals. This helps clean polluted environments efficiently.

Key Challenges

- **Ethical Concerns:** Genetic modification in animals raises issues about animal rights and welfare. Some argue that creating transgenic animals may cause harm or suffering.
- **Environmental and Health Risks:** There are concerns about the unintended effects of gene transfer to other organisms. Transgenic food may trigger allergic reactions in some individuals. Also, long-term impacts on biodiversity are still unknown.

- **Technical and Financial Barriers:** Creating transgenic organisms requires advanced technology and is expensive. It also needs specialized facilities and trained personnel.

Conclusion

Transgenic organisms hold great promise in solving problems in health, agriculture, and environment. However, their development and use must follow ethical guidelines and strict safety regulations. A balanced approach is needed to use this powerful technology responsibly.

BHIM 3.0: Advancing Digital Payments

Context

The National Payments Corporation of India (NPCI) has launched BHIM 3.0 through its subsidiary, NPCI BHIM Services Limited (NBSL). It brings new features to improve digital payment experiences for users.

About BHIM

BHIM stands for Bharat Interface for Money. It is a UPI-based mobile payment app introduced in 2016 to encourage digital transactions in India.

The app allows real-time money transfers using a simple identity such as a phone number or UPI ID. It has played a major role in expanding digital financial inclusion across the country.

Key Features of BHIM 3.0

The latest version of BHIM adds several new features to make digital payments more convenient:

- It supports over 15 Indian languages, making it more accessible to diverse users.
- The app is now optimized for low-network areas, allowing smooth transactions even with poor internet.
- New money management tools have been added, including expense tracking, bill splitting, and spending analysis.
- A new "Family Mode" allows users to manage shared expenses and assign payments within families.

Conclusion

BHIM 3.0 strengthens India's digital payments ecosystem.

By offering better user experience, language support, and financial tools, it supports the government's vision of a cashless and inclusive economy.

Artificial Intelligence (AI) Washing

Context

A growing concern in the tech industry is the trend of companies making false or exaggerated claims about their use of Artificial Intelligence (AI). This practice is now referred to as AI washing.

What is AI Washing?

The term AI washing is inspired by "greenwashing" — when companies falsely market themselves as environmentally friendly. Similarly, in AI washing, businesses promote themselves as AI-powered, when in reality they may be using basic automation or traditional computing techniques.

Common Practices

- Companies label basic software or algorithms as “AI” to attract investors and customers.
- Some overstate the capabilities of their AI systems, claiming full automation when human input is still central.
- Others promise future AI integration as if it already exists in their products or services.

Why It Matters

- **Misleading Investors:** Startups and tech firms attract funding under the false promise of AI innovation.
- **Customer Impact:** Users may overpay for products or services that do not deliver on AI promises.
- **Market Confusion:** It becomes difficult to identify truly innovative firms, affecting genuine tech progress.
- **Trust Deficit:** Over time, false claims reduce public trust in AI technologies.

Regulatory and Ethical Concerns

As AI becomes central to sectors like healthcare, education, and governance, transparency and accountability in AI claims are essential. Regulators may need to step in to define standards and monitor AI usage disclosures, especially for high-stakes applications.

Conclusion

AI washing threatens to slow down genuine innovation and erode trust in artificial intelligence. Both business ethics and regulatory oversight are necessary to ensure that claims about AI are truthful, transparent, and responsible.

Signal App and National Security Concerns

Context

A recent mishap involving the Signal app highlighted how encrypted messaging platforms can pose risks when used for sensitive communications.

What is Signal?

Signal is a secure messaging app that supports private messages, group chats, voice, and video calls. It uses end-to-end encryption, meaning only the sender and receiver can access the content.

Incident Overview

Former Trump administration officials reportedly used Signal for military-related discussions. Due to an error, a journalist was accidentally added to a group, exposing confidential information.

Privacy vs. Risk

While Signal is praised for its privacy, this incident shows that user error can compromise even the most secure platforms. It raises concerns over the appropriateness of using such apps for high-level government or defense communications.

Govt. Submits Status Report on Deepfakes

Context

The Ministry of Electronics and Information Technology (MeitY) has submitted a detailed status report to the Delhi High Court. The report addresses the increasing concerns surrounding the misuse of deepfake technology, especially in the context of elections, privacy, and public trust.

What is Deepfake Technology?

Deepfakes are synthetic media created using artificial intelligence. The term combines "deep learning" and "fake." These AI tools can manipulate images, videos, and audio to produce highly realistic but false representations. They work using Generative Adversarial Networks (GANs) — where two AI models (generator and discriminator) learn and refine outputs to mimic reality.

How Deepfakes Work

1. **Data Collection** – AI is trained using real media of a person.
2. **Feature Learning** – It captures facial movements, expressions, and voice patterns.
3. **Synthetic Media Creation** – Faces or voices are swapped or imitated.
4. **Refinement** – GANs polish the output to make it seem authentic.

Key Issues Identified in the Report

The report acknowledges the lack of a uniform definition of 'deepfakes', making regulation difficult. It highlights how women are increasingly targeted during election periods with fabricated videos, raising concerns about privacy violations and harassment.

Broader Concerns Around Deepfakes

- **Misinformation and Politics:** Deepfakes can mislead the public, spread political propaganda, and influence elections.
- **National Security Risks:** Impersonation of officials using fake audio or video can mislead citizens or spread disinformation.
- **Financial Fraud:** Cases of fake voices imitating business executives have already caused losses.
- **Privacy and Defamation:** Most disturbing is the creation of non-consensual explicit content targeting women.
- **Erosion of Trust:** When manipulated content becomes widespread, people may stop trusting legitimate news and information sources.

Existing Legal Framework and Government Response

- **IT Act, 2000:**
 - ✓ *Section 66D* deals with impersonation via electronic means.
 - ✓ *Section 67* penalizes publishing obscene material, applicable to explicit deepfakes.
- **Digital Personal Data Protection Act, 2023:** Protects individuals' data, which could apply to deepfakes using personal images or voices.
- **Intermediary Guidelines, 2021:** Requires platforms to monitor and act against harmful content like deepfakes or lose legal immunity.
- **PIB Fact Check and AI Tools:** Fact-checking and detection tools are being developed by Indian firms and researchers to flag such content.
- **Global Efforts:** India is collaborating internationally on policy and research to tackle AI misuse.

Challenges in Deepfake Regulation

The report highlights how audio deepfakes are especially hard to detect. Overdependence on social media platforms to self-regulate content also weakens enforcement. Lack of specific laws addressing deepfakes poses a hurdle for prosecution.

Recommendations by MeitY

- **Content Disclosure Norms:** All AI-generated content should carry a label indicating it is synthetic.
- **Focus on Harmful Uses:** Regulations should target malicious intent, not general creative or entertainment uses.
- **Strengthen Enforcement Capacity:** Rather than create new laws, existing enforcement bodies must be equipped to detect and act on deepfake misuse efficiently.

Conclusion

The status report underlines that deepfakes are a serious and emerging threat in India's digital space. While existing laws offer some protection, the focus must now shift to clear definitions, targeted regulations, stronger detection tools, and a coordinated enforcement strategy.

Bedmap3: Mapping Antarctica Beneath the Ice

Context

Scientists have created a new and more detailed map of Antarctica's sub-ice terrain, called **Bedmap3**.

About Bedmap3

Bedmap3 builds on the earlier Bedmap2. It includes 84 new aero-geophysical surveys, 52 million more data points, and 1.9 million km of additional measurements. This dataset fills major knowledge gaps, especially in East Antarctica's interior and along the West Antarctic coastlines.

Significance

It improves our understanding of Antarctica's subglacial landscape. It also helps model ice sheet movements, which is crucial for predicting future sea-level rise due to climate change.

India's First Indigenous MRI Machine

Context

India has developed its first indigenously made MRI machine, which will be tested at AIIMS Delhi.

About MRI

- MRI (Magnetic Resonance Imaging) is a non-invasive scan that creates detailed internal images of the body. It is safer than X-rays as it uses magnetic fields instead of ionizing radiation.

Medical Termination of Pregnancy (MTP) in India

Context

Doctors have raised ethical concerns over abortions during advanced stages of pregnancy.

About the MTP Act

The MTP Act of 1971 legalized abortions in limited cases.

- Up to 20 weeks: One or two doctors' approval based on gestation.
- 2021 Amendment: Extended the limit to 24 weeks for rape survivors, minors, and vulnerable women.
- Post-24 weeks: Requires approval from a medical board.

Arguments in Favor

- Upholds women's autonomy.
- Protects physical and mental health.
- Helps avoid suffering in cases of fetal abnormalities.
- Reduces unsafe abortions.

Arguments Against

- Fetus has a right to life.
- May have psychological effects.
- Could lead to misuse for non-medical reasons.
- Cultural and ethical concerns.

Way Ahead

- Improve access to safe abortion care.
- Enhance medical empathy and counseling.
- Encourage public dialogue to reduce stigma and ensure rights-based healthcare.

Digital Excellence for Growth and Enterprise (Dx-EDGE)

Context

The Confederation of Indian Industry (CII), in collaboration with NITI Aayog and AICTE, launched the Digital Excellence for Growth and Enterprise (Dx-EDGE) initiative.

About Dx-EDGE

- **Objective:** To help MSMEs adopt digital technologies and become competitive, future-ready, and resilient.
- **Vision:** Aligned with Viksit Bharat 2047 and NITI Aayog's Frontier Tech Hub, it seeks to bridge digital divides in the MSME sector.

Significance

- Empowers MSMEs to integrate into the digital economy.
- Supports productivity, innovation, and market access.
- Encourages adoption of frontier technologies to fuel inclusive growth.

Gaia Mission

Context

The European Space Agency (ESA) has officially ended the Gaia Mission, a major space observatory project.

Key Details

- Passivated on March 27, 2025: The spacecraft was shut down by draining its energy and placing it into a retirement orbit around the Sun.
- Launched in December 2013, Gaia's main goal was to create the most precise 3D map of the Milky Way galaxy.
- Originally named GAIA (Global Astrometric Interferometer for Astrophysics), later simplified to *Gaia*.

Scientific Significance

- Specialized in astrometry: the science of precisely measuring positions, distances, and motions of stars and celestial objects.
- Operated from Lagrange Point 2 (L2), located 1.5 million km from Earth, ensuring a stable observational position.

About Lagrange Points

- Points in space where the gravitational forces of two large bodies (like Earth and Sun) balance with the centrifugal force acting on a smaller object.

Nag Missile System (NAMIS)

Context

Ministry of Defence signed a contract for procurement of NAMIS under the Buy (Indian-IDD) category.

About NAMIS

- A third-generation, fire-and-forget Anti-Tank Guided Missile (ATGM) developed by DRDO.
- Specially designed for the Indian Army to counter armoured tanks.
- Does not require post-launch guidance, making it highly effective and reliable.

Significance

- Boosts self-reliance under the Atmanirbhar Bharat initiative.
- Enhances India's tactical strike capability against modern battle tanks.

Exercise Prachand Prahar

Context

- Indian Armed Forces conducted Exercise Prachand Prahar, a tri-service integrated exercise in high-altitude terrain of Arunachal Pradesh.

Highlights of the Exercise

- Demonstrated multi-domain operational readiness.
- Use of long-range reconnaissance aircraft, armed helicopters, UAVs, loitering munitions, and space-based assets.
- Ensured real-time situational awareness and rapid strike capability.

Related Exercise

- Follow-up to Exercise Poorvi Prahar (Nov 2024), which focused on aviation integration.

Significance

- Reaffirms India’s military preparedness along its northeastern frontier.
- Strengthens joint command capability of the Army, Navy, and Air Force.

National Gene Bank

Context

- Union Budget 2025–26 announced the creation of a second National Gene Bank (NGB) under “Investing in Innovations.”

What is a Gene Bank?

- A bio-repository preserving genetic material (seeds, tissues, DNA) for future use.
- Ensures long-term preservation of biodiversity for food and agriculture.

Types of Gene Banks

Type	Storage Content	Example
Seed Bank	Seeds	ICAR-NBPGR, New Delhi
Field Gene Bank	Live plants	Perennial crops like mango
Cryobank	Frozen genetic material (-196°C)	DNA, embryos
DNA Bank	Purified DNA samples	Genetic research
In Vitro Bank	Plant tissues in nutrient media	Tissue culture

Key Goals of New NGB

- Conserve 10 lakh germplasm, expand crop diversity.
- Back-up for existing gene pool in ICAR-NBPGR, New Delhi (world’s second-largest gene bank with 4.71 lakh accessions).

Importance

- Ensures food security, sustainable agriculture, and climate resilience.

First Person View (FPV) Drones

Context

- Indian Army developed and tested indigenous FPV drones with anti-tank kamikaze payloads.

What are FPV Drones?

- Provide real-time video feed from the drone’s perspective to the operator.
- Used in combat, surveillance, and tactical missions.

Significance

- Cost-effective and highly precise.
- FPV drones played a key role in modern conflicts like the Ukraine war.
- Enhance India’s self-reliant defence capabilities.

Exercise INIOCHOS-25

Context

The Indian Air Force (IAF) is taking part in Exercise INIOCHOS-25, a biennial multinational air exercise hosted by the Hellenic Air Force in Greece. Held from March 31 to April 11, 2025, the exercise is designed to strengthen international cooperation and simulate modern air warfare conditions.

Purpose of the Exercise

INIOCHOS-25 provides a platform for participating air forces to:

- Enhance tactical skills through joint training.
- Exchange knowledge and best practices in air combat.
- Improve coordination in executing complex air operations under realistic scenarios.
- Foster strategic and operational collaboration across different nations.

Phases of the Exercise

- **Phase 1 (March 24–30):** Deployment of personnel and equipment to Greece.
- **Phase 2 (March 31–April 11):** Execution of air operations simulating multi-domain warfare.
- **Phase 3 (April 11–13):** Redeployment of forces back to home bases.

Types of Operations Conducted

INIOCHOS-25 includes a wide spectrum of aerial missions such as:

- Offensive and defensive counter-air operations
- Strategic and tactical air strikes
- Maritime and land-support air operations
- Combat search and rescue missions
- Reconnaissance and surveillance tasks
- Protection of high-value airborne assets

India's Participation

The Indian Air Force has deployed a powerful contingent comprising:

- **Su-30 MKI** fighter jets
- **IL-78** mid-air refueling aircraft
- **C-17 Globemaster** transport aircraft

These platforms reflect India's growing interoperability with other air forces and its commitment to enhancing multinational defence cooperation.

Significance

Participation in INIOCHOS-25 underlines India's increasing engagement in international military exercises, improving its preparedness for joint operations and strengthening strategic ties with NATO and other friendly air forces.

ISRO's new milestone-Semicryogenic Engine

Context

ISRO has achieved a significant milestone by successfully conducting a hot test of its semicryogenic engine, SE2000. This engine is being developed for use in the booster stage of the Launch Vehicle Mark-3 (LVM3), aimed at enhancing India's heavy-lift launch capability.

About Semicryogenic Engine

- A semicryogenic engine uses liquid oxygen (LOX) as the oxidizer and kerosene (RP-1) as the fuel.
- These propellants are non-toxic and environmentally safer compared to hypergolic fuels.
- While liquid oxygen is cryogenic, kerosene is stored at ambient temperature—hence the term “semicryogenic.”

ISRO's SE2000 Engine

- Designated for the booster stage of LVM3.
- It delivers a thrust of 2,000 kilonewtons (kN).
- Capable of enhancing LVM3's payload capacity to 5 tonnes in Geosynchronous Transfer Orbit (GTO), up from the current 4 tonnes.

Hot Test Achievements

- The first hot test of SE2000 was conducted on March 28, 2025, at ISRO Propulsion Complex, Mahendragiri.
- The test lasted 2.5 seconds and validated critical performance aspects like ignition stability, turbo-pump operations, and combustion efficiency.

Key Subsystems of SE2000

- **Thrust Chamber** – where combustion occurs.
- **Pre-burner** – initiates partial combustion to power turbo-pumps.
- **Turbo Pump System** – delivers fuel and oxidizer to the chamber under high pressure.
- **Control Components and Start-Up System** – regulate engine operations and ignition sequence.
- These subsystems are integrated into the Power Head Test Article (PHTA) for full-engine testing.

Test Facility

- The Semicryogenic Integrated Engine Test Facility (SIET) at Mahendragiri, inaugurated in February 2024, is specially built to test and qualify this engine.

Challenges in Development

- Semicryogenic technology is technically complex and available to only a few countries.
- It requires advanced metallurgy, precise control systems, and robust hardware to handle oxidizer-rich combustion and cryogenic temperatures.
- Collaboration with Indian industries has played a crucial role in building this indigenous capability.

Significance of the Development

- Enhances India's space launch capacity and makes LVM3 more cost-efficient and competitive globally.
- Supports heavier missions, including potential space station modules, interplanetary missions, and commercial satellite launches.

- Marks a step toward greater self-reliance in advanced space propulsion systems under India's Atmanirbhar Bharat initiative.

14th Edition of India-Russia Naval Exercise INDRA

Context

The 14th edition of the India-Russia bilateral naval exercise INDRA is being held from 28 March to 2 April 2025 off the Chennai coast. It is a significant event in India-Russia defence ties, especially in the maritime domain.

Historical Context

- Exercise INDRA began in 2003 as part of efforts to enhance strategic and naval cooperation between the Indian and Russian navies.
- Over time, it has evolved into a comprehensive joint military exercise, adapting to shifting geopolitical priorities and maritime security dynamics.

Structure of the Exercise

- **Harbour Phase (28–30 March):** Conducted in Chennai, includes:
 - Opening ceremony
 - Subject Matter Expert Exchanges (SMEEs)
 - Reciprocal ship visits
 - Sports and cultural engagements
- **Sea Phase (31 March–2 April):** Conducted in the Bay of Bengal, focuses on operational drills and interoperability.

Participants and Assets Involved

- Russian Navy: Ships Pechanga, Rezkuy, and Aldar Tsydenzhapov
- Indian Navy: Ships Rana, Kuthar, and P-8I maritime patrol aircraft
- The inclusion of surface ships, aircraft, and helicopters enriches the complexity and learning experience of both navies.

Key Activities in the Sea Phase

- Tactical naval manoeuvres
- Live weapon firing
- Anti-air operations
- Underway replenishment drills
- Helicopter cross-deck landings
- Exchange of sea riders
- Search and rescue (SAR) operations and communication exercises

Objectives of the Exercise

- Enhance interoperability and mutual understanding between the two navies
- Strengthen diplomatic and defence ties through cooperative maritime initiatives
- Share best practices in maritime operations and naval warfare
- Promote regional peace and stability by fostering joint response capability to maritime challenges

Significance of Exercise INDRA

- Reflects India's commitment to strategic engagement with Russia, especially in the Indo-Pacific
- Strengthens India's regional maritime presence in the Bay of Bengal and Indian Ocean Region (IOR)
- Demonstrates both countries' interest in maintaining maritime security, countering piracy, and upholding international maritime laws
- Contributes to India's broader maritime strategy under SAGAR (Security and Growth for All in the Region) and Act East Policy

Conclusion

Exercise INDRA remains a symbol of enduring defence partnership between India and Russia. Its continued evolution signifies the growing complexity and depth of naval cooperation aimed at ensuring maritime stability, security, and operational excellence in the region.

Indian Scientists Develop Dual-Spectrum Security Ink

Context:

Scientists have developed a new anti-counterfeiting ink visible under both UV and IR light.

Key Points:

- Developed using strontium bismuth fluoride nanoparticles.
- Helps prevent counterfeiting in sectors like pharma and branded goods.
- Offers enhanced security features like dual fluorescence.

Chandrayaan-3 Data Suggests Water Beyond Moon's Poles

Context:

New analysis from ChaSTE indicates possible water ice in high-latitude lunar regions.

Highlights:

- The temperature difference of 60°C found just below the surface reveals low conductivity.
- Regions with slopes greater than 14° poleward may also hold ice.
- These areas may be easier to explore than polar regions.

SIPRI Arms Report: India Among Top Importers

Context:

SIPRI's latest report ranks India as the second-largest arms importer from 2020–24.

Findings:

- Ukraine topped the list, followed by India and Qatar.
- Russia remains India's largest supplier, though its share has declined.
- The US continues to lead global arms exports.

ECONOMY

Farmers' Earnings and the Role of Intermediaries

The Reserve Bank of India (RBI) recently conducted a nationwide survey on farmers' share in consumer prices, shedding light on the economic realities faced by agricultural producers in India. The survey, covering 12 rabi crops across 18 states, provides crucial insights into the earnings of farmers, market dynamics, and the role of intermediaries.

The findings indicate that farmers receive anywhere between 40% to 67% of the final consumer price. Wheat farmers secured the highest share (67%), benefiting from the Minimum Support Price (MSP) framework and a more structured procurement mechanism. In contrast, rice farmers earned 52%, reflecting minor fluctuations over the years. Pulses like lentils (Masoor) and gram (Chana) fetched 66% and 60%, respectively, while mustard farmers saw a slight decline in earnings, from 55% in 2021 to 52% in 2024.

The report highlights that farmers growing perishable crops (fruits and vegetables) face the greatest economic distress. Their share of the final consumer price ranges between 40% and 63%, significantly lower than for cereals and pulses. A major factor behind this discrepancy is the multi-layered role of intermediaries—commission agents, traders, and wholesalers—who capture a significant portion of the profits. More than 50% of the consumer price of perishable goods is absorbed by these middlemen, with only a fraction reaching the actual producers.

Why Are Farmers Losing a Significant Share?

Several structural factors contribute to this income disparity:

- **Dependence on Middlemen** – Most small and marginal farmers lack direct access to markets. They rely on **commission agents** for selling their produce, often at lower-than-market prices.
- **Unorganized Supply Chains** – The absence of transparent pricing mechanisms and digital platforms weakens farmers' bargaining power. Middlemen exploit this lack of visibility to inflate their margins.
- **Price Fluctuations & Storage Deficits** – Perishable crops require cold storage and efficient transportation, which are often inadequate in rural areas. This forces farmers to sell their produce at distress prices, further reducing their earnings.
- **Digital Divide & Market Access** – While initiatives like e-NAM (Electronic National Agricultural Market) exist, their implementation remains limited due to technological illiteracy and lack of awareness among farmers.

Rise of Digital Payments in Agriculture

The survey also reveals a shift towards digital transactions in agricultural markets. While cash transactions still dominate, there has been a notable increase in electronic payments compared to 2018 and 2022 surveys. This shift is largely driven by the Pradhan Mantri Jan Dhan Yojana (PMJDY), Aadhar-linked payments, and mobile banking services, which are improving financial inclusion among rural farmers.

However, despite this progress, informal credit systems and reliance on commission agents remain a challenge. Many farmers still prefer cash payments, fearing delays or deductions in digital transactions.

There is an urgent need for financial literacy programs, encouraging farmers to adopt direct digital transactions to ensure transparency and fair pricing.

Policy Interventions and Way Forward

To enhance farmers' income and reduce intermediary influence, a multi-pronged strategy is required.

- **Strengthening Direct Market Access** – Expanding digital marketplaces like e-NAM, setting up rural collection centers, and encouraging Farmer Producer Organizations (FPOs) can reduce reliance on middlemen.
- **Investment in Storage & Logistics** – Cold storage chains, warehouses, and processing units must be established at the grassroots level to prevent post-harvest losses and stabilize prices.
- **Boosting Crop Diversification** – Farmers should be incentivized to diversify beyond cereals into high-value cash crops, backed by assured procurement mechanisms and value-added agro-processing units.
- **Transparent Pricing Mechanisms** – The Agricultural Produce Market Committee (APMC) reforms should ensure real-time price visibility so that farmers can negotiate better prices directly with buyers.
- **Financial & Technological Inclusion** – Promoting agriculture credit cards, direct benefit transfers (DBT), and mobile banking awareness can help farmers access formal credit and avoid exploitative lending networks.

The RBI's findings reaffirm that while government interventions like MSP help in stabilizing earnings, structural inefficiencies in agricultural marketing and supply chains continue to hinder fair income distribution. A farmer-centric economic model, integrating direct access to markets, digital financial tools, and post-harvest infrastructure, is critical for enhancing agricultural sustainability and rural prosperity.

Revision of India's Model Bilateral Investment Treaty (BIT)

Context

The Indian government has announced a revision of its Model Bilateral Investment Treaty (BIT) in the Union Budget 2025. This move aims to enhance investor confidence, attract foreign investments, and align with evolving global economic conditions. The revised BIT will seek to balance investor protection with India's sovereign regulatory powers.

Bilateral Investment Treaty (BIT)

A Bilateral Investment Treaty (BIT) is a legal agreement between two countries that protects foreign private investments by setting minimum guarantees. These include:

- **National Treatment:** Foreign investors receive treatment on par with domestic companies.
- **Fair and Equitable Treatment:** Investments are protected as per international legal standards.
- **Protection from Expropriation:** Limits government actions on foreign investments without fair compensation.

- **Dispute Resolution Mechanisms:** BITs offer Investor-State Dispute Settlement (ISDS) and State-to-State Dispute Settlement (SSDS) for conflict resolution.

India signed its first BIT with the UK in 1994. However, due to multiple investor-state disputes, the government revised its Model BIT in 2015 to limit foreign investor claims. India currently has BITs with UAE and Uzbekistan and is negotiating with the UK, Saudi Arabia, Qatar, and the EU.

Why is a New Revision Needed?

- **Narrow Definition of Investment:** The 2015 BIT restricts investment to enterprises with substantial business operations in India, excluding indirect and portfolio investments.
- **Investor Deterrence:** The rigid dispute resolution process and limited investor protections discourage FDI inflows.
- **Geopolitical and Trade Agreements:** India is negotiating FTAs with the EU, UK, and Canada, requiring a balanced BIT framework to support investment growth.
- **Investor-State Dispute Settlement (ISDS) Restrictions:** The 2015 BIT makes international arbitration difficult, raising concerns among foreign investors.

Expected Changes in the Revised Model BIT

- **Enhanced Investor Protections:** India may reintroduce a limited Most-Favored Nation (MFN) clause while retaining regulatory control.
- **Reformed Dispute Resolution Mechanism:** The five-year domestic legal exhaustion clause may be relaxed, allowing quicker access to international arbitration.
- **Sector-Specific Provisions:** High-value industries like pharmaceuticals, technology, and infrastructure may get targeted investment regulations.
- **Incentives for Sustainable Investments:** The new BIT may encourage green energy projects, digital trade, and climate-aligned investments.

Challenges with BITs

- **Unequal Investment Protections:** Developed nations benefit more as capital exporters, while developing countries have limited policy space.
- **Risk of Costly Arbitrations:** BIT-related lawsuits have forced some nations to pay millions in damages over alleged violations.
- **Ambiguous Legal Terms:** Terms like 'fair and equitable treatment' and 'indirect expropriation' can lead to expansive legal interpretations.
- **Regulatory Limitations:** BITs can restrict government policymaking, limiting flexibility in economic and social regulations.

Conclusion

A revised Model BIT is critical for boosting investor confidence, increasing FDI, and strengthening India's global trade standing. The updated framework must ensure a fair investment climate while protecting India's economic sovereignty. The revision should also be negotiated independently from FTAs to retain strategic control over investment policies. A well-crafted BIT will provide stability, predictability, and long-term economic benefits for India.

India Needs to Keep Its Deficit Target Flexible – Issue and Analysis

Context

As India aspires to become a developed nation by 2047, maintaining flexibility in fiscal deficit targets is essential. A rigid deficit cap may hinder long-term investments and economic stability. Instead, an adaptable approach allows counter-cyclical spending, targeted investments, and crisis management while ensuring fiscal discipline.

Understanding the Fiscal Deficit Target

A fiscal deficit occurs when a government's total expenditure exceeds total revenue, excluding borrowings. The Fiscal Responsibility and Budget Management (FRBM) Act, 2003 initially set a strict deficit target of 3% of GDP to maintain fiscal discipline. However, economic uncertainties and global shocks have necessitated a more flexible approach.

A Flexible Deficit Target allows governments to adjust deficit goals based on economic conditions, revenue fluctuations, and investment priorities. This approach ensures sustainable growth while maintaining investor confidence.

Key Components of Flexibility

- **Counter-Cyclical Policy:** Higher deficits during downturns and fiscal consolidation during high-growth periods.
- **Expenditure Prioritization:** Focus on infrastructure, welfare, and growth-oriented investments while curbing non-essential spending.
- **Revenue Considerations:** Deficit targets should adapt to tax revenues, disinvestment proceeds, and other fiscal inflows.
- **Escape Clauses:** Built-in mechanisms allow deviation from deficit targets during crises like pandemics or financial shocks.

Evolution of Flexible Deficit Targeting in India

- **FRBM Act, 2003:** Introduced a fixed 3% fiscal deficit target for long-term stability.
- **FRBM Review Committee (2017):** Recommended a range-based approach (2.5% – 3% of GDP) with a 0.5% escape clause for emergencies.
- **COVID-19 Impact (2020-21):** The fiscal deficit was raised to 9.5% of GDP, highlighting the need for flexibility in crisis situations.
- **Union Budget 2021-22 & Beyond:** A gradual approach was adopted, with a target to reduce the deficit to 4.5% by FY2025-26 while allowing higher spending on infrastructure and social welfare.

Why India Needs a Flexible Deficit Target

- **Economic Shocks and Global Uncertainty:** Events like COVID-19, geopolitical tensions, and oil price volatility require fiscal space for government intervention. A rigid target may limit economic resilience.
- **Investment-Driven Growth:** India's focus on infrastructure and capital expenditure demands higher borrowing, which may exceed fixed deficit limits. Flexibility allows the government to invest strategically.
- **Counter-Cyclical Fiscal Policy:** In economic slowdowns, the government should increase spending to boost demand. During high-growth periods, deficit targets can be tightened.

- **Infrastructure and Social Sector Development:** India must sustain investment in roads, health, and education. A strict fiscal cap could lead to underfunding of critical sectors.
- **Private Sector Confidence:** A balanced deficit strategy reassures investors while avoiding excessive fiscal rigidity that could harm economic growth.

Challenges of Flexible Deficit Targeting

- **Risk of Fiscal Indiscipline:** Without strict limits, governments may overspend, increasing debt-to-GDP ratios and risking credit rating downgrades.
- **Market Uncertainty:** Frequent adjustments to fiscal targets may reduce policy predictability, affecting investor sentiment and foreign direct investment (FDI) flows.
- **Inflationary Pressures:** Increased borrowing can fuel inflation, particularly when supply-side constraints exist.
- **Higher Interest Costs:** Persistent high deficits raise borrowing costs, reducing funds for development projects.

International Best Practices

- **United States:** Uses counter-cyclical policies, allowing higher deficits in recessions and fiscal consolidation in growth phases.
- **Germany:** Known for strict fiscal rules but relaxed its “debt brake” during COVID-19 to support economic recovery.
- **Japan:** Prioritizes economic stability over deficit reduction, despite having a 200% debt-to-GDP ratio.
- **Australia:** Uses public-private partnerships (PPP) for infrastructure financing, reducing government debt reliance.

How to Balance Flexibility with Responsibility?

- **Range-Based Fiscal Targets:** Setting a flexible target (e.g., 2.5% – 4% of GDP) instead of a fixed percentage to accommodate economic fluctuations.
- **Independent Fiscal Oversight:** Establishing a Fiscal Council to ensure responsible deficit deviations.
- **Gradual Deficit Reduction:** Committing to a phased reduction strategy instead of abrupt spending cuts.

Conclusion

India's shift towards a Flexible Deficit Target reflects the need for adaptive fiscal policies in an unpredictable global economy. While flexibility enables economic resilience and investment growth, it must be implemented prudently to avoid excessive debt accumulation. A balanced approach—allowing temporary deviations while ensuring a clear medium-term fiscal roadmap—is essential for long-term economic stability and development.

Pravaah and Sarthi Initiatives of RBI

Context

The Reserve Bank of India (RBI) has been awarded the Digital Transformation Award 2025 by Central Banking, London, for its innovative digital governance initiatives. The recognition highlights RBI's commitment to technological advancement, efficiency, and transparency through its Pravaah and Sarthi systems. These initiatives reflect RBI's efforts to modernize internal workflows and regulatory processes in India's financial sector.

Digital Initiatives by RBI

Sarthi System

The Sarthi System is an internal workflow digitization platform designed to improve record management, process automation, and data analysis within RBI. It eliminates manual paperwork, reducing processing time and ensuring secure and efficient digital submissions. The system has significantly enhanced collaboration across RBI departments, making operations more streamlined and data-driven.

Pravaah System

The Pravaah System is a digital regulatory application platform that facilitates seamless submission and processing of regulatory applications by external stakeholders. It is integrated with Sarthi, ensuring a smooth transition between regulatory approvals and internal workflow management. The system has improved cybersecurity, reduced paperwork, and enhanced transparency in financial documentation and decision-making.

Impact of the Initiatives

- **Improved Efficiency:** The automation of workflows has reduced administrative delays, allowing faster decision-making.
- **Enhanced Transparency:** Digital tracking of regulatory applications ensures real-time monitoring and accountability.
- **Strengthened Cybersecurity:** The secure digital framework protects sensitive financial data from breaches.
- **Better Collaboration:** RBI employees and external stakeholders benefit from a user-friendly digital ecosystem that simplifies regulatory interactions.

Conclusion

The Pravaah and Sarthi initiatives represent a significant step in RBI's digital transformation. By adopting technology-driven governance, RBI has set a benchmark for regulatory efficiency and financial sector modernization. These initiatives reinforce India's commitment to digital innovation, ensuring a more secure, transparent, and efficient financial system.

World Consumer Rights Day 2025

Context

India celebrated World Consumer Rights Day 2025, emphasizing eco-labelling, consumer protection in e-commerce, and grievance redressal mechanisms. On March 15 of each year, the global consumer movement and other influential stakeholders come together to celebrate World Consumer Rights Day. This annual event raises awareness of consumer rights, protection, and empowerment worldwide.

Union Minister Shri Pralhad Joshi highlighted the government's efforts in promoting sustainability and consumer rights, aligning with the theme "A Just Transition to Sustainable Lifestyles". The focus was on empowering consumers through informed choices while ensuring economic and environmental balance.

Government Initiatives for Consumer Protection

Strengthening Regulatory Frameworks

- The Consumer Protection (E-Commerce) Rules, 2020 regulate unfair trade practices in digital markets and ensure transparency in online transactions.
- Guidelines for Prevention of Misleading Advertisements and Dark Patterns safeguard consumers from deceptive promotions, particularly in the coaching sector and digital platforms.
- Greenwashing Prevention Guidelines, 2024 ensure companies make genuine sustainability claims, preventing false eco-friendly branding.

Consumer Grievance Redressal Platforms

- **E-Daakhil Portal:** A digital consumer complaint platform that enables easy filing of grievances against unfair practices.
- **E-Jagruti Initiative:** A new digital grievance redressal system, enhancing consumer protection with faster resolution mechanisms.
- **National Consumer Helpline (NCH) 2.0 and upcoming NCH 3.0** aim to reduce complaint resolution time from 45 days to just 7 days.
- **Refund of ₹1454 crores** facilitated by CCPA for air ticket cancellations during the COVID-19 pandemic.

Bureau of Indian Standards (BIS) Initiatives

- 180 Quality Control Orders (QCOs) covering 769 products ensure consumers receive high-quality and safe goods.
- Hallmarking of Gold Jewellery guarantees purity and standardization.
- Eco-mark schemes for sustainable packaging promote environmentally friendly products.

Mission LiFE and Sustainable Consumer Practices

- The **Mission LiFE initiative**, inspired by Mahatma Gandhi's zero-carbon lifestyle, promotes a shift from a 'use-and-dispose' economy to a circular economy.
- **"Reduce, Reuse, and Recycle" principles** are encouraged to make sustainability a core consumer responsibility.

Consumer Awareness and Capacity-Building Initiatives

- **"Jago Grahak Jago" Awareness Program** educates consumers on their rights and responsibilities.

- **Right to Repair Initiative** aims to democratize repair information and services, reducing electronic waste and planned obsolescence.
- **NCCF's Mobile Consumer Awareness Campaigns** deployed across 29 branch locations educate citizens on consumer rights.
- **Quality Connect Campaign (March 1-15, 2025)** raises awareness about standards and quality assurance, engaging government officials, RWAs, and students.

Conclusion

The 2025 World Consumer Rights Day showcased India's commitment to consumer empowerment and sustainability. With strong regulatory measures, digital grievance platforms, and awareness campaigns, the government is ensuring consumer protection and promoting eco-friendly practices. A balanced approach that integrates consumer rights, fair trade, and sustainability will be key to shaping a responsible consumer economy in India.

India Needs Tariff Cuts, Reforms to Boost Investments: World Bank

Context

The World Bank's India Country Economic Memorandum highlights that India must accelerate structural reforms to sustain high growth and achieve high-income status by 2047. The report emphasizes the need for tariff reductions, investment acceleration, and labor market improvements to maintain an average annual growth rate of 7.8%.

India's Economic Growth Trajectory

Since 2000, India's economy has grown nearly four-fold in real terms, and GDP per capita has almost tripled. The country has outpaced global economic growth, doubling its share in the world economy from 1.6% in 2000 to 3.4% in 2023. Currently, India ranks as the fifth-largest economy in the world. However, to reach high-income status by 2047, ambitious reforms are essential.

Key Growth Targets for 2047

The World Bank outlines a roadmap that includes:

- Achieving faster, inclusive growth across states.
- Increasing total investment from 33.5% to 40% of GDP by 2035.
- Raising labor force participation from 56.4% to above 65%.
- Accelerating productivity growth and structural transformation.
- Raising female labor force participation from 35.6% to 50%.
- Enhancing India's GNI per capita nearly eight times to reach high-income status.

Lessons from Global Examples

Countries like Chile, South Korea, and Poland successfully transitioned to high-income status by deepening their integration into the global economy. India must follow a similar path by removing trade barriers, improving human capital, and expanding high-productivity sectors such as manufacturing and services.

Key Policy Actions Needed

- India must strengthen financial sector regulations, enhance credit access for MSMEs, and simplify foreign direct investment (FDI) policies to attract higher investments.
- The focus should be on labor-intensive industries such as agro-processing, hospitality, and technology-driven services. Expanding vocational training and skill development programs will ensure a workforce aligned with industry needs.
- Moving labour and resources to higher productivity sectors is crucial. Investments in infrastructure, urbanization, and technological advancements will drive growth in manufacturing and services.
- A differentiated approach is required, where less-developed states receive policy support for basic economic fundamentals, while more advanced states focus on high-value sectors, research, and global value chain (GVC) integration.
- The central government must support low-income states through programs like the Urban Challenge Fund, which encourages efficient public expenditure and targeted development policies.

World Bank's Income Classification System

The World Bank categorizes countries based on Gross National Income (GNI) per capita:

- **Low-Income Countries:** GNI per capita \leq \$1,145.
- **Lower-Middle-Income Countries:** GNI per capita \$1,146 – \$4,515.
- **Upper-Middle-Income Countries:** GNI per capita \$4,516 – \$14,005.
- **High-Income Countries:** GNI per capita \geq \$14,005.

Conclusion

India's ambition to become a high-income economy by 2047 is achievable with comprehensive policy reforms. A pro-investment business environment, labor market expansion, and global trade integration will be crucial. By learning from successful global examples and focusing on economic inclusivity, India can sustain rapid growth, create jobs, and boost productivity to reach its long-term development goals.

ANURAG BACHAN'S

10,000 FPOs Achieved Under Government's Flagship Scheme

Context

The central government has successfully met its target of establishing 10,000 Farmer Producer Organizations (FPOs) under a flagship scheme launched in 2020. Prime Minister Narendra Modi inaugurated the 10,000th FPO in Bhagalpur, Bihar, focusing on maize, banana, and paddy cultivation.

About the Central Sector Scheme for FPOs

The Central Sector Scheme for the Formation and Promotion of 10,000 FPOs was launched in 2020 with a budget allocation of ₹6,865 crore until 2027-28. The scheme aims to strengthen small and marginal farmers by enhancing their access to better market linkages, financial support, and capacity-building programs. Currently, around 30 lakh farmers are associated with FPOs, with 40% of them being women.

The primary objectives of the scheme are:

- Providing financial and technical handholding support to FPOs for up to five years from their formation.
- Enhancing capacity-building programs to develop agricultural entrepreneurship skills among farmers.

What are FPOs?

A Farmer Producer Organization (FPO) is a legally registered entity consisting of small and marginal farmers who collectively engage in agricultural production and marketing. These organizations are registered under Part IXA of the Companies Act or under the Cooperative Societies Act of respective states.

The Small Farmers' Agribusiness Consortium (SFAC), under the Ministry of Agriculture, plays a crucial role in facilitating the formation and strengthening of FPOs across India.

Need for FPOs in India

India's agricultural sector is heavily dominated by small and marginal farmers, who face numerous challenges, including:

- Limited access to modern technology, quality seeds, fertilizers, and pesticides.
- Financial constraints that restrict mechanization and modern farming techniques.
- Inability to negotiate fair prices due to fragmented and small-scale production.
- Inadequate storage, transportation, and marketing facilities, leading to post-harvest losses.

FPOs help address these challenges by collectivizing small farmers, enhancing their bargaining power, and providing better access to market linkages, financial resources, and agricultural inputs.

Services Provided by FPOs

FPOs offer various support services to farmers, including:

- Providing quality agricultural inputs such as seeds, fertilizers, and pesticides at wholesale rates to reduce costs.
- Facilitating access to farm machinery and equipment such as tillers, harvesters, and irrigation systems on a custom-hiring basis to lower production expenses.
- Enabling value addition through sorting, grading, packaging, and processing facilities to improve marketability and pricing.
- Organizing storage and logistics services, including warehousing, transportation, and handling, to ensure efficient post-harvest management.

- Improving market access by aggregating produce and negotiating better prices in formal agricultural markets and e-commerce platforms.

Challenges Facing FPOs

Despite their benefits, FPOs face several challenges that hinder their growth and effectiveness:

- Complex regulatory compliance and bureaucratic hurdles delay the registration and functioning of FPOs.
- Weak infrastructure for storage, processing, and transportation limits their ability to scale operations.
- Low farmer participation and governance issues affect internal decision-making and long-term sustainability.
- Limited digital adoption and financial literacy make it difficult for FPOs to access e-markets and modern financial services.
- Exposure to climate risks and market fluctuations affects profitability and productivity.

Way Forward

The successful establishment of 10,000 FPOs under the Central Sector Scheme marks a significant milestone in India's agricultural sector. This initiative has empowered millions of small and marginal farmers, including women and economically weaker sections, by enhancing their financial independence and market accessibility.

To further strengthen the impact of FPOs, the government must focus on:

- Simplifying regulatory and compliance procedures to encourage more farmer participation.
- Investing in storage and processing infrastructure to reduce post-harvest losses.
- Encouraging digital platforms for marketing and financial transactions to improve transparency.
- Developing climate-resilient farming techniques to mitigate risks from unpredictable weather patterns.

With sustained government support, policy reforms, and private sector collaboration, FPOs can transform Indian agriculture by fostering inclusivity, enhancing productivity, and ensuring farmers get fair value for their produce.

Progress of Direct Benefit Transfers

Context

Finance Minister Nirmala Sitharaman announced that 1,100 out of 1,200 government schemes are now under Direct Benefit Transfer (DBT), ensuring that welfare benefits are directly credited to beneficiaries' bank accounts.

Direct Benefit Transfer

DBT was introduced to directly transfer subsidies, pensions, and financial assistance to marginalized and vulnerable sections. In 2014, the DBT mission was launched, leveraging digital technology to improve public service delivery.

The introduction of Pradhan Mantri Jan Dhan Yojana (PMJDY) in 2014 played a crucial role in financial inclusion, laying the foundation for DBT. This led to the development of the JAM Trinity (Jan Dhan-Aadhaar-Mobile), enabling the world's largest targeted payments framework.

Need and Background of Direct Benefit Transfers

After independence, India focused on centralized planning and public welfare to overcome economic constraints and promote inclusive growth. However, inefficiencies such as financial leakages, delays, and corruption hindered the effective delivery of welfare benefits.

Former Prime Minister Rajiv Gandhi highlighted the inefficiency of the system by stating that for every rupee spent on welfare, only 15 paise reached the intended beneficiaries. This underscored the urgent need for reforms in subsidy and welfare distribution mechanisms.

Major Central Schemes Seeded with DBT

- **PM Kisan Samman Nidhi (PM-KISAN):** A central sector DBT scheme that provides ₹6,000 per annum to landholding farmer families, subject to certain exclusion criteria
- **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS):** Ensures livelihood security for rural households by directly crediting wages into bank or post office accounts of beneficiaries through DBT.
- **Pradhan Mantri Matru Vandana Yojana (PMMVY):** Aims to encourage improved health-seeking behavior among pregnant women and lactating mothers by transferring financial benefits directly to their bank accounts
- **Pradhan Mantri Awaas Yojana- Gramin (PMAY-G):** Seeks to provide 2.95 crore houses to eligible rural families, ensuring financial support reaches beneficiaries without intermediaries

DBT's Impact

The coverage of DBT schemes has expanded from 28 in 2013-14 to 323 in 2024-25. The total funds transferred through DBT have increased from ₹7,400 crores to ₹7 lakh crores, reflecting a nearly 1,000-fold rise.

By eliminating leakages, DBT has saved around ₹3.5 lakh crores, ensuring that funds reach the intended beneficiaries. Aadhaar authentication has played a key role in removing fake or duplicate beneficiaries, with schemes like PAHAL, MGNREGS, and PDS identifying and eliminating over 9.2 crore ineligible recipients.

DBT has improved the timely delivery of scholarships, pensions, and social assistance, reducing dependency on government offices. The system has increased transparency and accountability, leading to the redesign of programs such as Swachh Bharat Mission (SBM), PM-JAY (health insurance), and PM-KISAN (farmers' cash transfers).

International Recognition

Global organizations such as the World Bank and the International Monetary Fund (IMF) have praised DBT for its efficiency, effectiveness in reducing corruption, and role in expanding the reach of welfare programs.

Future Potential

The success of DBT can be leveraged to introduce more welfare schemes and expand its application in sectors such as public distribution, healthcare, and education. By enhancing governance efficiency and ensuring financial inclusion, DBT can support innovative policies that contribute to India's goal of becoming a developed nation by 2047.

Impact of GeM on India's Economy – Issue and Analysis

Context

The Government e-Marketplace (GeM) has transformed public procurement in India. It has increased efficiency, transparency, and accessibility for government buyers and small businesses.

What is GeM?

Government e-Marketplace (GeM) is an online procurement platform launched in 2016 by the Ministry of Commerce and Industry. It streamlines government purchases, ensuring fair competition and cost-effective procurement.

The primary objective is to create an open and transparent procurement system for government agencies.

Core Principles of GeM

- **Transparency:** Eliminates manual interventions and reduces corruption in procurement.
- **Efficiency:** Ensures faster transactions and real-time price comparisons.
- **Inclusivity:** Enables startups, MSMEs, and SHGs to access government contracts.
- **Fair Competition:** Provides equal opportunities for businesses of all sizes.

Key Features of GeM

- **SWAYATT Initiative** promotes business ease for startups, women entrepreneurs, MSMEs, SHGs, and youth.
- **Startup Runway 2.0** helps startups showcase innovative products for government buyers.
- **Dedicated Marketplace for Startups** allows all startups to list products, even without DPIIT certification.
- **Womaniya Initiative** promotes women entrepreneurs and their self-help groups.
- **Support for MSMEs and SC/ST Entrepreneurs** ensures better representation in public procurement.
- **SARAS Collection** highlights handcrafted handlooms, office décor, and personal care products from self-help groups.

Impact of GeM

- **Cost Savings** – Competitive pricing reduces procurement costs for the government.
- **Wider Market Access** – Vendors from remote and rural areas can participate, ensuring a broader seller base.
- **Boost to MSMEs and Startups** – Nearly 50% of GeM orders come from MSMEs, promoting small businesses.

Concluding Remarks

GeM has strengthened ease of doing business and increased participation in government procurement. Its strategic initiatives ensure a sustainable, competitive, and transparent marketplace. As the platform evolves, it will continue driving India towards inclusive and efficient public procurement.

National Waterways (Construction of Jetties/ Terminals) Regulations, 2025

Context

The Ministry of Ports, Shipping, and Waterways (MoPSW) has introduced new regulations, formulated by the Inland Waterways Authority of India (IWAI), to streamline processes and promote efficient use of India's vast waterways network.

Aims and provisions of the Regulations

The National Waterways (Construction of Jetties/Terminals) Regulations, 2025 aim to enhance private sector participation in the development of inland waterway terminals. Any entity, including private players, intending to develop or operate an inland waterway terminal must obtain a No Objection Certificate (NoC) from the IWAI.

The regulations apply to both existing and new terminals, including permanent and temporary installations. Permanent terminals can be operated for their lifetime by the developer, while temporary terminals will initially be granted a five-year term, with an option for extensions.

Developers and operators are responsible for the technical design and construction of the terminal, ensuring alignment with their business plans and providing adequate access.

Inland Waterways Authority of India (IWAI)

- IWAI is an autonomous organization constituted in 1986 under the Inland Waterways Authority of India Act, 1985.
- It is responsible for the development, maintenance, and regulation of National Waterways under the National Waterways Act, 2016.
- The head office of IWAI is located in Noida.

Significance of the Inland Waterways

- **Reducing Logistics Costs:** Logistics costs in India account for 14% of GDP, significantly higher than the global average of 8-10%. The expansion of inland waterways aims to reduce these costs.
- **Decongestion:** Promoting inland waterways will help alleviate congestion on roads and railways, reducing pressure on existing transport networks.
- **Eco-Friendly Transport:** Reduced fuel consumption and emissions align with India's commitment to sustainable development goals (SDGs) and its climate action targets.
- **Economic Benefits:** Increased cargo movement via inland waterways will bolster trade and commerce, especially in regions adjoining National Waterways. The cargo movement on national waterways has surged over the last decade, from 18 million tonnes to 133 million tonnes in FY 2023-24.

Government Initiatives

- **Jalvahak Scheme:** This initiative provides direct incentives to cargo owners for transporting goods via inland waterways for distances exceeding 300 km. Reimbursement of up to 35% of total operating expenditure incurred during cargo transportation is provided.
- **Jal Marg Vikas Project (JMVP):** This project focuses on developing NW-1 with modern infrastructure and terminals to improve cargo transport efficiency.
- **Sagarmala Project:** It aims to integrate inland waterways with coastal shipping and ports, enhancing multimodal transport connectivity.

- **Freight Village Development:** Establishing logistics hubs near key waterways to boost multimodal transport and improve supply chain efficiency.

Concluding Remarks

The National Waterways (Construction of Jetties/Terminals) Regulations, 2025 are a crucial step toward enhancing private sector participation, reducing logistics costs, and promoting eco-friendly cargo transport. With increased digitization and policy support, these regulations are set to improve India's waterway infrastructure, making it a more viable and competitive mode of transportation.

Swavalambini

Context

The Ministry of Skill Development and Entrepreneurship (MSDE), in collaboration with NITI Aayog, has launched **Swavalambini**, a Women Entrepreneurship Programme aimed at fostering structured entrepreneurial growth among young women in Higher Education Institutions (HEIs).

About Swavalambini

Swavalambini is designed to provide aspiring women entrepreneurs with the necessary mindset, resources, and mentorship to successfully build and scale their ventures. It seeks to create a stage-wise entrepreneurial journey that integrates education, mentorship, funding access, and business development.

Key Features of the Swavalambini Programme

- **Faculty Development Programme (FDP)** – The programme includes a five-day training session for faculty members from participating HEIs. These sessions equip educators with skills to mentor students in entrepreneurship.
- **Mentorship Support** – Once participants develop their business plans, they receive guidance from industry experts and successful entrepreneurs. The programme also facilitates:
 - Access to funding opportunities through government schemes and private investors.
 - Networking opportunities with established business leaders and professionals.
- **Women Entrepreneurship Development Programme (EDP)** – Building on the foundation of entrepreneurial awareness, the EDP provides a deeper understanding of:
 - Business planning and strategy formulation.
 - Leadership and decision-making skills.
 - Financial literacy and investment strategies.
 - Market research and competitive analysis.

Significance

Swavalambini aims to bridge the gender gap in entrepreneurship by offering structured support at different stages of business development. By integrating mentorship, funding access, and entrepreneurial education, the programme fosters a more inclusive economic ecosystem, empowering women to contribute meaningfully to India's startup landscape.

US Announced Creation of Crypto Strategic Reserve

Context

The U.S. government has announced the creation of a **Crypto Strategic Reserve**, marking a significant step toward integrating digital assets into the country's financial system.

What is the Crypto Strategic Reserve?

The Crypto Strategic Reserve will function as a national stockpile of digital assets, managed under a federal regulatory framework. The reserve will primarily consist of five major cryptocurrencies: Bitcoin, Ethereum, Ripple, Solana, and Cardano.

This initiative reflects the U.S. government's recognition of cryptocurrencies as a critical component of the evolving financial landscape. By maintaining a national reserve of digital assets, the U.S. aims to enhance financial stability and preparedness for future economic challenges.

Significance of the Initiative

- **Strategic Financial Buffer** – The Crypto Strategic Reserve is designed to act as a hedge against economic uncertainties, similar to the **Strategic Petroleum Reserve**, which stabilizes energy markets during crises.
- **Mitigating Financial Risks** – Holding a reserve of cryptocurrencies can help cushion financial shocks, reducing reliance on traditional fiat-based monetary policies.
- **Inflation Hedge** – Cryptocurrencies, particularly Bitcoin, have been considered a store of value and a hedge against inflation, helping to safeguard national economic interests.
- **Expanding Economic Portfolio** – Diversifying national reserves with digital assets enhances the resilience of the financial system, ensuring adaptability to evolving market dynamics.

Conclusion

The creation of the Crypto Strategic Reserve signals a shift in the U.S. approach toward digital currencies. By formally integrating cryptocurrencies into national reserves, the U.S. aims to strengthen its economic stability and position itself at the forefront of the global digital asset economy.

State of India's Digital Economy Report 2025

Context

The Indian Council for Research on International Economic Relations (ICRIER) has released the State of India's Digital Economy (SIDE) Report, 2025, which provides an in-depth analysis of India's digital transformation. The report highlights India's position as the third-largest global economy while ranking only 28th in digital user spending, indicating a gap between digital access and economic participation.

Despite rapid internet penetration, the report notes that actual digital spending in India remains below global standards. While India has seen significant growth in digital connectivity, the transition to widespread economic engagement through digital platforms is still evolving. This disparity suggests that while more people have internet access, their participation in digital commerce, financial technology, and AI-driven services remains limited.

Key Findings of the Report

India's digital economy is expanding at twice the rate of its overall economy and is projected to contribute 20 percent of GDP by 2029. The report employs the Connect-Harness-Innovate-Protect-Sustain (CHIPS) framework, which evaluates digital transformation based on technological, economic, and societal indicators.

One of the critical insights from the report is that while India ranks high in terms of internet penetration, the country still lags behind in digital economic activity. The report reveals that India is ranked 11th globally in AI research and 16th in AI infrastructure. In contrast, countries such as the United States, China, South Korea, Singapore, and the Netherlands lead in AI innovation and digital integration. However, when both economic size and digital user economy are considered, India ranks eighth globally, signifying its strong digital potential despite the existing gaps in infrastructure and spending.

Challenges and Opportunities

One of the significant challenges highlighted in the report is the mismatch between digital connectivity and economic utilization. While India has a high number of internet users, many remain outside the formal digital economy due to factors such as digital literacy barriers, cybersecurity concerns, and inadequate AI integration in key sectors.

The expansion of digital financial services, particularly through platforms like the Unified Payments Interface (UPI) and Aadhaar-linked banking, has significantly improved financial inclusion. However, cybersecurity risks, data privacy concerns, and the need for better digital infrastructure in rural areas remain pressing issues. Without addressing these concerns, India's digital economy may struggle to reach its full potential.

Policy Recommendations and the Way Forward

The report suggests several strategies to accelerate India's digital transformation and bridge the participation gap.

- Expanding AI research and infrastructure by investing in high-performance computing, cloud technology, and AI-driven innovation hubs.
- Strengthening cybersecurity regulations to enhance user trust and protect digital transactions from cyber threats and data breaches.
- Promoting digital literacy programs to ensure broader participation in the digital economy, particularly in rural and semi-urban areas.
- Encouraging digital entrepreneurship by simplifying regulatory procedures, offering tax incentives, and expanding funding for AI, fintech, and e-commerce startups.

Conclusion

India's digital economy is on a fast-growing trajectory, but the country must address the gap between internet access and economic participation. By investing in AI infrastructure, expanding digital literacy, and strengthening cyber security frameworks, India can move towards a more inclusive and globally competitive digital economy. The SIDE Report, 2025, underscores the importance of integrating policy measures that promote digital engagement, ensuring that India leverages its technological advancements to drive sustained economic growth.

Framework for Regulatory Sandbox

Context

The Reserve Bank of India (RBI) recently updated the '[Enabling Framework for Regulatory Sandbox](#)' and extended specific process timelines.

What is regulatory sandbox?

A regulatory sandbox refers to a controlled environment where new and innovative financial products, services, or business models can be tested with regulatory support. This setup allows real-time experimentation under a regulator's supervision, while limiting risks to consumers and the financial system. Entities eligible to participate in the sandbox must have a minimum net worth of ₹25 lakh as per their latest audited balance sheet. The sandbox offers innovators, financial service providers, and regulators a platform to evaluate the advantages and risks associated with new technologies. For the purpose of testing, regulators may allow limited regulatory relaxations. The sandbox serves not only as a test bed but also fosters collaboration between the regulator and financial innovators.

The main goal of the sandbox is to support responsible innovation in financial services while improving operational efficiency and delivering customer benefits. Through live testing, participants gain practical insights, and regulators can formulate informed, innovation-friendly policies. The RBI has revised the timeline for completing various stages of the sandbox process to nine months, up from the earlier seven months. The updated framework also requires sandbox entities to comply with the provisions of the Digital Personal Data Protection Act, 2023.

The sandbox environment allows real-time testing of new financial solutions, helping regulators assess their impact before widespread adoption. It promotes efficiency and customer-centric innovation, while ensuring consumer protection. By enabling limited-scale experimentation, the sandbox helps minimize risks and gather evidence to improve financial regulations.

However, the sandbox model does face challenges. Participants may find the process time-consuming, and there is potential for regulatory ambiguity when relaxations are selectively applied. Ensuring data privacy, customer safety, and managing legal issues—especially in cross-border fintech operations—also remain major concerns.

Conclusion

Despite these challenges, the Regulatory Sandbox presents a valuable opportunity for India's financial sector to adapt to evolving needs. If managed well, it can bridge the gap between innovation and regulation, foster trust, and ensure that consumers have access to modern, efficient financial services while maintaining systemic stability.

Disclosure Framework on Climate-related Financial Risks, 2024

Context

The Reserve Bank of India (RBI) has issued a draft framework for banks to disclose climate-related financial risks and opportunities.

About the Framework

- The framework requires banks and financial institutions to share how climate risks may affect their financial condition.
- It highlights the growing importance of environmental factors in long-term financial planning.
- The aim is to promote transparency and responsible behavior in the financial sector.

What are Climate-related Financial Risks?

These are risks that arise due to climate change or actions taken to reduce its effects. They affect banks and financial institutions in two major ways:

1. Physical Risks

- These are risks from natural disasters like floods, landslides, and storms.
- They can damage assets, reduce the value of collateral, and impact banks' ability to operate.
- For example, if a borrower's factory is damaged in a flood, the bank's loan is at risk.

2. Transition Risks

- These occur as the world shifts to a low-carbon economy.
- New laws, technology changes, and shifts in consumer preferences can affect business models.
- For instance, banks lending to coal-based industries may face repayment risks if those businesses shut down due to new environmental policies.

Who Will Follow the Framework?

- All scheduled commercial banks (except local area banks, payment banks, and regional rural banks).
- Tier-IV urban cooperative banks.
- Top and upper-layer Non-Banking Financial Companies (NBFCs).
- All India financial institutions.

Timeline for Implementation

- From 2025-26: Banks must disclose their governance, strategy, and risk management approach.
- From 2027-28: Banks will start sharing data and specific targets related to climate risks.

What Must be Disclosed?

- Climate-related risks and opportunities over short, medium, and long terms.
- Their impact on business strategy and financial planning.
- Resilience of strategy under different climate scenarios.

Significance of the Framework

- Helps in early identification of climate-related financial threats.
- Reduces the chances of mispricing assets or poor capital allocation.
- Promotes market discipline and informed investment decisions.
- Encourages long-term thinking among banks and investors.

Setting up Three New Semiconductor Plants in India

Context

The Government of India has approved the establishment of three new semiconductor plants in Gujarat and Assam. These plants involve a total investment of ₹1.26 lakh crore. This move is part of India's strategy to strengthen domestic chip manufacturing and reduce dependence on imports.

New Semiconductor Projects

In Gujarat's Dholera, Tata Electronics will collaborate with Taiwan's Powerchip Semiconductor Manufacturing Corporation (PSMC) to build a fabrication plant.

Another chip assembly unit will be established by Tata Group in Morigaon, Assam, with an investment of ₹27,000 crore. Additionally, CG Power and Japan's Renesas plan to set up a semiconductor facility in Sanand, Gujarat, at a cost of ₹7,600 crore.

What Are Semiconductors?

Semiconductors, also called 'chips', are crucial components of electronic devices. They help in processing, storing, and transferring data. These chips are made using silicon wafers that hold layers of transistors, diodes, resistors, and capacitors.

Global Manufacturing Landscape

Globally, nearly 70% of semiconductor production happens in Taiwan, South Korea, and China. Taiwan and South Korea control about 80% of the foundry capacity. The Netherlands-based ASML is the only company producing EUV lithography machines, necessary for advanced chip-making.

Challenges in India's Semiconductor Journey

Despite having skilled design engineers, India lacks trained factory-floor talent for chip production. Also, there is limited original research in chip design. Other major hurdles include ensuring uninterrupted electricity, availability of large amounts of clean water, and strong R&D infrastructure. Global competitors, like the US and EU, offer more lucrative incentives, making India's task harder.

Why Is This Important for India?

Establishing a semiconductor ecosystem in India is expected to generate direct and indirect jobs. It will also reduce the country's heavy reliance on imported chips. A strong domestic industry will support national security by securing the supply chain for sectors such as defense, telecom, and aerospace. In the long term, India could also become a key exporter of chips.

Government Initiatives Supporting the Sector

The India Semiconductor Mission has been launched under the Digital India Corporation. It works towards long-term development of chip design and manufacturing. The Production Linked Incentive (PLI) scheme supports semiconductor design and packaging. India is also part of the QUAD Semiconductor Supply Chain initiative to strengthen supply chain resilience.

Conclusion

To become a global player in chip-making, India must focus on skilling its workforce, improving research, and ensuring infrastructure support like power and water. With strategic investment and global partnerships, India can make significant strides in the semiconductor sector and contribute to its economic growth.

Financial Intelligence Unit (FIU-IND)

Context

The Financial Intelligence Unit - India (FIU-IND) has imposed a penalty of ₹5.49 crore on Paytm Payments Bank for non-compliance with its obligations under the Prevention of Money Laundering Act (PMLA).

About FIU-IND

The Financial Intelligence Unit - India was established in 2004 and functions under the Ministry of Finance. It operates as a central national agency responsible for managing data related to suspicious financial transactions. It plays a critical role in strengthening efforts to combat money laundering and the financing of terrorism.

Key Functions

- Receives and analyses reports relating to financial transactions suspected to involve proceeds of crime or terrorist financing.
- Disseminates relevant information to law enforcement and intelligence agencies.
- Coordinates with national and international financial intelligence units to support global efforts against illicit financial flows.

Operational Status

IU-IND functions as an independent body and reports directly to the Economic Intelligence Council (EIC), which is chaired by the Union Finance Minister.

National Bank for Financing Infrastructure and Development (NaBFID)

Context

The Union Minister for Finance and Corporate Affairs recently reviewed the performance of the National Bank for Financing Infrastructure and Development (NaBFID). The review included aspects such as business performance, resource mobilisation, development initiatives, human resources, technology infrastructure, and financials.

What is NaBFID?

NaBFID is a dedicated Development Finance Institution (DFI) aimed at providing long-term financing for infrastructure projects in India. It was set up under the National Bank for Financing Infrastructure and Development Act, 2021. The institution is designed to address the gap in infrastructure financing and boost the credit ecosystem through innovative financial instruments.

Key Features

- Supports infrastructure through long-term, non-recourse financing.
- Uses instruments like takeout financing, partial credit guarantees, blended finance, and other structured financial products.
- Encourages private investment by de-risking large infrastructure projects.

Operational Status

NaBFID has started functioning across both public and private sectors. It has set a target of sanctioning ₹3 lakh crore in infrastructure funding by March 2026. The bank also plays a key role in crowding-in private capital for high-priority sectors.

Significance

NaBFID is a critical step in India's strategy to modernise infrastructure and achieve sustainable development goals. By supporting projects in transport, energy, water, and social infrastructure, it contributes directly to national growth, job creation, and long-term economic resilience.

PM Surya Ghar Muft Bijli Yojana

Context

The Union Cabinet has approved the PM Surya Ghar Muft Bijli Yojana. The scheme aims to provide up to 300 units of free electricity per month to 1 crore households across India. It marks a major move towards clean energy and household empowerment.

About the Scheme

This rooftop solar initiative will be implemented with an investment exceeding ₹75,000 crore. It targets energy affordability, sustainable electricity generation, and green job creation at the grassroots level.

Implementation Mechanism

- Households can apply for the scheme via the dedicated website: <https://pmsuryaghar.gov.in>.
- Beneficiaries will receive subsidies for installing rooftop solar panels.
- Urban Local Bodies and Panchayati Raj Institutions will receive incentives for promoting installations in their jurisdictions.

Financial Assistance Structure

- For a 2 kW system: 60% of the cost will be covered by the Centre.
- For systems ranging from 2–3 kW: 40% of the cost will be covered.
- No subsidy will be provided for systems above 3 kW capacity.
- Example subsidies: ₹30,000 for 1 kW, ₹60,000 for 2 kW, ₹78,000 for 3 kW or more.

Other Features

- A Model Solar Village will be created in each district to encourage rooftop solar adoption in rural areas.
- The scheme also includes a payment security mechanism for Renewable Energy Service Company (RESCO) models and a fund for innovation.

Benefits

- Offers significant savings in electricity bills for households.
- Encourages self-reliance in energy production.
- Helps reduce the government's subsidy burden on electricity.
- Supports the shift to renewable energy and cuts down carbon emissions.
- Expected to create around 17 lakh jobs across manufacturing, logistics, installation, and support services.

GDP vs GVA

Context

India's Gross Domestic Product (GDP) reached a six-quarter high of 8.4% in Q3 of FY24, while the Gross Value Added (GVA) growth during the same period stood at 6.5%, according to the Ministry of Statistics and Programme Implementation.

Gross Value Added (GVA)

GVA represents the value of goods and services produced in an economy after deducting the cost of inputs and raw materials. It reflects the contribution of various sectors to the overall economy. GVA figures help policymakers understand which sectors are driving or slowing down economic growth.

Gross Domestic Product (GDP)

GDP is the total monetary value of all final goods and services produced within a country during a specific period. It includes taxes on products and excludes subsidies on them.

Difference Between GDP and GVA

- $GDP = GVA + \text{Product Taxes} - \text{Product Subsidies}$
- GVA focuses on the net value added at each stage of production, whereas GDP gives the broader picture of the economy by including tax and subsidy effects.
- GVA is considered a better measure for understanding sector-wise economic performance.
- GDP is used for international comparison and overall economic assessment.

PM-JANMAN (PM Janjati Adivasi Nyay Maha Abhiyaan)

Context

The implementation of the PM Janjati Adivasi Nyay Maha Abhiyaan (PM-JANMAN) is experiencing delays due to simultaneous data collection processes related to beneficiaries.

About PM-JANMAN

The Union Cabinet approved the scheme in 2023, and it will be implemented from FY 2023-24 to FY 2025-26. The primary aim is to ensure essential services for Particularly Vulnerable Tribal Groups (PVTGs) by integrating various central and centrally sponsored schemes.

Key Objectives of PM-JANMAN

The scheme will provide 11 essential services coordinated by 9 Ministries, including:

- Construction of pucca houses
- Development of connecting roads
- Providing piped water supply to households
- Ensuring community water facilities
- Mobile medical units with essential medicines
- Building hostels for tribal students
- Vocational education and skill development programs
- Establishing Anganwadi Centres
- Setting up Multipurpose Centres (MPCs) for community activities

Particularly Vulnerable Tribal Groups (PVTGs)

PVTGs are tribal communities identified as especially vulnerable due to:

- Primitive traits
- Geographical isolation
- Low literacy rates
- Stagnant or declining population growth
- Dependence on hunting or pre-agricultural activities

Initially identified as Primitive Tribal Groups (PTGs) by the Dhebar Commission (1973), they were later renamed as Particularly Vulnerable Tribal Groups (PVTGs).

Population Statistics

- According to the 2011 Census, India's PVTG population was approximately 10.45 crore.

- Spread across 75 communities in 18 states and the Union Territory of Andaman and Nicobar Islands.
- Odisha hosts the largest PVTG population, followed by Madhya Pradesh.

Remote Tribal Village Gets Power Connection for the First Time

Context

A tribal village in the Male Mahadeshwara Hills, Karnataka, recently received electricity for the first time. This marks a significant step toward achieving inclusivity and driving socio-economic development in remote regions.

Schemes Supporting Electrification

The electrification of this village was accomplished under the **Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)**, launched in 2014. The primary objectives of DDUGJY include rural electrification, separation of agricultural and household feeders, and strengthening rural electricity distribution infrastructure.

Key aspects of DDUGJY:

- Electrification of villages without power supply.
- Dedicated feeders for agriculture and domestic use.
- Infrastructure improvement to reduce transmission losses.
- Subsidy provision of 60%, rising to 85% for special category states.

Impact of Electrification

The availability of electricity brings multiple socio-economic benefits to rural communities:

- **Enhanced Education:** Students now have access to digital learning platforms and can study beyond daylight hours, improving educational outcomes.
- **Better Healthcare Facilities:** Reliable electricity allows health centers to operate effectively, providing essential services like refrigeration for medicines and adequate lighting.
- **Economic Development:** Electrification stimulates local businesses, supports irrigation for agriculture, and creates diverse livelihood opportunities, contributing to rural prosperity.
- **Empowerment of Women:** With reduced dependency on kerosene lamps, women experience improved safety and can more effectively manage and expand women-led businesses.

Challenges to Continued Progress

Despite successes, rural electrification faces challenges:

- **Infrastructure Deficits:** Many remote locations still lack adequate transmission infrastructure, hindering consistent power supply.
- **Affordability Concerns:** Ensuring subsidized power and affordable tariffs is essential for long-term sustainability in rural areas.
- **Renewable Energy Integration:** Expanding the use of renewable energy sources, especially solar-powered microgrids, is vital for sustainable and reliable electrification.

Resolving infrastructure gaps, improving affordability, and promoting renewable energy solutions are necessary to sustain the momentum of rural electrification, ensuring inclusive growth across India.

Capital Account Convertibility

Context

Arvind Panagariya, Chairman of the 16th Finance Commission, recently cautioned against hastily moving toward full capital account convertibility (CAC), given India's current level of per capita income.

What is Capital Account Convertibility?

Capital account convertibility refers to the freedom to convert domestic financial assets into foreign assets and vice versa without restrictions. It enables unrestricted movement of capital across borders, including foreign investments, remittances, and asset transfers.

Current Scenario in India

India currently practices **partial capital account convertibility**:

- Transactions under the **current account**, such as trade in goods and services, are fully convertible.
- Transactions under the **capital account** remain regulated, with controlled freedom in foreign investments and remittances.

Key Features of India's Capital Account Framework:

- **Foreign Direct Investment (FDI)**: Largely liberalized, yet subject to sector-specific limits and government approvals in sensitive areas.
- **Foreign Portfolio Investment (FPI)**: Permitted with limits on foreign ownership in certain sectors.
- **Outward Remittances**: Indian residents can invest abroad, but within specified limits under the Liberalized Remittance Scheme (LRS).

Advantages of Full Capital Account Convertibility

- **Greater Capital Inflows**: Encourages foreign investments, fueling economic growth and infrastructure development.
- **Integration with Global Financial Markets**: Enhances India's global competitiveness and financial market integration.
- **Improved Credit Ratings**: Signals economic maturity and stability, thus attracting greater investor confidence.

Challenges Associated with Full CAC

- **Macroeconomic Instability**: Unrestricted capital flows may lead to exchange rate volatility and inflationary pressures.
- **Risk of Capital Flight**: Rapid withdrawal of foreign investments during economic downturns could destabilize financial markets and deplete foreign reserves.
- **Exposure to External Shocks**: Increased vulnerability to global financial crises and sudden reversals of capital flows.
- **Banking Sector Vulnerability**: Requires robust banking and financial institutions capable of absorbing external financial shocks without extensive government interventions.

Tarapore Committee Recommendations To prepare for CAC, the Tarapore Committee suggested the following:

- **Fiscal Consolidation**: Maintain a manageable fiscal deficit of around 3-3.5% of GDP.
- **Monetary Stability**: Align domestic inflation and interest rates with international benchmarks.

- **Institutional Strengthening:** Enhance monetary policy frameworks for efficient decision-making.
- **Banking Sector Reforms:** Improve bank resilience and regulatory frameworks to handle increased capital flow.
- **Adequate Forex Reserves:** Maintain sufficient reserves to absorb external shocks post-CAC implementation.

Way Forward

Though full capital account convertibility offers significant potential, India should adopt a cautious and gradual approach, balancing openness with macroeconomic stability. Strengthening financial institutions, ensuring exchange rate stability, and developing robust economic resilience are crucial before moving toward complete capital account openness.

Poverty Estimation in India

Context

A recent study by economists Surjit S. Bhalla and Karan Bhasin highlights a significant decline in poverty and inequality in India over the past decade.

Key Highlights of the Study

The analysis relies on government data from household expenditure surveys conducted in 2022-23 and 2023-24. It reveals that poverty, measured at the international line of \$3.65 per day (Purchasing Power Parity), fell sharply from 52% in 2011-12 to just 15.1% in 2023-24. At the extreme poverty line (\$1.90 PPP per day), poverty in India is now below 1%.

Significant Rise in Consumption

The most substantial increases in consumption occurred among the bottom 30% of the population, marking record gains and reflecting improved economic conditions for India's poorest sections.

Reduction in Inequality

The study finds that consumption inequality in India has notably decreased. The Gini coefficient, a common measure of inequality, declined from 37.5 in 2011-12 to 29.1 in 2023-24. Such a reduction is exceptional among large, rapidly growing economies globally, matched only by smaller countries like Bhutan and the Dominican Republic.

Need for a Revised Poverty Benchmark

The study suggests that the current poverty lines are outdated. It recommends adopting new benchmarks aligned with contemporary standards, such as relative poverty measures used in Europe, or considering the consumption of the bottom one-third of the population as a new baseline.

Currently, official poverty estimates in India have not been updated since recommendations by the Tendulkar and Rangarajan committees, indicating the need for urgent revision by institutions like NITI Aayog.

Current Poverty Line Estimation in India

- **Tendulkar Committee (2009):**
Suggested poverty line was daily expenditure of ₹33 for urban and ₹27 for rural areas. The 2011-12 national poverty lines were ₹816 per month (rural) and ₹1,000 per month (urban).

- **Rangarajan Committee (2014):**

Recommended higher poverty lines—₹47 per day (urban) and ₹30 per day (rural). However, these recommendations were not officially adopted, leaving the Tendulkar poverty lines in use.

- **International Poverty Line:**

Defined by the World Bank as living below \$2.15 per day, adjusted for inflation and country-specific purchasing power parity.

Issues with India's Poverty Line Calculation

- **Inadequate Thresholds:**

Current poverty lines (₹965 urban, ₹781 rural per month) are criticized for being insufficient to reflect real-world living costs and basic needs.

- **Outdated Methodology:**

The methodology overly emphasizes calorie intake and does not accurately reflect contemporary consumption needs or standards of living.

- **Limited Non-Food Considerations:**

Essential non-food expenses like healthcare, education, and housing are not adequately included in the current poverty criteria.

- **State-Level Variations Ignored:**

The uniform national poverty line fails to capture regional cost-of-living differences, reducing the accuracy of poverty assessments.

- **Lack of Regular Updates:**

Official poverty measures have not been regularly updated to reflect inflation, evolving consumption patterns, and other economic changes, thus limiting their relevance.

Suggestions

- **Regular Updates:**

Periodically revise poverty thresholds to align with inflation, economic growth, and changing consumption patterns.

- **Broaden Poverty Criteria:**

Include non-food expenses like healthcare, education, housing, and sanitation in the poverty assessment.

- **Regional Adjustments:**

Introduce region-specific poverty lines to accurately reflect local cost-of-living differences.

- **Adopt Comprehensive Methodologies:**

Move beyond outdated calorie-based approaches toward holistic indicators reflecting nutritional adequacy, quality of life, and overall wellbeing.

IRCTC & IRFC Granted Navratna Status

Context

The Union Government recently awarded Navratna status to two key railway enterprises—Indian Railway Catering and Tourism Corporation (IRCTC) and Indian Railway Finance Corporation (IRFC). With this recognition, these two companies become India's 25th and 26th Navratna Central Public Sector Enterprises (CPSEs).

What is Navratna Status?

Navratna status is a prestigious recognition given by the Department of Public Enterprises (DPE), under the Ministry of Finance, to high-performing Central Public Sector Enterprises (CPSEs). This status grants greater financial autonomy and operational flexibility, enabling CPSEs to operate competitively.

Eligibility Criteria for Navratna Status:

To be eligible for Navratna recognition, a CPSE must fulfill these criteria:

- It must already hold Miniratna-I status and maintain a positive net worth.
- It should achieve a performance rating of “Excellent” or “Very Good” in the Memorandum of Understanding (MoU) evaluations for at least three of the past five years.
- Score a minimum of 60 points based on specific financial indicators like net profit, net worth, production costs, and manpower cost management.
- Have at least four independent directors appointed to its board.

Benefits of Navratna Status:

- **Enhanced Financial Autonomy:** Allows CPSEs to invest up to ₹1,000 crore or 15% of their net worth in projects without needing explicit government approval.
- **Operational Freedom:** Enables greater flexibility to establish joint ventures, subsidiaries, and strategic alliances both domestically and internationally.
- **Improved Market Credibility:** Navratna status significantly boosts a company's corporate image, attracting investors and facilitating easier access to financial markets.
- **Strategic Decision-Making:** Empowers the management in strategic decisions regarding capital investments, mergers, acquisitions, and human resources management.

About Indian Railway Catering and Tourism Corporation (IRCTC):

IRCTC was established in 1999 as a Central Public Sector Enterprise. Operating under the Ministry of Railways, it provides key services like railway ticket booking, onboard catering, and tourism services for Indian Railways.

About Indian Railway Finance Corporation (IRFC):

IRFC, under the administrative control of the Ministry of Railways, functions as the primary financial arm of Indian Railways. Established as a Non-Deposit Taking Systemically Important Non-Banking Financial Company (NBFC-ND-SI) and an Infrastructure Finance Company (NBFC-IFC) registered with RBI, IRFC's primary role is raising funds from domestic and international markets to finance railway assets. Its business model involves borrowing money and subsequently leasing assets back to the Indian Railways.

Geo-Mapping of Rubber Plantations**Context**

The Rubber Board has launched a geo-mapping project in Kerala to map rubber plantations.

What is Natural Rubber?

It comes from the rubber tree (*Hevea brasiliensis*), originally from the Amazon basin. It is a key industrial material.

About the Project

The project is part of certifying rubber under the Indian Sustainable Natural Rubber (iSNR) framework. It aims to comply with the EU Deforestation Regulation (EUDR). Trayambu Tech Solutions Pvt. Ltd. is handling the geo-mapping.

Objectives

- Record land ownership and plantation details
- Ensure deforestation-free supply chain
- Improve market access and global trade

About Rubber Board

- Established: Under Rubber Act, 1947
- Works under: Ministry of Commerce and Industry
- HQ: Kottayam, Kerala
- Promotes rubber production, trade, and welfare

Kisan Credit Card NPAs Surge**Context**

India's agricultural lending system is under pressure, as recent figures show a 42% increase in unpaid loans under the Kisan Credit Card (KCC) scheme in the last four years. This reflects the mounting financial challenges faced by farmers across the country.

What is the Kisan Credit Card (KCC) Scheme?

The Kisan Credit Card was launched in 1998 to help farmers access timely credit for their crop-related and allied activities. It was based on the recommendations of the R.V. Gupta Committee.

Under this scheme, loans are provided for:

- Crop production (seeds, fertilizers, etc.)
- Dairy, poultry, and fisheries
- Farm machinery and irrigation
- Post-harvest and household expenses

The KCC is offered by commercial banks, regional rural banks, and cooperative banks. If the loan is not repaid within three years, it is treated as a Non-Performing Asset (NPA).

Understanding NPAs in Agriculture

A Non-Performing Asset (NPA) is a loan where the borrower has not paid either the interest or principal for more than 90 days. The Reserve Bank of India (RBI) defines different categories:

- **Substandard Assets:** Overdue for up to 12 months
- **Doubtful Assets:** Overdue for more than 12 months
- **Loss Assets:** Loans deemed non-recoverable

According to RBI norms:

- **Short-term crop loans** are declared NPAs if overdue for two crop seasons
- **Long-term loans** become NPAs if overdue for one crop season

Current Trend in KCC NPAs

Between March 2021 and December 2024, the unpaid loan amount under KCCs rose from ₹68,547 crore to ₹97,543 crore. This sharp rise shows that more farmers are struggling to repay their loans due to worsening economic conditions in agriculture.

Why Are NPAs Rising in Agriculture?

1. **Unpredictable Weather:** Droughts, floods, and erratic rainfall are damaging crops and affecting farmers' income. Crop insurance coverage is limited, so many farmers are left unprotected.
2. **Low and Unstable Farm Income:** Farmers often don't get fair prices for their produce. There is a lack of proper Minimum Support Price (MSP) coverage and poor procurement systems.
3. **Frequent Loan Waiver Announcements:** When governments promise waivers, some farmers delay repayment hoping to benefit. This reduces the sense of responsibility to repay loans.
4. **Weak Credit Risk Assessment:** Banks sometimes provide loans without proper risk checks, especially to vulnerable farmers.
5. **Limited Access to Institutional Credit:** Many small and marginal farmers still rely on local moneylenders, making it harder to repay formal loans.
6. **Delays in Insurance Payments:** The PM Fasal Bima Yojana has often faced delays in settling claims, leaving farmers without compensation to repay loans.

Consequences of Rising NPAs

- **Strain on Banks:** Higher NPAs reduce banks' ability to lend more. Rural banks like RRBs and cooperatives are hit the hardest.
- **Burden on Government Finances:** Frequent bailouts and loan waivers strain public funds that could be used elsewhere in rural development.
- **Farmer Distress:** Debt is a leading cause of farmer suicides. Indebtedness contributes to poverty and mental stress in rural India.
- **Reduced Credit Access:** Banks become cautious and avoid lending to genuine farmers, creating a credit crunch for those in need.

What Can Be Done?

1. **Better Crop Insurance**
Ensure quick and fair settlements under PMFBY and expand insurance to cover more risks and crops.
2. **Limit Loan Waivers**
Waivers should be targeted only at truly distressed farmers to maintain credit discipline.
3. **Expand Access to KCC**
Bring more small and marginal farmers under the KCC network. Simplify application using Aadhar and PM-KISAN integration.
4. **Improve Loan Monitoring**
Use technology for early detection of distress. Train farmers in financial planning and loan management.
5. **Encourage Diversification**
Promote food processing, storage, and non-farm employment in rural areas to reduce income dependency on crops alone.

Conclusion

The growing volume of unpaid KCC loans reflects deeper structural challenges in Indian agriculture. A balanced strategy involving timely credit, better risk coverage, and sustainable farm practices is essential. Ensuring that farmers are financially secure will not only strengthen agriculture but also support the broader rural economy.

World Happiness Report 2025

The World Happiness Report 2025 has been released by the Wellbeing Research Centre at Oxford, in collaboration with Gallup and the UN Sustainable Development Solutions Network.

It ranks countries based on several indicators:

- GDP per capita
- Social support
- Health and life expectancy
- Freedom
- Generosity
- Perception of corruption

Finland remains the happiest country, followed by Denmark and Iceland.

Afghanistan ranks lowest.

India ranks 118th out of 147 countries, down from its best ranking of 94 in 2022.

Note: March 20 is celebrated globally as the **International Day of Happiness**, first proposed by Bhutan.

Unified Pension Scheme (UPS)

The Unified Pension Scheme (UPS) under the National Pension System (NPS) has been officially notified by the PFRDA. It will be effective from April 1, 2025.

Who is eligible?

- All current central government employees under NPS
- New recruits joining after April 1, 2025
- Retired NPS employees before March 31, 2025

Key Features:

- Employee contribution: 10% of basic pay + DA
- Government contribution: 10% + an additional 8%
- Guaranteed pension: Minimum ₹10,000/month after 10 years of qualifying service
- Enrollment must be completed within 3 months of April 1, 2025

Unified Logistics Interface Platform (ULIP)

The ULIP has completed over 100 crore API transactions. It was launched under the National Logistics Policy in 2022.

Purpose:

- Create a single-window platform for logistics
- Improve efficiency and reduce logistics costs
- Provide real-time visibility of logistics movement

ULIP is operated by NICDC Logistics Data Services Ltd. and conceptualized by NITI Aayog.

Vizhinjam Port Expansion Gets Environmental Approval

Phases II and III of the Vizhinjam Port project in Kerala have received environmental clearance.

- Located in Thiruvananthapuram, it is one of India's deepest seaports.
- Designed to handle Ultra Large Container Vessels.
- Developed under the DBFOT model.
- Aims to enhance India's cargo handling and reduce reliance on foreign ports.

Indigenous Farming Sustains Cassava Diversity

Context:

A new study emphasizes the role of traditional farming in conserving cassava diversity.

About Cassava:

- Also known as yuca or manioc, it is a tropical root crop.
- Introduced to Asia by Portuguese sailors.
- Nigeria is the world's top producer.
- Recognized under India's biofuel policy as a raw material for ethanol.

India's Wheat Output to Hit Record High

Context:

India is set to produce 115.3 million metric tonnes of wheat in 2024-25, a new record.

Highlights:

- Uttar Pradesh leads wheat production, followed by MP, Punjab, and Haryana.
- Favorable weather, scientific practices like zero tillage, and better irrigation have aided growth.
- Major export destinations include Nepal, Iraq, and UAE.

Production Linked Incentive (PLI) Scheme

Context

The central government has decided not to continue the Production Linked Incentive (PLI) Scheme beyond the existing 14 sectors. Although the scheme performed well in a few areas, its overall impact has been limited. Several sectors saw underperformance, missed targets, and delays in disbursing incentives.

Overview of the Scheme

The PLI Scheme was launched in 2020 by the Ministry of Commerce and Industry. The total budget outlay was ₹1.97 lakh crore. The main aim was to promote domestic manufacturing and reduce dependence on imports. It sought to offer financial incentives to companies based on increased sales from manufacturing in India. The scheme was also designed to attract foreign investment and create more jobs.

A total of 14 sectors were brought under this scheme. These include electronics, pharmaceuticals, automobiles, telecom, white goods, solar modules, textiles, and more. Companies—both Indian and foreign—could participate if they were registered in India.

Performance So Far

Although \$23 billion was allocated under the scheme, only \$1.73 billion, or around 8%, has been disbursed until October 2024. In terms of output, goods worth \$151.93 billion were produced—only 37% of the original target. Several well-known companies like Foxconn, Reliance, and Adani could not meet their expected production targets. Others faced delays and compliance issues.

Some sectors did show promise. For example, mobile phone manufacturing saw major growth, with production reaching \$49 billion in FY 2023–24. Apple started manufacturing high-end iPhones in India. The pharmaceutical sector also benefited, with exports touching nearly \$28 billion—double of what it was a decade ago.

Key Objectives and Features

- Encourage manufacturing in India as part of the 'Make in India' initiative
- Reduce reliance on countries like China
- Create employment in labor-intensive sectors
- Offer 4–6% incentives on incremental sales over a defined base year
- Increase the share of manufacturing in GDP to 25% by 2025

Achievements

- Boosted production in sectors such as electronics, pharma, and solar energy
- Helped attract foreign investment in strategic sectors
- Aligned with the China Plus One strategy by promoting India as an alternative manufacturing hub

Challenges and Concerns

- Only a small portion of the incentives has been disbursed despite meeting output goals in some cases
- Several companies missed deadlines or failed to scale up operations
- Bureaucratic delays and complex procedures hampered progress
- Firms reported delays in receiving subsidies, which created cash flow issues
- Instead of boosting manufacturing's share in the economy, it declined from 15.4% to 14.3% between 2020 and 2024

Conclusion

While the PLI scheme helped certain sectors grow and attracted investment, its limited overall impact, implementation delays, and unmet targets raise concerns. The government now aims to focus on ensuring better execution within the existing sectors instead of expanding or extending the scheme further. For India to become a true manufacturing hub, addressing procedural inefficiencies and supporting long-term capacity building remain crucial.

Progress on GM Food Crops in India

Context

The Secretary of the Department of Biotechnology (DBT) has recently confirmed that research and development on genetically modified (GM) food crops in India is progressing steadily. While commercial cultivation is still limited, ongoing efforts indicate a significant push toward enhancing India's bio-agriculture capabilities.

What Are GM Food Crops?

Genetically Modified (GM) crops are those whose genetic material is altered using modern biotechnology to introduce new traits. These traits are not possible through traditional breeding methods. Common objectives behind modifying crops include:

- Resistance to pests (e.g., Bt cotton, Bt brinjal)
- Tolerance to herbicides (e.g., GM soybean)
- Ability to withstand drought or salinity
- Improved nutritional value (e.g., Golden Rice with Vitamin A)

Status of GM Crops in India

Bt Cotton remains the only GM crop approved for commercial cultivation in India. It was introduced in 2002 and continues to dominate cotton farming.

Other developments include:

- **Bt Brinjal:** Approved in 2010 but cultivation was later banned due to public opposition.
- **GM Mustard (DMH-11):** Approved by the Genetic Engineering Appraisal Committee (GEAC) in 2022. It faces resistance due to environmental and legal concerns.
- **Golden Rice:** Aimed at tackling Vitamin A deficiency, this crop is under research but not yet approved.

India's Bio-Economy Growth

According to the India Bioeconomy Report 2025, India's bio-economy has seen tremendous growth:

- Grown from \$10 billion in 2014 to \$165.7 billion in 2024
- Accounts for 4.25% of India's GDP
- Maintains a compound annual growth rate (CAGR) of 17.9%

Major Segments in the Bio-Economy

- **Bio-industrial products** (biofuels, bioplastics): 47% share
- **Biopharma** (vaccines, diagnostics): 35%
- **Bio-IT/Research services** (clinical trials, data analysis): 9%

- **Bio-agriculture:** 8.1%

State-Wise Contribution

- Maharashtra: \$35 billion (21%)
- Karnataka: \$32 billion (19%)
- Telangana: \$19 billion (12%)

Biotech Startups and Job Creation

India had 10,075 biotech startups in 2024. This number is projected to grow to 22,500 by 2030, potentially generating 35 million jobs across sectors.

Advantages of GM Crops

- **Increased productivity:** Higher yields help improve food availability.
- **Reduced pesticide use:** Crops like Bt Cotton naturally resist pests, cutting down chemical use.
- **Adaptability to climate:** Crops can better survive droughts and poor soil.
- **Nutritional enhancement:** Fortified crops like Golden Rice target malnutrition.

Concerns and Risks

- **Environmental concerns:** Impact on biodiversity, soil health, and pollinating species like bees.
- **Health uncertainties:** Long-term health effects are still debated globally.
- **Corporate control:** Patented GM seeds may increase farmers' dependency on companies.
- **Cultural opposition:** Ethical and religious beliefs in some communities oppose genetic engineering.

Regulatory Framework in India

- **GEAC:** The main body under the Ministry of Environment for approving GM crop trials and releases.
- **FSSAI:** Regulates GM food imports and safety standards.
- **Environmental Protection Rules (1989):** Outline procedures for handling genetically modified organisms (GMOs).
- **BioE3 Policy:** Promotes biotech for food, medicine, and industrial purposes, encouraging innovation through genetic engineering.
- **BioSarthi Program:** Links startups with global experts to promote biotech entrepreneurship.

Global Scenario

Countries like the United States, Brazil, and China have embraced GM crops at scale. However, in India and many European nations, caution remains. The global debate continues between advocates of GM technology and those concerned about long-term impacts on health and environment.

Conclusion

India is gradually moving forward with GM food crops, balancing innovation and safety. While the potential is significant, progress depends on robust regulation, scientific validation, and public awareness to ensure benefits are widely shared and risks are minimized.

Demands for Grants

Recently, the Lok Sabha passed the Demands for Grants for various Ministries for the financial year 2025–26, approving a total expenditure exceeding ₹50 lakh crore. These demands were passed using the guillotine method, where demands for funds are considered approved without discussion due to time constraints.

Demands for Grants are proposals made by each Ministry or Department seeking approval for expenses from the Consolidated Fund of India. These are part of the Annual Financial Statement presented under Article 113 of the Constitution. They include both revenue and capital expenditures. The Rajya Sabha does not vote on them, and they require prior approval from the President before presentation in the Lok Sabha.

Eklavya Schools

Eklavya Model Residential Schools (EMRS) aim to provide quality education to Scheduled Tribe students, especially in remote tribal areas. These schools are fully residential and follow the national curriculum up to Class 12.

Introduced in 1997-98, EMRSs are funded by the Ministry of Tribal Affairs. Every block with a 50% tribal population and at least 20,000 tribal persons is eligible for one EMRS. The goal is to set up 728 such schools by 2026. The schools also provide vocational training, sports facilities, and cultural education, free of cost.

Rise in Tobacco Exports

India has seen a sharp rise in tobacco exports over the past four years due to growing global demand and reduced supply in countries like Brazil and Zimbabwe. Tobacco is a drought-resistant, short-duration cash crop and is grown in various agro-climatic zones.

Despite occupying only about 0.3% of India's arable land, tobacco farming is highly remunerative. The main growing states are Andhra Pradesh, Karnataka, and Gujarat. India is the second-largest tobacco producer globally and exports various types such as Flue-Cured Virginia, Bidi, and Cigar tobaccos.

Byadgi Chilli

Byadgi chilli is also known as Bedgi Mirchi. It is a popular variety of chili pepper grown in the Indian state of Karnataka, known for its deep red color and mild heat, used for its flavor and aroma in various Indian dishes. Farmers are distressed due to high input costs, surplus stocks, and strict export regulations. The chilli is known for its deep red colour and mild heat.

It is widely used in Indian cuisine, especially for making chilli powder and masalas. It is also used for extracting oleoresin, an ingredient in food and cosmetics. Byadgi chilli is protected under the Geographical Indication (GI) tag, linking it to its place of origin.

Farm Distress Index

A study titled "Agrarian Distress and PM Fasal Bima Yojana" highlighted the need for a nationwide Farmers' Distress Index (FDI). This tool would help predict agrarian distress and guide timely government interventions.

The FDI considers factors such as risk exposure, adaptation strategies, psychological stress, and economic vulnerability. It would help identify areas in need of support and alert authorities about possible distress situations three months in advance. It aims to ensure that the most affected farmers receive targeted and effective assistance.

Under-funding of Nutrient Subsidy Schemes

Context

A recent report by the Parliamentary Standing Committee on Chemicals and Fertilizers has flagged concerns regarding the reduced budget for fertilizer subsidies in 2025–26.

Key Concerns Raised by the Committee

1. Reduced Budget Allocation

- The Ministry of Finance has slashed the budget allocation for the Department of Fertilizers.
- This particularly impacts two major schemes:
 - The Nutrient-Based Subsidy (NBS) Scheme
 - The Urea Subsidy Scheme
- The Committee warns that this may adversely affect timely subsidy payments to farmers.
- It recommends seeking additional funds during the revised estimate stage.

2. Promotion of Nano Fertilizers

- The Committee encourages increasing production capacity for **nano urea** and **nano DAP**.
- It urges the government to promote these fertilizers as they improve yield and reduce traditional fertilizer usage.

3. Raw Material Security

- There is no progress on securing domestic mining leases for key fertilizer inputs.
- The Committee recommends signing agreements for exploration and refining to reduce import dependency.

4. Utilization of Funds

- There was underutilization of allocated funds in 2024–25 across various fertilizer segments.
- The government must ensure better planning and timely utilization of funds in the future.

5. Urea Subsidy Scheme Continuation

- Urea remains a critical input for India's food grain production.
- The Committee supports the continuation of the Urea Subsidy Scheme to keep it affordable for farmers.

Nutrient-Based Subsidy (NBS) Policy

Objective

- Launched in 2010 to make fertilizer subsidies nutrient-specific rather than product-specific.
- It aims to encourage the **balanced use of fertilizers**, promoting soil health and reducing the subsidy burden.

Legal Basis

- The NBS operates under the Fertilizer (Control) Order, 1985, governed by the Essential Commodities Act, 1955.
- The FCO regulates fertilizer licensing, usage standards, and trade.

Scope

- The scheme includes 25 grades of Phosphatic (P) and Potassic (K) fertilizers.
- These include DAP, MOP, MAP, and TSP.
- The government provides a fixed subsidy per kg of nutrients: Nitrogen (N), Phosphorus (P), Potash (K), and Sulphur (S).

How Subsidy Is Determined

- An Inter-Ministerial Committee (IMC) recommends per-nutrient subsidy rates every year.
- These rates depend on the market prices of fertilizer raw materials.
- The Department of Fertilizers finalizes the rates based on these recommendations.

Implications of NBS Policy

- Farmers continue to receive fertilizers at subsidized prices.
- However, the actual subsidy amount may vary depending on the global cost of raw materials.
- This helps the government manage its subsidy burden more flexibly.

Conclusion

The Committee's recommendations highlight critical funding and operational issues in the fertilizer sector. Ensuring adequate subsidies, promoting innovative inputs like nano fertilizers, and securing raw materials are key to sustaining agricultural productivity and farmer welfare.

Govt Revises MSME Classification Norms

The government has officially notified revised criteria for classifying Micro, Small, and Medium Enterprises (MSMEs), which will be implemented from April 1, 2025. These changes aim to update the existing norms related to turnover and investment, making them more relevant to today's economic conditions and helping MSMEs scale efficiently.

Why MSMEs Matter

MSMEs are vital to India's economy. They employ around 24 crore people, second only to agriculture. Out of 6.13 crore registered MSMEs, nearly 40% are owned by women, underlining their role in inclusive development. MSMEs also serve as ancillary units to large industries, promote rural industrialization, and contribute to reducing regional imbalances. They produce goods and services for both domestic and global markets and are essential to building an Atmanirbhar Bharat (self-reliant India).

Key Challenges Facing MSMEs

Despite their contribution, MSMEs face multiple challenges. One major issue is limited access to finance. Many small enterprises lack collateral or formal documentation, making it hard to get bank loans. According to SIDBI, only 16% of MSMEs receive formal credit, forcing others to rely on informal or high-interest loans.

Another concern is low technology adoption. Many MSMEs still use outdated machinery, which affects their quality, efficiency, and ability to compete internationally. For example, textile MSMEs in Surat still use traditional looms, making it hard to match global standards.

MSMEs also suffer from limited market access. Although they contribute 48% to India's exports, only a small share directly export due to lack of digital presence or licenses. In addition, over 70% of MSMEs report difficulty in hiring skilled workers. Delayed payments from large companies and public sector units also hurt cash flow and disrupt business operations.

Government Initiatives to Support MSMEs

To strengthen MSMEs, the government has launched several targeted schemes. The Udyam Registration Portal simplifies registration and gives enterprises a unique ID to access benefits. The Public Procurement Policy ensures that a portion of government purchases is reserved for Micro and Small Enterprises (MSEs). The Entrepreneurship and Skill Development Programme (ESDP) offers training to build entrepreneurial and technical skills. CGTMSE provides collateral-free credit up to ₹5 crore, helping small firms secure funding without traditional guarantees.

The Pradhan Mantri Mudra Yojana (PMMY) gives loans in four slabs:

- **Shishu** (up to ₹50,000)
- **Kishore** (₹50,000 to ₹5 lakh)
- **Tarun** (₹5 lakh to ₹10 lakh)
- **Tarun Plus** (₹10 lakh to ₹20 lakh)

The SFURTI scheme supports traditional artisans through cluster development, and PM Vishwakarma helps craftspeople with training, credit, and market access.

Conclusion

The revised classification norms are a step in the right direction. They will help MSMEs grow faster and access targeted support. But to ensure long-term impact, structural issues like funding gaps, outdated technology, skill shortages, and payment delays must be continuously addressed through focused reforms and timely interventions.

6% Equalisation Levy to be Abolished

Context

The government has proposed removing the 6% Equalisation Levy on online advertisements from April 1, 2025.

About the Levy

Introduced in 2016, it taxed online ads by foreign companies. Later, a 2% levy was imposed on e-commerce services, which was removed in 2024.

Significance

This move is seen as an attempt to ease trade tensions with the US, which had threatened to impose retaliatory tariffs.

Dalle Chilly Exported from Sikkim

Context

India has exported its first batch of Dalle Chilly from Sikkim to the Solomon Islands.

About the Chilly

Dalle Chilly is known for its bright red color, pungency, and high nutritional value. It has a Scoville rating between 100,000 and 350,000.

It received the Geographical Indication (GI) tag in 2020. The government is promoting its organic farming under the MOVCD-NER scheme.

Importance

This boosts India's organic spice market and gives international recognition to Sikkim's agricultural produce.

Regional Rural Banks (RRBs)

Context

Regional Rural Banks (RRBs) in India have reported a record profit of ₹7,571 crore in the financial year 2023–24. Key performance indicators such as Capital to Risk-weighted Assets Ratio (CRAR), Non-Performing Assets (NPAs), deposit base, and Credit-Deposit (CD) ratio have shown steady improvement.

About RRBs

RRBs were established to promote financial inclusion in rural India. They were formed based on the recommendations of the Narasimham Working Group in 1975 and were later given a statutory basis through the Regional Rural Banks Act, 1976.

The first RRB, *Prathama Bank*, was established in Uttar Pradesh and was sponsored by the Syndicate Bank.

Ownership Structure

RRBs follow a tripartite ownership model:

- Government of India: 50%
- State Government: 15%
- Sponsor Bank (a Public Sector Bank): 35%

They are regulated by the Reserve Bank of India (RBI) and supervised by the National Bank for Agriculture and Rural Development (NABARD).

Objectives of RRBs

- Provide banking services to rural and semi-urban areas.
- Offer credit to small and marginal farmers, agricultural laborers, artisans, and small entrepreneurs.
- Strengthen rural development through financial inclusion.

Recent Financial Performance

In FY 2023–24:

- RRBs recorded the highest-ever profit of ₹7,571 crore.
- Key indicators like CRAR and CD Ratio improved, reflecting better capital management and credit flow.

- Reduction in NPAs signaled improvement in loan recovery and asset quality.

Reforms and Consolidation

- RRBs have undergone phased consolidation to improve efficiency and viability.
- The Dr. K.C. Chakrabarty Committee (2009) and Dr. K.C. Vyas Committee (2001) recommended mergers and recapitalization for stronger financial performance.

Conclusion

RRBs play a crucial role in rural banking and economic development. Their improved performance in 2023–24 is a positive sign of their growing resilience and relevance in India's financial landscape. Continued policy support and modernization will be essential to sustain this momentum.

Gold Monetisation Scheme: Discontinuation of MLTGD Components

Context

The Ministry of Finance has decided to discontinue the Medium Term Government Deposit (MTGD) and Long Term Government Deposit (LTGD) components under the Gold Monetisation Scheme (GMS) with effect from March 26, 2025.

About the Gold Monetisation Scheme (GMS)

Launched in September 2015, the GMS was designed to mobilize idle gold held by households and institutions in India. It aimed to reduce the country's dependence on gold imports and utilize domestic gold stocks for productive economic purposes.

Structure of the Scheme

The GMS consisted of three deposit categories:

- **Short Term Bank Deposit (STBD):** 1 to 3 years, handled directly by banks.
- **Medium Term Government Deposit (MTGD):** 5 to 7 years.
- **Long Term Government Deposit (LTGD):** 12 to 15 years.

While STBD was managed by banks, both MTGD and LTGD were under the direct control of the Central Government.

Objectives of GMS

- Encourage gold holders to deposit their gold in banks.
- Reduce the demand for physical gold imports.
- Channel gold into the formal economy for investment and liquidity.
- Support the government's efforts to manage current account deficits caused by gold imports.

Reasons for Discontinuation

- Low public participation in the MTGD and LTGD categories.
- Administrative and logistical challenges in long-term deposit handling.
- Preference among depositors for short-term, flexible deposit options.

Impact of the Move

- The Short Term Bank Deposit option under GMS will remain operational.
- Depositors may continue to access gold deposit facilities via banks under STBD.

- The decision may lead to a redesign or consolidation of the scheme to better align with market response and investor preferences.

Conclusion

While the Gold Monetisation Scheme was a novel attempt to formalize India's vast gold holdings, its long-term deposit components failed to gain traction. Going forward, a simplified and more accessible model—possibly centered on short-term deposits—can help meet the dual goal of financial mobilization and reduced gold import dependency.

India's Bioeconomy: Current Status and the Road Ahead

Context

India's bioeconomy has crossed a valuation of \$165 billion in 2024, contributing over 4.2% to the country's GDP. According to the India BioEconomy Report, it is projected to reach \$300 billion by 2030 and \$1 trillion by 2047.

What is Bioeconomy?

Bioeconomy refers to the use of biological resources—like plants, animals, and microorganisms—for industrial purposes. It also includes mimicking biological processes to create goods and services. Ethanol production from sugarcane, for example, is a bio-based alternative to fossil fuels. Such practices are sustainable, cost-effective, and eco-friendly.

Why Bioeconomy is Important for India

1. **Economic Growth and Jobs:** Bioeconomy is expected to contribute significantly to India's future economy. Nearly 50% of the current value comes from industrial uses like biofuels and bioplastics. In the past three years, biotech companies have increased by almost 90%, generating jobs and innovation.
2. **Food and Agriculture Security:** Genetically modified crops help boost yield. Biofertilizers improve soil health. Fortified crops like golden rice address nutrition deficiencies in large populations.
3. **Healthcare Access:** India is a major global vaccine supplier, producing affordable drugs like the HPV vaccine CERVAVAC. Gene therapies are also emerging for rare diseases.
4. **Environmental Benefits:** Bioeconomy supports waste-to-energy projects, reduces fossil fuel use, and promotes biodiversity conservation. Examples include biogas from agri-waste and TERI's Oilzapper for cleaning oil spills.
5. **Climate Action:** It helps lower carbon emissions and supports India's 2070 net-zero goal through clean technologies and sustainable practices.

Government Push: BioE3 Policy and Key Initiatives

BioE3 Policy (2024)

The policy—Biotechnology for Economy, Environment, and Employment—was launched to drive bioeconomic growth. It focuses on:

- Creating Bio-AI Hubs and Biofoundries
- Promoting sustainable manufacturing
- Implementing a pan-India strategy, starting with Assam

Other Major Initiatives

- **BioSaarthi:** A mentorship program for emerging biotech entrepreneurs
- **National Biotechnology Strategy (2020–25):** Focuses on R&D and a \$150 billion target
- **BIRAC:** Funds and mentors biotech startups
- **National Biopharma Mission:** Supports vaccine and biosimilar development
- **PM-JIVAN Yojana:** Promotes bioethanol from agri-waste
- **SATAT and GOBARDHAN:** Encourage rural bio-CNG and waste-to-energy models
- **Global Biofuel Alliance (2023):** India-led global platform to reduce fossil fuel dependence
- **IP Guidelines (2023):** Promotes commercialization of research

Challenges in India's Bioeconomy

- **Regulatory Hurdles:** Delays due to overlapping agencies
- **Low Investment:** Risk-averse private sector limits funding
- **Weak IP Protection:** Bio-piracy and slow IP approvals affect innovation
- **Limited Industry-Academia Collaboration**
- **Import Dependence:** High-end biotech inputs are sourced from abroad
- **Shortage of Skilled Workforce**
- **Public Mistrust:** Resistance to GMOs and lab-grown foods
- **Environmental Risks:** Overuse of bio-resources can damage ecosystems

Way Forward

- **Improve Policy Implementation and Coordination:** Roll out the BioE3 framework in all states and establish a **National Bioeconomy Mission** for central coordination. States should follow Assam's lead by aligning local policies with national goals.
- **Boost Investment and Public-Private Partnerships:** Set up Bioeconomy Investment Funds and offer tax benefits to attract private investors. Expand PPPs in manufacturing and R&D.
- **Streamline Regulations:** Develop a **single-window clearance system** and harmonize approvals between agencies like DBT, FSSAI, and GEAC. Build biosafety and ethical review capacity.
- **Support Innovation and IP Ecosystem:** Set up specialized IP courts for biotech and fast-track patents. Strengthen links between universities and industry to convert research into products.
- **Build Biotech Infrastructure in Smaller Cities:** Invest in Bio-AI hubs, biofoundries, and incubation centers across Tier 2 and Tier 3 cities. Create shared testing labs and bio-industrial zones.
- **Empower Startups and Entrepreneurs:** Expand BioSaarthi and support early-stage funding through BIRAC. Encourage grassroots and women-led ventures in biotech.
- **Enhance Skilling and Education:** Introduce bioeconomy modules in universities and vocational programs. Set up centers of excellence in biotech fields like genomics and molecular biology.
- **Foster Global Partnerships:** Collaborate with countries like Japan, the US, and EU for R&D. Lead platforms like the Global Biofuel Alliance and One Health to build international leadership.

Conclusion

India's bioeconomy holds vast potential for inclusive growth, sustainability, and global leadership. With supportive policies, strategic investments, and innovation-driven reforms, it can become a \$1 trillion sector by 2047.

10th Anniversary of Sagarmala Programme

Context

The Sagarmala Programme was launched in 2015. It marks a decade of progress in India's maritime sector.

About

Sagarmala aims to modernize ports, improve logistics, and boost port-led development using India's vast 7,500 km coastline and 14,500 km of waterways. It forms a core part of Maritime Amrit Kaal Vision 2047 (MAKV) and builds on Maritime India Vision 2030.

Components

Sagarmala consists of 5 key pillars:

1. Port modernization
2. Port connectivity
3. Port-linked industrialization
4. Coastal community development
5. Coastal shipping and inland waterways

Implementation

Projects are implemented by central ministries, State governments, Port Trusts, and private players. A Special Purpose Vehicle (SPV) structure is adopted with help from the Sagarmala Development Company Limited (SDCL).

Achievements

- Coastal shipping rose by 118% in 10 years.
- Inland cargo transport grew by 700%.
- Vizag ranked among the top 20 container ports globally.

Innovation: S2I2 Initiative

The Sagarmala Startup Innovation Initiative (S2I2) was launched in 2025 to promote green shipping, smart ports, and entrepreneurship in maritime logistics.

Challenges

- Investment delays and low budget allocation.
- Land acquisition and environmental issues.
- Lack of port-hinterland connectivity.
- Social impacts on coastal communities.

Way Forward

- Focus on sustainable development and green ports.
- Promote indigenous shipbuilding and multi-modal logistics.
- Improve inter-agency coordination.

India's E-Retail Market Growth

Context

India's e-retail market is projected to reach \$170–190 billion by 2030.

Growth Drivers

- Youth population and urbanization.

- Rising income and purchasing power.
- Strong Tier-2 and Tier-3 city penetration.
- Brand consciousness and consumer credit access.

Current Status

- Second-largest global e-retail market after China.
- 270 million online shoppers in 2024.
- Q-commerce growing at over 40% annually.

Challenges

- Slowdown due to inflation and reduced consumer spending.
- Shifts in consumer habits impacting brand revenues.

Government Support

- 100% FDI permitted via the automatic route.
- Policies to simplify entry for global players.

Way Forward

- Integrate digital with physical retail.
- Target rural and semi-urban consumers.
- Invest in logistics and supply chains.

Combating Money Laundering and Terror Financing

Context

The RBI Governor addressed the FATF forum, highlighting a balanced approach against illicit financial activities.

Key Challenges

- Use of shell companies and digital currencies.
- Cross-border flows and judicial delays.
- Terror financing through NGOs, hawala, and cryptocurrencies.

India's Legal Framework

- **PMLA, 2002:** Main anti-money laundering law.
- **UAPA, 1967:** Targets terrorist funding.
- **FIU-IND:** Monitors financial data.
- **FCRA, 2010:** Regulates foreign donations to NGOs.

Recent Measures

- Shell companies crackdown.
- Crypto transaction regulation.
- Better coordination among ED, FIU, and RBI.

Way Forward

- Leverage AI and blockchain for monitoring.
- Strengthen global cooperation.
- Improve financial literacy and enforcement speed.

5 Years of National Technical Textiles Mission

In News

- The **National Technical Textiles Mission (NTTM)**, launched in 2020, has completed five years of implementation.

What are Technical Textiles?

- Technical textiles are specialized textile materials manufactured for their functional and performance characteristics, rather than decorative or aesthetic use.
- These materials are designed for durability, strength, flexibility, insulation, filtration, and protection.
- They are widely used in sectors like automotive, construction, healthcare, agriculture, defence, and industrial safety.

Examples include:

- Car seat belts and airbags
- Fire-retardant clothing
- Surgical masks and PPE kits
- Geotextiles for road construction
- Bulletproof jackets and parachute fabric

About National Technical Textiles Mission (NTTM)

- **Launched:** 2020 by the Ministry of Textiles
- **Objective:** To boost the growth of technical textiles in India and reduce import dependence.
- **Identified as:** A sunrise sector by the Government of India.

Key Components of NTTM

1. **Research, Innovation, and Development**
 - Supports indigenous R&D on new fibers and advanced manufacturing technologies.
2. **Promotion and Market Development**
 - Spreads awareness and promotes adoption across various sectors, including through **international collaborations**.
3. **Export Promotion**
 - Aims to increase India's share in the global technical textiles market.
 - Establishment of a **dedicated Export Promotion Council**.
4. **Education, Training, and Skill Development**
 - Includes dedicated training programs, curriculum development, and internships in collaboration with academic institutions and industries.

Challenges in the Sector

- **Low awareness** among industries and consumers about technical textile applications.
- **Dependence on imported machinery** and raw materials limits domestic competitiveness.
- **Shortage of skilled workforce** for advanced manufacturing and research.

Significance of Technical Textiles for India

- Plays a crucial role in national security, healthcare, infrastructure, and disaster management.
- Supports Make in India, Atmanirbhar Bharat, and employment generation in high-tech manufacturing.

- Enhances India's capability in medical preparedness (e.g., PPE kits during COVID-19).

Do You Know?

- India is the 6th largest textile exporter in the world, with a 3.9% share in global textile exports.
- The textile sector contributes 2% to India's GDP.
- By 2030, India aims to grow its textile sector to US\$ 350 billion, creating 3.5 crore jobs.

Way Forward

- Increase public-private partnerships to scale up domestic innovation and production.
- Encourage investments in machinery manufacturing and reduce import reliance.
- Introduce technical textile curricula in engineering and vocational institutions.
- Strengthen testing, certification, and standardization infrastructure.
- Promote Startups and MSMEs in the sector through targeted schemes and export incentives.

India Becomes World's 2nd-Largest Tea Exporter (2024)

Context

India became the second-largest tea exporter in the world in 2024, overtaking Sri Lanka.

Key Stats

- **Export volume:** 255 million kg in 2024.
- **Export value:** ₹7,111 crore (15% rise from 2023).
- **Main destinations:** Iraq (20%), UAE, Iran, Russia, US, UK.

Types of Tea Exported

- Black tea dominates (96%), followed by green, herbal, masala, and lemon tea.

Major Tea-Growing Regions

- **Assam:** Assam Valley, Cachar
- **West Bengal:** Dooars, Terai, Darjeeling
- **South India:** Nilgiris

Drivers of Growth

- Strategic promotion, branding, and better welfare of tea workers.
- Expansion of markets in West Asia, especially **Iraq** (forecast to import 40–50 million kg).

Tea Board of India

- Statutory body under the Tea Act, 1953, headquartered in Kolkata.
- Regulates and promotes Indian tea production and trade.
- Composed of 32 members representing various segments of the tea industry.

Electronics Component Manufacturing Scheme

Context

- Union Cabinet approved a ₹22,919 crore scheme to strengthen India's electronics component ecosystem.

Objectives: Attract global/domestic investments, enhance domestic value addition (DVA), and integrate with Global Value Chains (GVCs).

Expected Outcomes

- Investment: ₹59,350 crore.
- Production: ₹4,56,500 crore.
- Jobs: 91,600 direct jobs.

Sector Growth

- **Production** grew from ₹1.9 lakh crore (2014-15) to ₹9.52 lakh crore (2023-24).
- **Exports:** From ₹0.38 lakh crore to ₹2.41 lakh crore during the same period.

Key Government Initiatives

- **Make in India** (2014): Design & manufacturing boost.
- **PLI Scheme** (2020): Incentives for mobile and component manufacturing.
- **Semicon India Program** (2021): ₹76,000 crore outlay for semiconductors.
- **SPECS:** 25% capital expenditure support for electronic component production.

Challenges

- Import dependency, poor infrastructure, skilled labour shortage, high capital costs, and global competition.

Conclusion

With strategic policies and rising investment, India is emerging as a global hub for electronics and semiconductors.

India's Coffee Production

Context

India's coffee production projected to be 3.52 lakh metric tonnes (2024–25) due to good weather.

Highlights

- **Origin:** Baba Budan introduced Mocha seeds to Karnataka in 1600s.
- **Top producer:** Karnataka, followed by Kerala and Tamil Nadu.
- **Export:** \$1.29 billion in 2023–24; top buyers – Italy, Belgium, Russia.
- **Coffee types:** Arabica & Robusta (mostly unroasted exports).
- **Consumption:** Growing domestic demand due to café culture.

Coffee Board's Role

- Implements Integrated Coffee Development Project (ICDP) to enhance yield, promote new regions, and ensure sustainability.

Current Account Deficit (CAD)

Context

India's CAD widened to \$11.5 billion in Q3 FY25 but remained steady at 1.1% of GDP.

What is CAD?

- Happens when imports > exports of goods and services.
- Part of the Balance of Payments (BoP).

How to Reduce CAD?

- Boost exports, limit imports, currency devaluation, or improve competitiveness.

India Fell Behind in the Cotton Race

Context

- India has turned from the world's top cotton producer to a net importer.

Rise in Production

- Boosted by hybrid seeds (H-4, Varalaxmi) and Bt cotton (since 2002-03).
- Peak: 39.8 million bales in 2013-14.

Decline Since 2014

- Current: 29.5 million bales (lowest since 2008-09)
- Regulatory hurdles: Ban on GM trials, lack of innovation.
- Pest attacks: Pink bollworm resurgence due to stagnation in biotech.

Global Impact

- Helps US and Brazil in cotton exports.
- India may be forced to ease import tariffs.

Govt. Initiative

- 5-year Cotton Mission in Union Budget 2025-26 to revive productivity, especially in extra-long staple varieties.

Kosi Mechi Intra-State Link Project (Bihar)

Context

Approved by CCEA under PMKSY-AIBP with central assistance of ₹3,652.56 crore.

About the Project

- Links Kosi and Mechi rivers.
- Benefits Araria, Purnea, Kishanganj, Katihar.
- Irrigation for 2.1 lakh hectares in Kharif season.
- Utilizes surplus water and restores existing EKMC command.

PMKSY-AIBP

- Launched 2015; revised (2021-26) outlay ₹93,068 crore.
- Focus: Accelerate irrigation and water use efficiency.

Carriage of Goods by Sea Bill, 2024

Context

- Lok Sabha passed the Carriage of Goods by Sea Bill, 2024, replacing the old 1925 Act.

Highlights

- Modernises maritime law in line with Hague-Visby Rules.
- Clarifies rights, liabilities, and duties of carriers and shippers.
- Part of India's push for a strong maritime economy via PM Gati Shakti and Sagarmala.

NSO Released Energy Statistics India 2025

Context

The National Statistics Office (NSO) has released *Energy Statistics India 2025*, a detailed annual publication presenting data on energy reserves, production, consumption, capacity, and trade across different sectors and energy sources. It covers coal, petroleum, natural gas, and renewable energy.

Key Highlights of the Report

Energy Supply and Consumption

- In FY 2023-24, Total Primary Energy Supply (TPES) rose by 7.8%, reaching 9,03,158 Kilo Tonnes of Oil Equivalent (KToE).
- This reflects increased energy demand across industries and households, consistent with economic growth.

Renewable Energy Potential

- India's renewable energy potential as of March 31, 2024, is estimated at **21,09,655 Megawatts**.
 - **Wind energy** leads with 11,63,856 MW (55%).
 - **Solar energy** contributes 7,48,990 MW.
 - **Large hydro** potential is 1,33,410 MW.
- Key states with maximum potential: Rajasthan, Maharashtra, Gujarat, and Karnataka.

Installed Capacity of Renewable Energy

- The installed renewable energy capacity increased from 81,593 MW in March 2015 to 1,98,213 MW in March 2024.
- This represents a compound annual growth rate (CAGR) of 10.36%, indicating rapid expansion in clean energy infrastructure.

Electricity Generation Trends

- Electricity generated from renewable sources rose from 2,05,608 GWh in FY 2014-15 to 3,70,320 GWh in FY 2023-24.
- This shows a CAGR of 6.76%, reflecting a transition toward a greener power mix.

Per-Capita Energy Consumption

- Per-capita energy consumption improved from 14,682 Mega Joules/person (FY 2014-15) to 18,410 Mega Joules/person (FY 2023-24).
- The CAGR stands at 2.55%, showing better energy access and consumption patterns.

Reduction in Transmission and Distribution (T&D) Losses

- T&D losses reduced from 23% in FY 2014-15 to 17% in FY 2023-24.
- This indicates significant progress in strengthening grid efficiency and minimizing energy waste.

Sectoral Energy Consumption

- The industrial sector has shown the highest increase:
 - From 2,42,418 KToE in FY 2014-15 to 3,11,822 KToE in FY 2023-24.
- Other sectors, including residential, commercial, and agriculture, have also recorded steady growth in energy use.

Conclusion

The Energy Statistics India 2025 report underlines India's steady progress in expanding renewable energy, improving energy efficiency, and enhancing access. The data provides critical inputs for future policy formulation aimed at achieving sustainable energy security.

Government's ₹8 Trillion Borrowing Plan for First Half of FY26

The Government of India has unveiled a borrowing plan of ₹8 trillion for the first half of FY2025-26, accounting for 54% of the total borrowing target of ₹14.82 trillion. This move, to be executed via 26 weekly auctions, includes a focus on green financing and aims to balance fiscal needs with market stability.

Borrowing Composition by Maturity

- 3-year: 5.3%
- 5-year: 11.3%
- 7-year: 8.2%
- 10-year: 26.2% (issued every 5th week)
- 15-year: 14%
- 30-year: 10.5%
- 40-year: 14%
- 50-year: 10.5%

Green Bonds and T-Bills

- ₹10,000 crore to be raised through sovereign green bonds for eco-friendly projects.
- ₹19,000 crore in treasury bills planned for April-June:
 - 91-day: ₹9,000 crore
 - 182-day: ₹5,000 crore
 - 364-day: ₹5,000 crore

Debt Management Tools

- Buybacks and bond switches to manage maturity profile.
- Ways and Means Advances (WMA) limit set at ₹1.5 trillion for temporary cash mismatches.

Fiscal Targets and Market Outlook

- Fiscal deficit projected at ₹15.6 trillion (4.4% of GDP) for FY26.
- Goal: reduce central debt to 50% of GDP by 2030-31.
- Market expects mild softening in bond yields with stable liquidity.

SMILE Programme -Enhancing India's Logistics Infrastructure

The Strengthening Multimodal and Integrated Logistics Ecosystem (SMILE) Programme, supported by the Asian Development Bank (ADB), is a strategic initiative to modernise India's logistics sector. It is aligned with the National Logistics Policy and PM Gati Shakti National Master Plan.

Key Objectives

- Strengthen multimodal logistics infrastructure across governance levels.
- Standardise warehousing and logistics assets.
- Promote digitalisation and low-emission systems in external trade logistics.

Gender Inclusion Focus

- Conduct gender audits of land ports.
- Ensure integrated check posts meet gender-responsive criteria under the National Trade Facilitation Action Plan (2020–23).

Support to Atmanirbhar Bharat

- Boosts domestic manufacturing and integration into global trade networks.
- Enhances the competitiveness of Indian industries by reducing logistics costs.

Expected Impact

- Improves India's Logistics Performance Index ranking.
- Encourages private investment and job creation.
- Promotes sustainable and efficient logistics, contributing to long-term economic resilience.

Electronics Component Manufacturing Scheme

On March 28, 2025, the Union Cabinet approved the Electronics Component Manufacturing Scheme with a budget outlay of ₹22,919 crore. This move is part of India's broader strategy to strengthen its electronics manufacturing ecosystem and reduce dependency on imports.

Objectives and Focus

The scheme aims to raise Domestic Value Addition (DVA) in electronics from the current 20% to 40% within five years. It prioritises the local production of passive and active components, sub-assemblies, and bare components—critical building blocks of electronic devices.

Investment and Economic Impact

It is expected to attract ₹59,350 crore in investments, generate output worth ₹4,56,500 crore, and create 91,600 direct jobs. The initiative will also support indirect employment, boosting the overall economy and promoting self-reliance.

Incentive Structure and Innovation

Incentives are linked to factory turnover and job creation, replacing traditional production-linked models. This approach allows flexibility and addresses real-time challenges. Incentives will differ across component categories, supporting innovation and diversification.

Target Segments and Capital Goods

The scheme targets crucial areas such as display modules, camera modules, lithium-ion cells, and non-SMD components. It also promotes the manufacturing of capital goods needed for electronic assembly, opening opportunities in hubs like Coimbatore and Bengaluru.

- **Timeline and Strategic Importance**

The scheme will run for six years, including a one-year gestation period. Further implementation details will be announced soon. With electronics being a high-growth global industry, the scheme is a strategic step towards India's technological and economic advancement.

Health Risks of Martian Dust for Astronauts

With upcoming Mars missions planned by NASA and the Chinese Manned Space Agency, scientists are focusing on the serious health risks posed by Martian dust. Research shows that the unique properties of this fine, adhesive dust can endanger astronaut health during long-duration missions.

Composition and Hazards

Martian dust is extremely fine—just 4% the width of a human hair—making it easily inhalable. It contains harmful materials such as:

- **Silica:** Causes silicosis, a serious lung disease
- **Perchlorates:** Disrupt thyroid function
- **Heavy metals:** Includes chromium and arsenic, known to cause respiratory and systemic issues

Medical Challenges on Mars

- **No immediate medical help** due to 40-minute communication delays with Earth
- **No quick evacuation option**, making prevention the best strategy

Suggested Countermeasures

- **Air filtration systems** to maintain clean indoor habitats
- **Self-cleaning spacesuits** to prevent dust transfer indoors
- **Electrostatic devices** to remove dust from surfaces
- **Dietary solutions:** Vitamin C and iodine to counteract toxicity

Why This Research Matters

Understanding and mitigating Martian dust risks is essential to safeguard astronaut health. Future Mars missions must integrate these strategies into mission planning to ensure long-term human survival beyond Earth.

New Contracts for NAMIS and Light Vehicles to Boost Defence Indigenisation

The Ministry of Defence has signed two key contracts worth ₹2,500 crore to strengthen India's defence capabilities. The agreements include the procurement of the Nag Missile System (NAMIS) and nearly 5,000 light vehicles. Both contracts fall under the Buy (Indian-IDD) category, supporting indigenous defence manufacturing.

Nag Missile System (NAMIS)

- Developed by DRDO, NAMIS is a tracked anti-tank guided missile platform.
- Contract cost: ₹1,801.34 crore.
- Equipped with fire-and-forget technology for greater precision and lethality.
- Enhances the Army's mechanised warfare capabilities.

Light Vehicles for Armed Forces

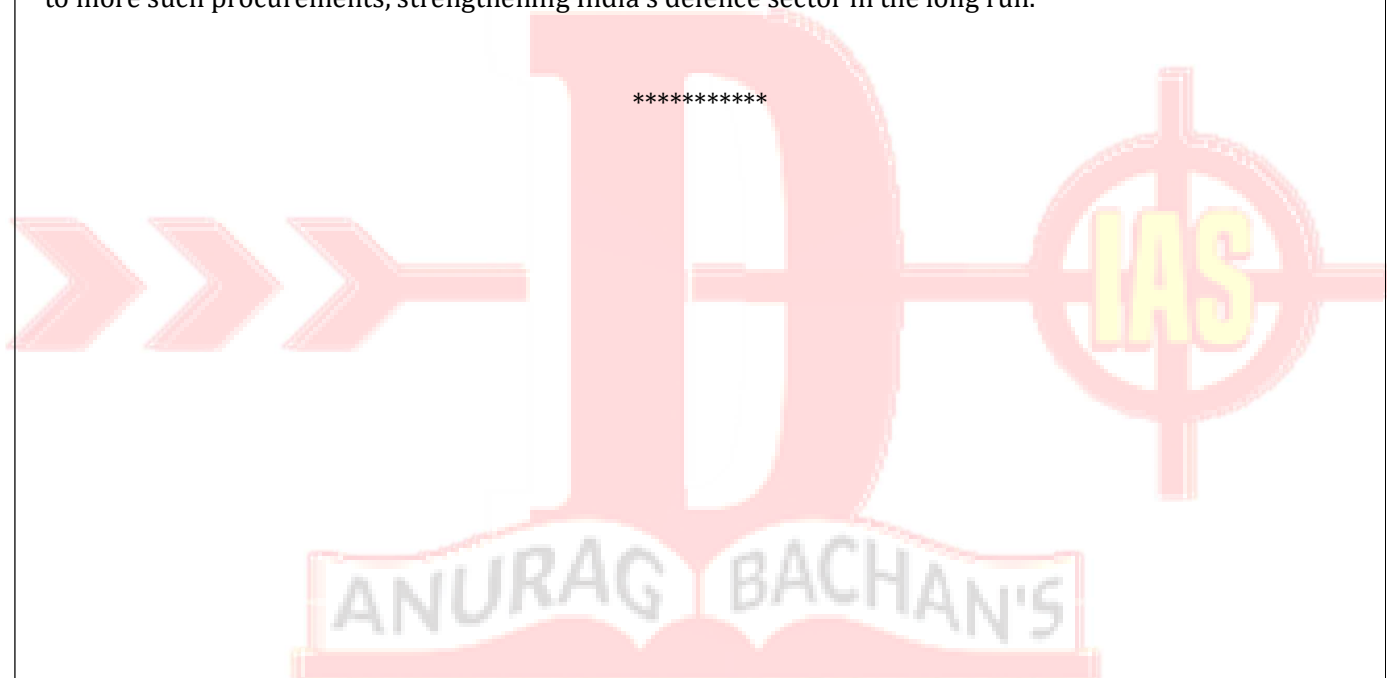
- Designed for multi-terrain mobility with a payload capacity of 800 kg.
- Features upgraded engines and modern defence mobility features.
- Aims to improve operational efficiency across diverse combat zones.

Strategic Impact

- Boosts operational readiness and modernisation of Indian Armed Forces.
- Supports Make in India and Aatmanirbhar Bharat initiatives.
- Expected to generate jobs and increase MSME participation.
- Reduces dependence on foreign defence imports.

Future Outlook

These contracts mark a significant step towards self-reliant defence production. They demonstrate India's commitment to indigenisation and enhanced combat readiness. The success of these programmes may lead to more such procurements, strengthening India's defence sector in the long run.



INDIAN SOCIETY

UNICEF's Kinship and Community-Based Care Programme (KCBCP)**Context**

India is gradually shifting from institutional child care to family-based care models. These include kinship care, foster care, and community support.

Key Issues

Seasonal migration often forces families to leave children behind or take them to work. This disrupts education and increases the risk of child labour.

About the Programme

UNICEF's Kinship and Community-Based Care Programme promotes keeping children with relatives instead of sending them to institutions.

Under Mission Vatsalya, India has significantly increased the number of children in non-institutional care—four times more since 2021–22.

Focus Areas

- Prevent family separation
- Strengthen child care systems
- Provide mental health support for children and caregivers

Global Obesity Crisis-Growing Concern for 2050**Context**

Two recent studies published in *The Lancet* project a serious rise in obesity worldwide. By 2050, over half of all adults—around 3.8 billion people—and one-third of children and teenagers—around 746 million—may be overweight or obese. These projections underline the urgency of addressing global health challenges linked to obesity.

Current Global Situation

As of 2021, 2.11 billion people, or 45% of the global population, were either overweight or obese. More than half of these cases are concentrated in eight countries: China, India, the USA, Brazil, Russia, Mexico, Indonesia, and Egypt. India alone had 180 million such individuals, making it a major contributor to the global burden.

Rising Obesity in India

- 1. Among Adults:** *Since 1990, the number of overweight and obese adults in India has grown steadily. By 2050, India is expected to have the world's second-largest population of overweight and obese adults.*
- 2. Among Adolescents:** India overtook China in 2021 as the country with the highest number of overweight and obese adolescents aged 15 to 24. This figure is expected to increase in the coming years.
- 3. Among Children:** India ranks second after China in childhood obesity (ages 5–14). However, by 2050, India is projected to close this gap as China's rates stabilize and India's continue to rise.

Findings from NFHS-5 (2019–21)

According to India's latest National Family Health Survey:

- 24% of women and 23% of men are either overweight or obese.

- Over 56% of women and 47% of men have a high waist-to-hip ratio, a risk marker for heart and metabolic diseases.
- Obesity among adults aged 15–49 is 6.4% for women and 4% for men.
- Childhood obesity in under-5 children rose from 2.1% in 2015–16 to 3.4% in 2019–21.

Why Obesity Matters

- **Health Risks:** Obesity leads to early onset of diseases such as Type 2 diabetes, heart conditions, and even cancer.
- **Rising Medical Costs:** Treating obesity-related illnesses increases pressure on healthcare systems.
- **Ageing and Obesity:** By 2050, a quarter of all obese people will be over 65, adding further strain to elderly care.
- **Nutritional Dual Burden:** In developing nations like India, undernutrition and obesity coexist, complicating public health efforts.

Key Drivers of Obesity

1. **Diet Shifts:** A move towards calorie-rich, processed foods high in sugar, salt, and fat.
2. **Ultra-Processed Food Expansion:** Global food companies have expanded rapidly into low- and middle-income nations.
3. **Weak Food Regulation:** Many countries still lack strong rules to limit unhealthy food availability.
4. **Consumption Trends:** India, Cameroon, and Vietnam saw the fastest rise in ultra-processed food intake between 2009 and 2019.

Possible Solutions

- **Support Local Food Systems:** Encourage traditional, wholesome diets and regulate global food chains.
- **Public Health Action:** Launch nationwide anti-obesity programs and introduce taxes on unhealthy food.
- **Medical Support:** Invest in healthcare infrastructure, treatment options, and advanced obesity medications.

How Obesity is Measured

Traditional BMI Classification

- Underweight: BMI < 18.5
- Normal: BMI 18.5 – 24.9
- Overweight: BMI 25 – 29.9
- Obese: BMI ≥ 30

Limitations

BMI does not distinguish between fat and muscle. It can misclassify muscular individuals and miss abdominal obesity, which is common in South Asia.

Lancet's New Classification (2024)

- **Clinical Obesity:** Based on BMI, waist size, muscle health, and body function.
- **Pre-clinical Obesity:** High BMI but without immediate health issues.

India's Government Initiatives

- **Fit India Movement:** Encourages daily physical activity.
- **POSHAN Abhiyaan:** Targets better nutritional outcomes, especially among children and women.

- **Eat Right India:** Promotes healthy, safe, and balanced diets.
- **Khelo India:** Supports youth participation in sports.
- **National Programme for NCDs:** Focuses on preventing lifestyle-related diseases.
- **FSSAI's Campaigns:** Includes 'Aaj Se Thoda Kam' (cutting sugar, salt, fat) and RUCO (reuse of cooking oil) initiatives.
- **Regulation of HFSS Foods:** Targets high-fat, sugar, and salt food products for stricter control.

Conclusion

The world is facing an obesity epidemic, and India is at the center of it. This rising trend, if unchecked, could overwhelm health systems and impact economic productivity. A multi-pronged approach—combining policy reform, community awareness, healthier food systems, and preventive healthcare—is essential to control this growing threat and protect future generations.

Women's Credit Growth in India

Context and Credit Surge

A recent report jointly released by TransUnion CIBIL, NITI Aayog's Women Entrepreneurship Platform (WEP), and MicroSave Consulting (MSC) shows a significant rise in women's participation in India's credit landscape. Between 2019 and 2024, the demand for retail credit from women has tripled. This growth, with a 22% compounded annual growth rate (CAGR), highlights rising financial awareness among women, particularly in semi-urban and rural areas. More than 60% of these borrowers now come from such regions, indicating a shift toward financial inclusion outside major cities.

Borrower Profile and Sector-Wise Distribution

Young women are playing a major role in this credit growth. Women under 30 years account for 27% of all retail credit uptake by women, compared to 40% for men in the same age group. Women's share in business loans has seen a fourfold rise over six years, although such loans still make up just 3% of the total loans accessed by women.

In terms of credit types, personal loans such as those for homes, vehicles, and consumer goods dominate. In 2024, nearly 3 crore personal loans worth ₹4.8 lakh crore were disbursed to women, accounting for 42% of all such loans. Gold loans are also popular. In 2024, 4 crore gold loans worth ₹4.7 lakh crore were given to women, up from just 19% share in 2019 to 36% in 2024. Business and commercial loans also showed a sharp increase, with 37 lakh new accounts opened and ₹1.9 lakh crore disbursed.

Credit Awareness and Challenges

There is also a sharp rise in women monitoring their credit health. Between December 2023 and December 2024, the number of women checking their credit scores increased by 42%. Gen Z women showed the highest growth, followed by millennial women, who form the majority of this group. Despite these advances, several challenges remain—such as fear of taking credit, poor banking experiences, lack of property for collateral, and absence of guarantors.

Government and Institutional Support

To encourage women entrepreneurs, several government schemes are in place. The Women Entrepreneurship Platform (WEP) serves as a single-window system to connect women to credit, funding, and training. The Stand-Up India Scheme provides collateral-free loans ranging from ₹10 lakh to ₹1 crore, with over ₹40,000 crore disbursed so far to women-led ventures. MUDRA loans, divided into Shishu,

Kishore, and Tarun categories, offer up to ₹10 lakh. More than 70% of these loans have gone to women. The Nari Shakti Dhan Yojana focuses on financial literacy and encourages women to manage and monitor their credit actively.

Role of Digital Lending and SHGs

Digital platforms and non-banking finance companies (NBFCs) are also promoting women-specific credit products. These products often offer lower interest rates and flexible repayment terms. In rural areas, Self-Help Groups (SHGs) and microfinance institutions (MFIs) provide easy access to credit, bypassing many of the traditional banking barriers.

Conclusion

The increase in credit uptake by women marks a positive step toward financial inclusion and empowerment. More women, especially in rural India, are now using loans for both personal and entrepreneurial purposes. While challenges remain, supportive policies, digital solutions, and targeted schemes are helping bridge the gender gap in formal finance. Sustained efforts in financial literacy, credit accessibility, and entrepreneurship support will be key to maintaining this momentum.

India's Linguistic Diversity and Marginalisation

Context:

Tamil Nadu Chief Minister M.K. Stalin recently stated that several North Indian languages, including Maithili, Brajbhasha, Bundelkhandi, and Awadhi, have been "destroyed by the hegemonic Hindi." This highlights concerns over language politics in India, particularly the dominance of Hindi and its impact on linguistic diversity.

India's Rich Linguistic Landscape

India is known for its vast linguistic diversity, shaped by historical, geographical, and cultural factors.

- **Ancient Linguistic Roots:** Proto-Dravidian languages were spoken in the Indian subcontinent as early as the 4th century BCE. Over the next millennium, these languages evolved into distinct linguistic forms.
- **Language Families:** Indian languages belong to five major language families—Indo-Aryan, Dravidian, Austroasiatic, Tai-Kadai, and Sino-Tibetan. The Indo-Aryan and Dravidian families account for the majority of native speakers.
- **Number of Languages:**
 - **2001 Census:** Recognized **122 major languages** and **1,599 other languages** spoken across the country.
 - **2024 Estimate:** India has approximately **453 living languages** today.
 - **Official Recognition:** The Constitution of India recognizes **22 scheduled languages** under the Eighth Schedule.

Constitutional Safeguards for Linguistic Diversity

India's Constitution provides legal protection to safeguard linguistic diversity and minority language rights:

- **Article 29:** Protects the rights of minorities to conserve their language, script, and culture.
- **Article 350A:** Mandates states to provide primary education in a child's mother tongue.

- **Article 350B:** Establishes a **Special Officer for Linguistic Minorities** to protect language rights.
- **Article 351:** Empowers the Union government to promote Hindi as a means of national communication.
- **Eighth Schedule:** Recognizes **22 scheduled languages** and provides them with official status.

Recognized Languages Under the Eighth Schedule

The **22 languages** listed in the Eighth Schedule include:

Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Odia, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili, and Dogri.

- **Historical Evolution:**

- Originally, 14 languages were included in the Constitution.
- Sindhi was added in 1967.
- Konkani, Manipuri, and Nepali were included in 1992.
- Bodo, Dogri, Maithili, and Santali were added through the 92nd Constitutional Amendment Act of 2003.

Classical Language Status in India

Currently, eleven languages hold Classical Language status, recognizing their historical and literary significance:

- **Tamil** (2004)
- **Sanskrit** (2005)
- **Kannada** (2008)
- **Telugu** (2008)
- **Malayalam** (2013)
- **Odia** (2014)
- **Marathi** (2024)
- **Pali** (2024)
- **Prakrit** (2024)
- **Assamese** (2024)
- **Bengali** (2024)

Linguistic Families of India

India's languages can be classified into five major linguistic families:

Linguistic Family	Region	Languages	Key Features
Dravidian	South India	Tamil, Telugu, Kannada, Malayalam	Agglutinative structure, extensive vowel usage
Indo-Aryan	North, West, Central India	Hindi, Bengali, Marathi, Gujarati, Punjabi	Derived from Sanskrit, rich in phonetic variation
Austroasiatic	Eastern and Central India	Santali, Khasi	Tonal languages with monosyllabic words
Tibeto-Burman	Northeast India	Meitei, Bodo	Complex tone systems, extensive use of prefixes and suffixes

Andamanese	Andaman Islands	Onge, Jarawa	Highly endangered, limited documentation
Tai-Kadai	Northeast India	Tai Phake, Khamti	Similar to Southeast Asian Tai languages, tonal structure

Government Efforts to Preserve Linguistic Diversity

- **Pluralistic Language Policy:** Emphasizes the use of the mother tongue in education, administration, and mass communication.
- **Language Bureau, Ministry of Education:** Monitors and implements policies for linguistic preservation.
- **Special Officer for Linguistic Minorities:** Ensures the protection of minority language rights.

Conclusion

India’s linguistic landscape is among the most diverse in the world, but concerns over the dominance of Hindi continue to spark debates. Constitutional safeguards and government initiatives aim to protect linguistic diversity, yet the challenge remains to ensure equal representation and preservation of all languages, especially those marginalized by dominant linguistic narratives.

India Achieves National Target for Maternal Mortality Ratio (MMR)

Context

India has successfully achieved the National Health Policy (NHP) target of reducing the Maternal Mortality Ratio (MMR) to 100 deaths per 100,000 live births. This marks a significant public health milestone and reflects sustained efforts in improving maternal care services across the country. Between 1990 and 2020, India recorded an 83% decline in MMR—far ahead of the global average reduction of 34% in the same period.

Understanding Maternal Mortality Ratio (MMR)

MMR refers to the number of maternal deaths per 100,000 live births within a given time frame. A maternal death is defined as the death of a woman during pregnancy, childbirth, or within 42 days of the termination of pregnancy due to causes related to or aggravated by pregnancy or its management. The indicator helps assess the quality and accessibility of maternal healthcare services in a country.

Significance of MMR

A lower MMR points to better antenatal care, skilled birth attendance, access to emergency obstetric services, and nutritional health of pregnant women. International agencies such as WHO and UNICEF use MMR as a key parameter to monitor global progress in maternal health. India’s current MMR of 100 (as of 2023) meets the NHP goal and sets the stage for further efforts to meet the Sustainable Development Goal (SDG) target of reducing MMR to less than 70 by 2030.

Trends in Infant and Child Mortality

India has also made notable progress in reducing infant and child deaths. The Infant Mortality Rate (IMR), defined as the number of deaths of children under one year of age per 1,000 live births, dropped by 69% since 1990, reaching 27 in 2023—slightly better than the global average of 28.2. Similarly, the under-5

mortality rate declined by 75%, significantly outpacing the global average decline of 58%. These indicators highlight improved nutrition, immunization coverage, sanitation, and institutional deliveries.

Need for Continued Interventions

Despite these gains, further action is needed to meet global targets. Strengthening primary healthcare systems, increasing awareness of prenatal care, ensuring skilled birth attendance in rural areas, and enhancing nutritional schemes for women and children will be crucial in sustaining and accelerating progress. India must also focus on bridging regional disparities and improving healthcare access among marginalized populations.

Conclusion

India's achievement in reducing MMR to 100 is a significant public health success, reinforcing its commitment to maternal and child health. With continued efforts in healthcare delivery, infrastructure, and education, the country is on track to meet the SDG targets and secure healthier futures for mothers and children alike.

Expansion of India's Social Security Net

Introduction

India is witnessing a major shift in its approach to social security. Traditionally limited to formal sector workers, the net is now gradually widening to cover informal and gig economy workers. This is a vital step toward ensuring inclusive growth and social protection for all.

Need for Social Security Expansion

Over 90% of India's workforce is engaged in the informal sector. These workers often lack job stability, health coverage, or retirement benefits. The COVID-19 pandemic exposed the vulnerabilities of these sections, reinforcing the need for a strong social security system.

Government Initiatives

To address this gap, several government schemes have been launched:

- **e-Shram Portal:** A national database of unorganized workers to link them with various social security schemes.
- **Pradhan Mantri Shram Yogi Maandhan:** A pension scheme for unorganized workers with monthly contributions.
- **Atal Pension Yojana (APY):** A voluntary scheme offering a fixed pension after 60 years of age, aimed at the unorganized sector.
- **Ayushman Bharat:** Health coverage of up to ₹5 lakh for economically weaker sections.

Social Security for Gig and Platform Workers

The Code on Social Security, 2020 introduced provisions to include gig workers—such as delivery partners and app-based service providers—under formal welfare schemes. It proposes contributions from both aggregators and the government to a welfare fund. Though notified, its implementation is still awaited.

Challenges in Implementation

- **Low Awareness:** Many workers remain unaware of available schemes.
- **Fragmented Coverage:** Multiple schemes lack coordination.

- **Voluntary Nature:** Many schemes are optional, leading to low enrolment.
- **Delayed Reforms:** The social security code's provisions for gig workers are yet to be operationalised.

Conclusion

Social security expansion is essential for an equitable and resilient economy. While the government has taken notable steps, timely implementation, better awareness, and simplified processes are needed to ensure that no worker is left behind.

Economic Loss from Road Accidents in India

Context

The Ministry of Road Transport and Highways has stated that road accidents cost India around 3% of its GDP every year. This is due to approximately five lakh accidents annually.

Data on Road Accidents (2022)

India witnessed 4.61 lakh road accidents in 2022. These caused over 1.68 lakh deaths and 4.43 lakh injuries. Compared to 2021, the number of accidents increased by 11.9%, while fatalities rose by 9.4%. Young adults aged 18–45 accounted for two-thirds of accident deaths. Two-wheelers were involved in nearly 45% of these fatalities. Overspeeding alone caused over 70% of accidents and deaths.

Why Road Accidents Impact the Economy

Accidents place a heavy burden on healthcare. Victims often need costly and long-term medical treatment. Damage to roads and vehicles requires financial resources for repair. Productivity losses due to injuries or deaths, especially among working-age populations, directly affect economic output. There is also a rise in insurance payouts, legal disputes, and reduced efficiency in transport and tourism. All these factors contribute to the loss of 3% of GDP.

Global and National Commitments

India is part of the UN's Decade of Action for Road Safety (2021–2030), aiming to reduce road deaths by 50%. It also signed the Brasilia Declaration in 2015, committing to the SDG target 3.6.

Government Initiatives

India has launched several measures to address this crisis. The National Road Safety Policy (2010) focuses on better infrastructure, emergency care, and public awareness. The e-DAR and iRAD platforms are used for data-driven accident management.

Compensation for accident victims has been improved. Awards and protections are in place for Good Samaritans. The government has also introduced fitness checks for vehicles and partnered with IIT Madras to set up a road safety research center.

Engineering Solutions

Efforts are ongoing to fix accident blackspots on highways. Road safety audits are now mandatory at all stages of highway development. The Motor Vehicles Amendment Act, 2019 increased penalties for violations such as speeding, drunk driving, and not wearing helmets or seat belts.

Way Forward

India can learn from countries like Sweden and Australia, which use a "Systems Approach" to road safety. More collaboration with IITs, CRRI, and the private sector is needed. Research, education, and funding from corporate sources can support safer roads.

Reducing road accidents is not only a public health goal but also an economic necessity. Preventive action today can help save thousands of lives and boost long-term economic growth.

Concerns Over '1 Person, 1 Family' Culture**Context**

- The Supreme Court has expressed concern over the rising individualistic lifestyle in India, contrasting it with the traditional ethos of "Vasudhaiva Kutumbakam".

Traditional Indian Family System

- Families have long been the bedrock of emotional, moral, and economic support.
- Encouraged generational wisdom, collective living, and social discipline.

Emergence of '1 Person, 1 Family' Culture

- Preference for nuclear or single-person households, especially in urban areas.
- Reflects economic aspirations, individualism, and changing values.

Key Factors Driving the Trend

- Urbanization and economic independence.
- Individualism over traditional values.
- Delayed marriages, live-in relationships, and rising divorce rates.
- Western cultural influence and digital lifestyles.
- Falling Total Fertility Rate (TFR) to 2.0.

Challenges Associated

- Mental health issues from loneliness.
- Increased cost of living for individuals.
- Weakened family bonds and intergenerational disconnect.

Conclusion

- While societal evolution is natural, cultural values and family ethics must be nurtured.
- Emphasis on empathy, respect, and unity can preserve social harmony in a changing India.

Dark Side of Digital Gambling in India**Context**

- Growing cases of youth suicides and debt traps highlight the dark side of online gambling in India.

Case Example

- Sai Kiran, a 21-year-old from Telangana, died by suicide after incurring heavy debts due to online gambling.

Trends in Online Gambling

- Legal market size: ~\$3 billion.
- Illegal offshore betting: \$20–30 billion (some estimates \$100 billion).
- UNICEF: Children in India spend over \$1,000/day on online gambling.
- Study: 19.5% of South Indian college students gamble, 7.4% show signs of addiction.
- IPL and similar events see sharp surges in illegal betting and suicides.

Reasons for Rise

- **Smartphones & UPI:** Over 600 million smartphone users and instant payments.
- **Aggressive Advertising:** Celebrities promote apps disguised as fantasy games.
- **Instant Loans:** Easy, no-KYC loans from shady apps.
- **Psychological Triggers:** Near-miss illusion, quick rewards, peer pressure.
- **Weak Enforcement:** Offshore platforms operate from tax havens like Curaçao, evade Indian laws.

Impacts

- **Mental Health Crisis:** Anxiety, depression, suicides, especially among youth.
- **Financial Ruin:** People take loans, sell assets, default.
- **Cybercrime & Money Laundering:** Illegal UPI and crypto transactions over ₹2,500 crore/month.
- **Youth Vulnerability:** Peer pressure and flashy lifestyle lure youth into quick money traps.

Current Regulations

- IT Rules (2021, amended 2023) for online gaming.
- 28% GST on gaming; offshore firms evade it.
- States like Telangana have banned online gambling.
- GST Council: Offshore betting firms must register in India – mostly unimplemented.

Challenges in Regulation

Offshore operations, legal grey zones, disguised promotions, and lack of influencer control.

Way Ahead

- Centralized legislation clearly defining legal vs illegal games.
- Empowered enforcement via I4C and cybercrime agencies.
- Global coordination to block illegal offshore operators.
- Stricter digital ad & influencer laws with real-time takedowns.

Child Labour: Data Discrepancy with NCRB

Context

- A study by Enfold and CivicDataLab using e-Courts data reveals eight times more child labour cases than NCRB records.

Key Findings

- **NCRB (2015-2022):** 1,329 cases under Child Labour Act.
- **e-Courts:** 9,193 trials in the same period.
- **Discrepancy due to:** NCRB's "Principal Offence Rule" (only most serious crime is counted).

Child Labour in India

- **Census 2011:** 10.1 million child labourers (ages 5–14), i.e., 3.9% of total child population.
- **Gurupadswamy Committee (1979):** Suggested banning child labour in hazardous sectors, multi-policy approach.

Impact

- **Economic:** Loss of skilled labour, reduced productivity.
- **Social:** Sustains poverty, promotes inequality, weakens social progress.

Challenges

- Poverty, poor education access, cultural norms, employer exploitation, migration, and awareness gaps.

Constitutional Provisions

- **Article 24:** Bans hazardous work for children below 14.
- **Article 21A & 39(e)(f):** Ensure education, dignity, and protection.

Key Laws & Schemes

- Child Labour Act (1986, amended 2016).
- RTE Act (2009), Mid-Day Meal Scheme, NCLP, ICPS, Labour Raids.

Levels and Trends in Child Mortality Report – 2024**Context**

- The “Levels and Trends in Child Mortality” report was released by the United Nations Inter-agency Group for Child Mortality Estimation (UN IGME).
- UN IGME is led by UNICEF, WHO, World Bank, and the UN Population Division.
- It provides annual data from 195 countries.

India’s Key Achievements

- Under-five mortality rate declined by 70%.
- Neonatal mortality rate dropped by 61%.
- Stillbirths reduced by 60.4% in India, compared to the global average of 37%.
- India ranks 7th globally in the reduction of stillbirths.

Contributing Factors to India's Success**1. Health Infrastructure Enhancement**

- **Establishment of:**
 - Maternity Waiting Homes
 - Newborn Care Units
- Focus on Skilled Birth Attendants, such as midwives and community health workers.

2. Ayushman Bharat Scheme

- World’s largest health insurance programme.
- Coverage of around US\$5,500 (₹5 lakh) per family per year.
- Provides:
 - Free institutional deliveries

- Essential medicines and diagnostics
- Postnatal care for mother and child

3. Improved Data & Digital Surveillance

- Strengthened maternal and child health data systems.
- Digital tools help track and improve service delivery and identify gaps.

Global Context and Ongoing Challenges

- In 2023, around 4.8 million children under age five died globally.
 - Includes 2.3 million newborns.
- **Causes:**
 - Preventable diseases
 - Inequitable access to quality healthcare
- **Disparities in:**
 - Socio-economic conditions
 - Living environments
 - Nutrition and immunization coverage

Conclusion

- India's progress reflects the success of targeted public health interventions.
- However, continued investments in healthcare, digital monitoring, and equity-focused policies are essential.
- Reducing child mortality is not just a health issue but a matter of human rights and sustainable development.

ANURAG BACHAN'S

ENVIRONMENT

Warmer Summer Due to El Niño

Context

The Indian Meteorological Department (IMD) has predicted that India may experience above-normal temperatures this summer due to ongoing El Niño conditions.

About the Forecast

- IMD issues summer forecasts every year in early March.
- The summer season in India begins in March and ends in May, before the monsoon.
- El Niño is expected to continue throughout this summer.
- Rainfall in March may exceed the normal average of 29.9 mm.

Understanding the Ocean-Atmosphere System**Normal Conditions**

- Trade winds blow westward along the equator, moving warm water from South America to Asia.
- Cold water rises from the ocean depths to replace the warm surface water.
- This creates low pressure and causes heavy rainfall over Indonesia and nearby areas.
- This pattern supports the Indian monsoon system.

Abnormal Conditions

- El Niño and La Niña usually begin between March and June.
- They peak during winter and weaken afterward.
- These phases can last a year, and sometimes occur in consecutive years.

What is El Niño?

- “El Niño” means “Little Boy” in Spanish.
- It is a warming of sea surface temperatures in the central and eastern Pacific Ocean.
- During El Niño, trade winds weaken and warm water moves toward the west coast of the Americas.
- As a result, cold water gets pushed toward Asia.

Impact of El Niño on India

- **Reduced Rainfall:** El Niño leads to weak monsoons and droughts.
- **Higher Temperatures:** It increases overall temperatures across India.
- **Forest Fires:** Dry conditions raise the risk of forest fires.
- **Water Scarcity:** Less rainfall causes drinking water and irrigation issues.
- **Fisheries Affected:** Changes in sea temperatures disturb fish migration and reduce catches.

What is La Niña?

- La Niña means “Little Girl” in Spanish.
- It has the opposite effect of El Niño.
- Trade winds become stronger, pushing warm water toward Asia.
- This cools the eastern Pacific Ocean.
- La Niña usually brings better rainfall to India.

International Big Cat Alliance (IBCA) officially comes into force

Context

The Union Cabinet has given its approval for the formation of the International Big Cat Alliance (IBCA), which focuses on the global conservation of the world's seven major big cats—tiger, lion, leopard, snow leopard, jaguar, puma, and cheetah. Among these, five species are found in India.

Launch and Establishment

IBCA was launched by Prime Minister Narendra Modi on April 9, 2023, during the celebration of 50 years of Project Tiger. The Union Cabinet formally approved its establishment on February 29, 2024. Its headquarters will be located in India.

Purpose and Membership

The alliance is focused on conserving seven big cat species across the globe. Membership is open to all United Nations countries. This includes both range countries, where these cats naturally exist, and non-range countries that wish to support global conservation efforts. The alliance brings together 96 countries to build a collaborative, multi-nation, and multi-agency conservation platform. The government has committed a one-time budgetary support of ₹150 crore for a period of five years (2023–24 to 2027–28).

Institutional Framework

The alliance was established by the Government of India through the National Tiger Conservation Authority (NTCA) under the Ministry of Environment, Forest and Climate Change. The formal creation order was issued on March 12, 2024. IBCA serves as a global platform for cooperation in big cat conservation.

IBCA's governance will include an Assembly of Members, a Standing Committee, and a Secretariat. The headquarters will be in India. This structure will facilitate cooperation among countries, allowing for data-sharing and joint action plans to protect big cat species and their ecosystems.

Objectives of the Alliance

The key aim of IBCA is to stop the decline of big cat populations through joint action. It brings together global stakeholders to promote shared learning and best practices. The alliance also aims to ensure financial support for conservation efforts and foster coordinated strategies to protect big cat habitats.

IBCA aims to become a unified platform for big cat conservation. It enables member countries to exchange strategies, case studies, and technical expertise. The alliance will create a central knowledge base and a shared fund to support conservation programs. It also seeks to strengthen species-specific intergovernmental networks and regional initiatives to enhance ecological stability and resilience against climate change.

India's Role in Global Conservation

India has a strong history in wildlife conservation. Project Tiger, launched in 1973, played a crucial role in preserving tiger populations and their habitats. India also initiated Project Cheetah, with the support of Namibia and South Africa, to reintroduce cheetahs into the wild. The country works with neighbors like Nepal, Bhutan, and Bangladesh through transboundary landscapes such as the Terai Arc, Kanchenjunga region, and Sundarbans.

The alliance highlights India's leadership in big cat conservation and its commitment to global biodiversity. It strengthens international cooperation in wildlife protection and supports India's long-term goals of ecosystem conservation, climate resilience, and sustainable development.

Development of Agaléga Island

Context

Prime Minister Narendra Modi, along with the Prime Minister of Mauritius, jointly inaugurated major infrastructure projects on North Agaléga Island. These include a newly developed airstrip and the St. James Jetty.

Significance

- This initiative marks a significant development in India–Mauritius relations, reinforcing their longstanding ties based on shared history, culture, and people-to-people connections. With over 70% of the Mauritian population being of Indian origin, this partnership carries both emotional and strategic depth.
- Agaléga Island holds strategic importance due to its location in the western Indian Ocean. The addition of a modern airstrip and a functional jetty significantly enhances Mauritius' capacity for maritime security and surveillance. These facilities will improve the nation's ability to monitor key sea lanes and contribute to maintaining peace and security in one of the world's busiest maritime zones.
- This development aligns with India's maritime vision of SAGAR—Security and Growth for All in the Region. By building infrastructure in small island nations like Mauritius, India is not only promoting regional stability but also assisting its neighbors in enhancing their maritime capabilities. The focus is on fostering mutual growth and ensuring collective security across the Indian Ocean region.

Strategic and Future Prospects

Agaléga consists of two small islands located in the western part of the Indian Ocean. Together, they cover an area of about 26 square kilometers. The islands are situated roughly 1,050 kilometers to the north of mainland Mauritius and are officially part of the Mauritian territory.

Although Agaléga Island itself does not possess significant natural resources, its location gives strategic access to surrounding waters. Future exploration might uncover underwater resources such as oil, gas, or minerals. The new infrastructure also increases the island's potential for naval presence and maritime operations. This could serve India's strategic interests by expanding its presence in the Indo-Pacific and securing key maritime corridors.

India's Regional Commitment

India's role in the development of Agaléga Island reflects its broader commitment to being a responsible regional power. The collaboration underscores India's dual focus on strengthening bilateral relations and supporting capacity-building in neighboring countries, while also safeguarding its strategic interests in the Indian Ocean region.

Gharials in India

Context

Ten gharials were recently released into the Chambal River at the National Chambal Gharial Sanctuary, Madhya Pradesh.

About Gharials

These river-dwelling reptiles are known for the male's pot-shaped snout. Unlike crocodiles, gharials are fish-eaters and pose no threat to humans. They require deep, fast-flowing rivers and are found in rivers like Chambal, Yamuna, and Brahmaputra.

Conservation Status

They are listed as Critically Endangered by IUCN and protected under Schedule I of the Wildlife Protection Act, 1972.

Conservation Efforts

Initiatives include Project Crocodile, the Chambal Sanctuary, and captive breeding programs in Uttar Pradesh, Madhya Pradesh, and Rajasthan.

Cities Coalition for Circularity (C-3) Launched

Context

India recently launched the Cities Coalition for Circularity (C-3) at the 12th Regional 3R and Circular Economy Forum in Asia and the Pacific, held in Jaipur. This international coalition aims to foster collaboration among cities through knowledge-sharing and public-private partnerships to promote circular economy practices.

Key Highlights of the Event

- India's Prime Minister highlighted the country's commitment to a Pro-Planet People (P3) approach, emphasizing the importance of the 3Rs—Reduce, Reuse, and Recycle—for sustainable urban development.
- An MoU was signed for the second phase of CITIIS (City Investments to Innovate, Integrate, and Sustain). Under CITIIS 2.0, agreements worth ₹1,800 crore will support 18 cities across 14 states, serving as model projects to inspire sustainable practices in other urban centers.

Background

The Regional 3R and Circular Economy Forum was initiated in 2009 to promote regional cooperation in waste management and circular economy among rapidly urbanizing Asia-Pacific nations. The Hanoi 3R Declaration (2013-2023) set out 33 voluntary goals to move towards resource-efficient and circular economic models. The forum has also actively advocated for a global treaty on plastic pollution.

About Cities Coalition for Circularity (C-3)

Cities Coalition for Circularity (C-3) is an international alliance designed to assist cities in adopting circular economy principles. Its primary objectives include:

- Reducing waste through improved segregation, composting, and upcycling.
- Promoting resource efficiency via reuse practices and shared material resources.
- Encouraging development and investment in sustainable infrastructure.

Significance of C-3 for Urban Sustainability

- **Mitigating Climate Change:** By reducing waste and optimizing resource use, the coalition aims to lower greenhouse gas emissions significantly.
- **Economic Opportunities:** Adopting circular economy practices creates business opportunities in recycling, waste management, and eco-friendly manufacturing sectors.
- **Building Resilient Cities:** Reducing dependence on finite resources strengthens cities' resilience against supply chain disruptions and economic downturns.
- **Job Creation:** Promotes employment opportunities in renewable energy, sustainable infrastructure, and environmentally friendly industries.

- **Enhanced Quality of Life:** Cleaner environments and better-managed waste improve public health and the well-being of urban residents.

Circular Economy in Global and Indian Context

Globally, cities like Amsterdam, Copenhagen, and Tokyo have successfully implemented circular economy initiatives under frameworks similar to C-3. India is also making significant progress in adopting circularity through:

- **Swachh Bharat Mission:** Encourages systematic waste segregation and recycling nationwide.
- **Smart Cities Mission:** Integrates sustainability into urban planning and infrastructure development.
- **Extended Producer Responsibility (EPR):** Holds manufacturers responsible for managing their products throughout their lifecycle.
- **GOBAR-Dhan Scheme:** Currently active in approximately 67.8% of districts in India, promoting waste-to-energy initiatives.

Challenges in Implementing Circular Economy in Cities

- Limited public awareness and technical expertise.
- High upfront investments required for infrastructure development.
- Resistance to change from businesses and consumers accustomed to linear economic practices.
- Inadequate policy frameworks and weak enforcement mechanisms.

Way Forward

To successfully implement circular economy practices, cities need to:

- Formulate and strictly enforce clear policies supporting circularity.
- Invest in research and innovation to develop sustainable materials and efficient recycling technologies.
- Conduct widespread public awareness campaigns to educate communities on the benefits of adopting circular lifestyles.
- Strengthen partnerships between governments and the private sector to scale and replicate successful circular economy models.

Avalanche

Context

An avalanche recently hit the Border Roads Organisation (BRO) project at Mana in Uttarakhand's Chamoli district, highlighting the natural risks in high-altitude zones.

Definition and Causes

An avalanche is a rapid flow of snow, ice, and debris down a slope. It commonly results from weak bonding between snow layers, sudden loading, or vibrations. These can be triggered by natural events or human activity.

Types of Avalanches

- **Sluffs:** Composed of dry, powdery snow, typically small and less harmful.
- **Slabs:** Large, compacted snow blocks breaking loose from deeper layers, often more dangerous.

Contributing Factors

Weather events, slope steepness, terrain conditions, and the snowpack structure significantly influence avalanche formation. Earthquakes or even a single hiker can trigger these events.

Avalanche vs. Landslide

Unlike avalanches, which involve snow and ice, landslides consist of soil and rock. Avalanches are faster and occur on snow-covered mountains, whereas landslides happen across varied terrains and are mostly slower.

National Board for Wildlife

Context

The Prime Minister recently chaired the 7th meeting of the National Board for Wildlife (NBWL) at Gir National Park, Gujarat. The meeting emphasized several strategic decisions aimed at enhancing wildlife conservation and addressing human-animal conflict across India.

Key Outcomes of the Meeting

One of the major highlights of the meeting was the release of India's first comprehensive estimate of riverine dolphin populations. As per the report, 6,327 river dolphins were found across 28 rivers in 8 Indian states, with Uttar Pradesh hosting the highest population, followed by Bihar, West Bengal, and Assam. Additionally, the foundation stone for the National Referral Centre for Wildlife Health and Disease Management was laid in Junagadh. This center is expected to serve as a central hub for managing wildlife health and monitoring zoonotic diseases.

To address increasing instances of human-wildlife conflict, the NBWL proposed the establishment of a Centre of Excellence at the Wildlife Institute of India's campus in Coimbatore, in collaboration with SACON (Salim Ali Centre for Ornithology and Natural History). Rapid Response Teams will also be technologically equipped to act swiftly in mitigating conflict situations. Plans were also announced for the introduction of cheetahs at new locations, including Gandhisagar Sanctuary in Madhya Pradesh and Banni Grasslands in Gujarat, to further the cheetah reintroduction program.

About the National Board for Wildlife (NBWL)

The National Board for Wildlife, reconstituted in 2022, serves as the apex advisory body on wildlife conservation in India. It replaced the earlier Indian Board for Wildlife established in 1952. The Prime Minister of India serves as the Chairperson of the NBWL, with the Union Minister for Environment, Forest and Climate Change acting as Vice-Chairperson. The Board comprises 47 members including government officials, conservationists, ecologists, and representatives from various sectors including the armed forces.

Functions and Mandate of NBWL

NBWL's approval is mandatory for several key activities such as construction of tourist lodges within protected areas, alteration of the boundaries of protected areas, and diversion or destruction of wildlife habitats. It also plays a role in de-notification of tiger reserves and assesses the impact of large-scale projects on biodiversity and ecosystems.

About Gir National Park

Gir National Park, located in the Saurashtra region of Gujarat, was initially declared a sanctuary in 1965 and later notified as a national park in 1975. It is globally renowned as the only place outside Africa where Asiatic lions can be seen in their natural habitat. Since the 1960s, the population of Asiatic lions in Gir has grown from fewer than 200 to 674 as per the 2020 census. Apart from lions, Gir hosts more than 40 species of mammals and over 425 species of birds, making it a biodiversity hotspot in western India.

First Comprehensive Estimate of River Dolphins in India

Context

India has released its first nationwide assessment of river dolphin populations under the ambit of **Project Dolphin**, launched in 2020. This comprehensive survey provides critical insights into the status and distribution of freshwater dolphin species in Indian rivers.

Key Findings

According to the survey, India is home to two freshwater dolphin species—the Ganges river dolphin (*Platanista gangetica*) and the Indus river dolphin (*Platanista minor*). The survey estimates that there are 6,327 river dolphins in total. Of these, 6,324 are Ganges river dolphins and only three are Indus river dolphins, found in the Beas River of Punjab. Uttar Pradesh recorded the highest number of Ganges dolphins, followed by Bihar, West Bengal, and Assam.

Ganges River Dolphin

The Ganges dolphin, locally known as *Susu*, is functionally blind and relies on echolocation to navigate and hunt. It inhabits the Ganga and Brahmaputra river basins in India, Nepal, and Bangladesh. The species is recognized as India's **National Aquatic Animal** since 2009 and also designated as the **State Aquatic Animal of Assam**. Major threats to its survival include habitat fragmentation, pollution, and illegal fishing practices.

Indus River Dolphin

The Indus dolphin, known locally as *Bhulan*, is primarily found in the Indus River system of Pakistan. A small population survives in the Beas River in India. It is also functionally blind and relies on echolocation. Due to its limited range and fragmentation of habitat, the species is under severe threat. It has been recognized as the **State Aquatic Animal of Punjab**.

Conservation Status

Both dolphin species are listed under **Schedule I of the Wildlife Protection Act, 1972**, which grants them the highest degree of protection in India. They are also included in Appendix I of CITES and the Convention on Migratory Species (CMS). On the IUCN Red List, both species are classified as Endangered.

Irrawaddy Dolphin

In addition to the two river dolphin species, India is also home to the Irrawaddy dolphin, which inhabits brackish water lagoons like Chilika Lake in Odisha. Unlike the other two species, the Irrawaddy dolphin is not blind and has a rounded head without a beak. It is classified as **Critically Endangered** on the IUCN Red List.

Importance of River Dolphins

River dolphins serve as indicators of the health of freshwater ecosystems. Their presence signifies clean and well-functioning river systems. They play a vital ecological role by regulating fish populations and contribute to carbon sequestration, water purification, and flood regulation. Culturally, they hold symbolic value in many local communities and are also central to promoting eco-tourism and sustainable development.

58th Tiger Reserve: Madhav National Park

Context

Madhav National Park in Madhya Pradesh has been declared India's 58th Tiger Reserve.

About the Park

- Location: Shivpuri, Madhya Pradesh
- Rivers: Manier and Sind
- Lakes: Sakhya Sagar (a Ramsar site), Madhav Sagar
- Vegetation: Dry deciduous and thorn forests
- Fauna: Deer species, Nilgai, Chinkara

It was once a hunting ground for Mughal emperors and the Gwalior royalty. It became a national park in 1958.

Conservation of Gharials (*Gavialis gangeticus*)

Context:

Madhya Pradesh has taken a significant step in gharial conservation by releasing 10 individuals into the Chambal River at the National Chambal Gharial Sanctuary in Morena. Due to its extensive conservation initiatives spanning decades, the state has earned the distinction of being a "gharial state," hosting over 80% of India's gharial population.

About Gharials

Gharials (*Gavialis gangeticus*) are a unique species of long-snouted, fish-eating crocodylians. They belong to the crocodylian group, which also includes crocodiles, alligators, and caimans.

- **Distinctive Features:** Adult males possess a bulbous snout resembling an inverted pot.
- **Size:** Males typically grow between 3-6 meters, while females range from 2.6-4.5 meters.
- **Diet:** Their sharp, slender teeth enable them to efficiently catch and consume fish, which forms the majority of their diet.
- **Breeding:** Mating occurs between November and January, with females laying eggs on sandbanks or islands from March to May. After hatching, the young receive maternal care for a few days.
- **Ecological Role:** Gharials play a vital role in maintaining river ecosystems by feeding on dead fish and other organic matter, contributing to natural riverine balance.

Habitat Distribution

- **India:** Chambal, Girwa, and Son Rivers
- **Nepal:** Narayani River

Conservation Status

- **IUCN Red List:** Critically Endangered
- **Wildlife Protection Act, 1972:** Schedule 1

National Chambal Gharial Sanctuary

The National Chambal Gharial Sanctuary, spanning Madhya Pradesh, Uttar Pradesh, and Rajasthan, is a key conservation site for gharials. This sanctuary safeguards a 435-km stretch of one of India's cleanest rivers, providing a habitat for over 2,450 gharials.

Hydrocarbon Exploration in the Gulf of Mannar

Context:

The Indian government has invited bids for hydrocarbon exploration in a deep-sea region of the Gulf of Mannar (GoM), covering around 10,000 sq km. This move, part of the 10th Open Acreage Licensing Policy (OALP), has raised environmental concerns due to the region's rich marine biodiversity and its significance for local fishing communities.

About the Tender:

The Ministry of Petroleum and Natural Gas has included 25 offshore blocks for oil and gas exploration under the OALP mechanism. This policy allows investors to propose exploration in any area they deem prospective for hydrocarbons. The inclusion of the ecologically sensitive Gulf of Mannar has triggered debates around sustainable development and conservation.

Geographical Significance of Gulf of Mannar:

- Located in the Laccadive Sea in the Indian Ocean, between the southeastern coast of India (Tamil Nadu) and the northwestern coast of Sri Lanka.
- Flanked by Rameswaram, the Ram Sethu (Adam's Bridge), and Mannar Island in Sri Lanka.
- Major rivers draining into the Gulf include the Tambraparni River (India) and Aruvi River (Sri Lanka).
- Hosts the Tuticorin (Thoothukudi) port, a key maritime hub in southern India.

Ecological Importance:

- The Gulf of Mannar is home to the Gulf of Mannar Marine National Park, which includes 21 coral-rich islands and forms part of India's first Marine Biosphere Reserve—also the first in South and Southeast Asia.
- The region supports 117 coral species, over 450 species of fish, and is a refuge for globally threatened marine species such as:
 - Dugongs (sea cows)
 - Whale sharks
 - Sea turtles

Concerns Raised:

- **Biodiversity at Risk:** The proposed hydrocarbon exploration may threaten delicate marine ecosystems, especially coral reefs and endangered species.
- **Impact on Livelihoods:** Local fishing communities depend heavily on the Gulf's resources. Industrial activity could reduce fish stock and affect traditional livelihoods.
- **Environmental Fragility:** Given the Gulf's ecological sensitivity, exploration may lead to irreversible damage, calling for strict environmental assessment and regulation.

Conclusion:

While hydrocarbon exploration is vital for India's energy security, it must be balanced with ecological protection and community welfare. The Gulf of Mannar, due to its unique biodiversity and socio-economic value, deserves a cautious and conservation-oriented approach.

Wallace Line: A Barrier of Biodiversity

What is the Wallace Line?

The Wallace Line is an invisible boundary that separates the distinct animal species of Asia from those of Australia. It was first identified by English naturalist Alfred Russel Wallace in the 19th century and runs through the Malay Archipelago, passing between the islands of Bali and Lombok and extending north between Borneo and Sulawesi.

Significance of the Wallace Line

- It marks a sharp transition in biodiversity over a short distance.
- Animals on the Asian side (e.g., tigers, monkeys) resemble those from mainland Asia.
- Animals on the Australian side (e.g., marsupials like kangaroos and cuscuses) share similarities with Australian wildlife.

Reasons for This Biological Division

The distinct separation of species across the Wallace Line can be explained through plate tectonics and evolutionary processes:

- Millions of years ago, Australia drifted away from Antarctica and moved northward, while Asia remained connected to its mainland.
- Changes in sea levels caused some islands to remain connected while others were isolated, leading to independent evolution.
- This geographical isolation allowed species to develop unique characteristics on either side of the line.

Sulawesi

Sulawesi, located near the Wallace Line, hosts species from both Asian and Australian origins:

- Asian species like the anoa (a type of buffalo).
- Australian species like the dwarf cuscus (a marsupial).

Scientists believe Sulawesi's biodiversity is due to its formation from fragments of both continental plates, allowing a mix of species from both regions.

Modern Implications and Threats

- Scientists now view the Wallace Line as a transition zone rather than a strict boundary.
- Some species have been found to cross the line over time.
- Climate change and habitat destruction pose risks to these ecosystems, making it crucial to understand how species will adapt in the future.

Bottom-Trawling: A Controversial Fishing Practice

Context

Bottom-trawling has emerged as a major concern in maritime policy and regional diplomacy. Recently, former Sri Lankan Northern Provincial Council Chief Minister C.V. Wigneswaran appealed to Tamil Nadu Chief Minister M.K. Stalin to take urgent steps to stop bottom-trawling by Indian fishermen. He emphasized that this destructive practice not only threatens marine biodiversity but also harms the livelihood of traditional fishermen in both Tamil Nadu and northern Sri Lanka, often fueling cross-border tensions.

What is Bottom-Trawling?

Bottom-trawling is a mechanized fishing technique that involves dragging large, weighted nets across the ocean floor to catch fish in bulk. This method is mainly used for commercial fishing due to its efficiency. However, it does not discriminate between target and non-target species. In the process, it also scoops up shrimps, eggs, juvenile fish, corals, and other seabed organisms, causing significant ecological harm.

Environmental Impact

The environmental damage caused by bottom-trawling is severe. The seabed, which serves as a habitat for various marine species, gets destroyed as the heavy nets plough through it. Corals, sponges, and other delicate organisms are crushed or uprooted. Moreover, the practice leads to excessive bycatch—non-target marine life caught unintentionally—which is often discarded, resulting in massive waste and accelerating the depletion of marine biodiversity.

Economic and Social Consequences

For small-scale and traditional fishermen who rely on sustainable fishing methods, bottom-trawling poses a serious threat. Their daily catch diminishes as fish stocks are depleted by mechanized trawlers. Additionally, bottom trawlers often damage or destroy traditional fishing nets and boats, leading to significant financial losses for coastal communities. This deepens the economic gap between industrial and artisanal fishing communities.

Cross-Border Conflicts

One of the most sensitive aspects of bottom-trawling is its role in heightening India-Sri Lanka tensions. Fishermen from Tamil Nadu, in search of richer catch, often cross into Sri Lankan territorial waters using trawlers. This results in repeated diplomatic disputes, arrests, and even violence. Such violations of maritime boundaries disturb bilateral relations and create mistrust between the two nations.

The Way Forward

Addressing the challenges posed by bottom-trawling requires a multi-pronged approach. Firstly, governments must strictly regulate and phase out bottom-trawling through legal measures and strict enforcement. Secondly, affected fishermen should be supported through training and incentives to adopt eco-friendly alternatives such as longline fishing or deep-sea fishing. Lastly, regional cooperation is essential. India and Sri Lanka must engage in constructive dialogue to frame joint fishing policies that are environmentally sustainable and economically fair.

Conclusion

Bottom-trawling remains a highly unsustainable and diplomatically sensitive issue in South Asian maritime affairs. Its continued use threatens marine ecosystems, weakens traditional livelihoods, and risks triggering larger international conflicts. By embracing sustainable fishing methods and strengthening regional cooperation, both India and Sri Lanka can protect marine resources while ensuring justice and dignity for their coastal communities.

Discovery of New Jumping Spider Species in the Western Ghats

Context:

Researchers have identified two new species of litter-dwelling jumping spiders in the southern Western Ghats. These species, named *Habrocestum swaminathan* and *Habrocestum benjamin*, belong to the genus *Habrocestum* and provide valuable insights into spider ecology and evolution.

Newly Discovered Species

1. **Habrocestum swaminathan**
 - Found along the banks of the Kunthi River.
 - Named in honor of S. Swaminathan for his contributions to science and conservation.
2. **Habrocestum benjamin**
 - Discovered in Thusharagiri, Kerala.
 - Named after Suresh P. Benjamin, a renowned Sri Lankan arachnologist specializing in the genus *Habrocestum*.

About Jumping Spiders (Salticidae)

- Jumping spiders are small, carnivorous arachnids known for their agility and excellent vision.
- Salticidae is the largest spider family, with over 5,000 species worldwide.
- **Global Distribution:** Found across the Americas, Europe, Asia, Africa, and Australia.
- **Habitat:**
 - **Diurnal** (active during the day).
 - Found in a variety of environments, including forests, grasslands, and urban areas.

This discovery enhances our understanding of biodiversity in the Western Ghats and highlights the region's significance in spider taxonomy and conservation.

Gray Wolves (*Canis lupus*): Population Surge in Europe

Context

A recent study highlights a remarkable 58% rise in the gray wolf population across Europe over the past decade, reaching at least 21,500 individuals by 2022. The European Union alone accounts for 19,000 of these wolves, with major populations in countries like Romania, Germany, Italy, Spain, and Greece.

Key Population Trends

Wolf numbers have increased in 19 European countries, remained stable in 8, fluctuated in 3, and declined in 3 (Bosnia & Herzegovina, Montenegro, North Macedonia). The largest populations are concentrated in the Dinaric-Balkan and Carpathian regions, while Central Europe and the Alps are witnessing rapid growth. Germany has seen a dramatic rise—from a single pack in 2000 to over 180 packs by 2022. In contrast, growth is slow in Scandinavia and Karelia due to hunting and control policies. Spain has even lost one isolated wolf population.

About Gray Wolves

Gray wolves are the largest wild members of the dog family (Canidae), weighing between 18 to 80 kg. They inhabit a variety of ecosystems including forests, mountains, and grasslands across Europe, Asia, and North America. Globally, they are classified as *Vulnerable* by the IUCN.

While the rise in wolf numbers marks a conservation success, it also presents challenges in managing human-wildlife conflict and maintaining ecological balance.

Tribal Rights vs. Tiger Conservation: The Similipal Conflict

Context

The Union Ministry of Tribal Affairs has asked the Odisha government to investigate alleged violations of tribal rights during the eviction of villagers from Jamunagarh village, located within the Similipal Tiger Reserve (STR). The evictions were reportedly linked to the relocation of a tiger named Zeenat. Villagers claim their sacred groves and burial grounds were destroyed without proper legal procedures or consent.

Incident Overview

To promote genetic diversity among tigers, Zeenat was shifted from Maharashtra's Tadoba-Andhari Tiger Reserve to Similipal. However, between 2015 and 2022, villagers in the area allege that they were forcibly evicted. Sacred sites were bulldozed, and no proper consultation was undertaken, violating their legal rights.

Government Response

The Ministry has sought clarification from Odisha authorities on whether:

- The Forest Rights Act (FRA), 2006 was followed.
- Due consultation and threat assessments were conducted.
- Displaced families were rehabilitated through legal and humane procedures.

Why This Issue Matters?

Odisha has one of India's highest tribal populations, with nearly 23% of its people belonging to Scheduled Tribes. Many of these communities face ongoing economic hardship, land insecurity, and marginalization. The eviction raises important questions:

- Can conservation efforts disregard indigenous rights?
- Are tigers being protected at the cost of human dignity and culture?

Conservationists emphasize that long-term wildlife protection requires the support of local communities.

Ignoring tribal voices may weaken ecological efforts and deepen social injustice. Successful models globally highlight community-inclusive conservation as more sustainable.

Legal Protections for Tribal Rights

1. Constitutional Provisions

- *Fifth and Sixth Schedules*: Safeguard tribal governance and land.
- *Article 342*: Recognizes Scheduled Tribes and defines their rights.
- *Part X of the Constitution*: Grants Scheduled Tribes autonomy and protections from exploitation.

2. Forest Rights Act (FRA), 2006

Designed to correct historical injustices, the FRA provides legal recognition to forest-dwelling tribal and traditional communities.

Eligibility

- *Forest Dwelling Scheduled Tribes (FDSTs)*: Recognized STs residing in forests.
- *Other Traditional Forest Dwellers (OTFDs)*: Those who have lived in forests for at least 75 years before 2005.

Key Rights Under FRA

- **Land Rights**: Ownership of traditionally inhabited land.
- **Community Rights**: Preservation of sacred groves and common forest resources.

- **Biodiversity Rights:** Authority to conserve forest ecosystems.
- **Right to Rehabilitation:** Mandatory fair compensation and resettlement if evicted.
- **Other Rights:** Right to basic infrastructure and recognition of forest villages.

Conclusion

The Similipal conflict reflects a deeper tension between wildlife conservation and indigenous rights in India. While protecting endangered species like tigers is vital, such efforts must not override legal safeguards meant for tribal communities. A balanced approach—one that respects both ecological goals and human rights—is essential for sustainable conservation and inclusive development.

Ecotourism in India

Context

The Jammu & Kashmir government has announced plans to promote Bangus Valley as an ecotourism destination. This move comes as a response to the environmental degradation witnessed in over-touristed areas like Pahalgam, Gulmarg, and Sonamarg. The goal is to preserve ecological balance while promoting local economic growth through sustainable tourism.

What is Ecotourism?

Ecotourism is a form of responsible travel that focuses on exploring natural areas while conserving the environment and improving the well-being of local people. It promotes minimal environmental impact, education on biodiversity, and community participation.

Core Features of Ecotourism

- Nature-based travel experiences
- Conservation of ecosystems and wildlife
- Involvement of local and tribal communities
- Promotion of cultural and environmental education
- Sustainable infrastructure and resource use

Need for Ecotourism in India

India is among the world's 17 megadiverse countries, home to four major biodiversity hotspots: the Himalayas, Western Ghats, Indo-Burma region, and Sundaland. However, unregulated tourism has led to habitat destruction, rising human-wildlife conflict, and pressure on natural resources. Ecotourism offers a sustainable model to manage tourism growth while protecting these fragile ecosystems.

Benefits of Ecotourism

- Generates livelihoods for rural and tribal populations
- Boosts local economies by attracting eco-conscious tourists
- Helps preserve cultural heritage and natural resources
- Encourages responsible behaviour among travelers
- Reduces dependency on mass-tourism models that often harm the environment

Global and National Trends

Globally, there is a rising preference for eco-friendly travel, supported by the UN's Decade on Ecosystem Restoration (2021–2030). Countries like Costa Rica have successfully integrated ecotourism into their conservation strategies. In India, this model is being adopted across multiple regions with promising outcomes.

Notable Indian Ecotourism Models

- *Thenmala Ecotourism, Kerala*: India's first planned ecotourism site focused on forest conservation
- *Periyar Tiger Reserve, Kerala*: Involves communities through eco-development committees
- *Kabini Wildlife Resorts, Karnataka*: Balances wildlife protection with tourism
- *Dzüleke Village, Nagaland*: Community-led model banning hunting and promoting nature guiding

Bangus Valley: An Emerging Ecotourism Destination

Located in Kupwara district near the Line of Control, Bangus Valley comprises two scenic bowl-shaped valleys at an altitude of 10,000 feet. Once a route for militant infiltration, it is now being developed as a peaceful tourist hub. The region will follow strict ecotourism norms, with all construction subject to forest clearances via the Parivesh Portal.

India's Tourism Sector: Growth and Potential

India ranks 10th globally for tourism's contribution to GDP. Tourist arrivals are projected to reach 30.5 million by 2028. In 2022, the sector contributed USD 199.6 billion to GDP and is expected to reach USD 512 billion by 2028. It also holds potential for generating 53 million jobs by 2029.

Rising Foreign Tourist Arrivals (FTAs)

India witnessed 9.24 million FTAs in 2023, a strong recovery post-pandemic. Key source countries include Bangladesh (24.5%), the USA (20.4%), and the UK (6.9%). India now ranks 39th globally in the 2024 Travel and Tourism Development Index, a sharp improvement from 54th in 2021.

Government Initiatives Supporting Ecotourism

- **Swadesh Darshan 2.0**: Sustainable tourism development
- **PRASHAD**: Pilgrimage and heritage site enhancement
- **Dekho Apna Desh**: Promotion of domestic travel
- **E-Visa**: Offered to 167 countries across 7 categories
- **UDAN Scheme**: Improved regional air connectivity
- **NIDHI & NIDHI+**: Digitizing tourism and hospitality services
- **Niche Tourism**: Promotion of eco, wellness, rural, and culinary tourism

Conclusion

Ecotourism offers India a viable path to balance development and conservation. With its vast natural wealth and cultural diversity, adopting ecotourism practices can ensure long-term ecological stability, inclusive economic growth, and a positive global image. Initiatives like the development of Bangus Valley set a valuable precedent for future tourism planning across the country.

Global Conference on Air Pollution and Health 2025

The second Global Conference on Air Pollution and Health, organised by WHO and the Government of Colombia in Cartagena, focused on reducing air pollution-related deaths by half by 2040. The event brought together global leaders, experts, and communities to address one of the world's biggest public health threats.

Current Scenario

- Air pollution causes nearly 7 million premature deaths annually.
- 2.7 billion children under 15 are exposed to unsafe air.
- Global economic loss from air pollution is \$8.1 trillion, or 6.1% of GDP.

Health Impacts

- Affects all body systems through oxidative stress and inflammation.
- Linked to asthma, neurodevelopmental disorders, and dementia.

Urgent Areas of Action

- **Clean Energy Transition:** Reduction in fossil fuel use lowered outdoor pollution deaths by 6.9% (2016–2021).
- **Energy Poverty:** Programmes like India's Ujjwala improved access, but affordability remains an issue.
- **Financial Support:** Only 1% of global aid targets outdoor air quality.

Local and Global Solutions

- Cities like London have cut pollution with ultra-low emission zones.
- Public stories and expert advocacy urge policy reforms and sustained investment.

The conference called for stronger international cooperation and local leadership to ensure clean air as a fundamental right.

New Snakehead Species Discovered in Meghalaya: *Channa nachi*

- A new species of snakehead fish, *Channa nachi*, has been discovered in the South Garo Hills of Meghalaya, highlighting the region's freshwater biodiversity. The species was first collected four years ago from a shallow stream feeding the Simsang River.

- **Habitat and Characteristics**

Channa nachi thrives in clear, shallow waters with sand, leaf litter, and pebbles—conditions ideal for lesser-known aquatic fauna. Its slender, bicolor body shifts from cream-yellow to deep blue, with pale-blue marbling and dorsal saddles, making it attractive for ornamental fish enthusiasts.

- **Cultural Connection**

The name "nachi" comes from the Garo language, underscoring the link between indigenous culture and biodiversity. This recognition promotes the integration of local knowledge in species discovery.

- **Scientific and Commercial Significance**

This discovery contributes to the rising interest in Indian snakeheads in the international ornamental fish market. It also stresses the need for standardized species classification using both morphological and molecular data.

Channa nachi reflects not just ecological richness, but also the potential for combining scientific research with cultural heritage in biodiversity conservation.

NSAIDs Threaten Avian Scavengers in South America

A recent study warns that the widespread use of nonsteroidal anti-inflammatory drugs (NSAIDs), such as diclofenac and flunixin, poses a severe risk to avian scavengers across South America. Approved in all ten evaluated Spanish and Portuguese-speaking countries for veterinary use, these drugs have raised conservation concerns.

Key Points

- Brazil and Argentina top the list with the highest number of diclofenac products, while Colombia leads in flunixin registrations.

- These NSAIDs are mainly used in bovines, porcines, and equines.
- South America hosts 21 scavenging raptor species, including the Vulnerable Andean condor and six New World vultures.
- The turkey vulture shows some tolerance to diclofenac, but impacts on other species remain unknown.
- Conservationists call for collaborative strategies with the agriculture sector to mitigate threats from veterinary pharmaceuticals.

Light Fishing Threatens India's Coastal Ecosystems

India's vast coastline is under ecological and economic threat due to the continued practice of light fishing—despite its nationwide ban in 2017. The method, which uses high-intensity artificial lights to attract fish, results in overfishing and disrupts marine ecosystems.

What is Light Fishing?

Light fishing uses powerful LED lights to lure fish to the surface. This technique often captures juvenile and non-target species, leading to overexploitation. Although prohibited in India's Exclusive Economic Zone, poor enforcement allows it to persist.

Ecological Impact

- Disrupts breeding and spawning patterns
- Leads to juvenile fish stock depletion
- Contributes to coral reef degradation
- Threatens balance of the marine food chain

Economic and Social Fallout

- Harms traditional fishers who rely on sustainable practices
- Gives mechanised vessels unfair advantage
- Fuels conflict within fishing communities

Regulatory and Enforcement Gaps

- Enforcement of the national ban is inconsistent across states
- Some states allow partial use, creating legal loopholes
- Inadequate patrolling leads to unchecked violations

Global Lessons and Recommendations

- Countries like Italy and Japan have effectively regulated light fishing
- India needs a uniform national framework with:
 - Strict penalties
 - Enhanced coastal monitoring
 - Awareness and training for fishers
 - Incentives for adopting sustainable methods

Conclusion

India must act swiftly to curb light fishing to protect marine biodiversity and secure the livelihoods of its coastal communities. A coordinated and inclusive approach is essential for sustainable use of ocean resources.

Caracal in Rajasthan

A Caracal, a rare wild cat, has been photographed in Mukundra Hills Tiger Reserve for the first time.

About Caracal:

- Nocturnal, medium-sized cat with pointed black ears
- Name comes from the Turkish word *karakulak*, meaning "black ears"

Status in India:

- Estimated fewer than 50 individuals
- Found only in Rajasthan and Gujarat
- Listed as Critically Endangered in India
- Globally, it is under IUCN – Least Concern and CITES Appendix I & II

Mukundra Hills Tiger Reserve was declared in 2013 and is the 3rd tiger reserve in Rajasthan.

1st Glacier Declared Dead from Climate Change

Context

Iceland's Okjökull glacier was officially declared dead in 2014, becoming the first glacier to lose its status due to human-induced climate change. Satellite images taken decades apart confirmed its disappearance. This incident marked a global turning point in acknowledging the real-time impacts of rising temperatures.

About Okjökull

Okjökull was a glacier that once sat atop the Ok volcano in western Iceland, standing about 1,200 meters above sea level. It was dome-shaped and part of Iceland's vast glacial cover. Its death signified not just a local environmental loss but also a warning of accelerating climate change.

In 2023, Iceland created a symbolic "iceberg graveyard" to commemorate 15 glaciers listed on the Global Glacier Casualty List. Among them was Anderson Glacier in the United States, which was declared dead in 2015. These memorials aim to raise awareness about the growing number of vanishing glaciers.

Global Recognition

To highlight this issue, the United Nations has declared 2025 as the International Year of Glaciers' Preservation. March 21 will now be observed annually as the World Day for Glaciers.

Understanding the Cryosphere

The cryosphere includes all frozen water parts on Earth. This covers glaciers, ice sheets, snow cover, sea ice, lake ice, permafrost, and more. It plays a critical role in maintaining global temperatures through its reflective surface, known as the albedo effect.

Only two massive ice sheets exist today — in Antarctica and Greenland. Combined, they hold more than 70% of the world's freshwater ice and are over 2 kilometers thick in many areas.

Key Facts

- About 70% of Earth's freshwater is stored in ice and snow.
- Nearly 10% of the planet's land is still covered by glaciers or ice sheets.
- As these melt, they contribute significantly to rising sea levels.

The Hindu Kush Himalaya Region (HKH)

This mountain system stretches 3,500 km across eight countries including India, Nepal, Bhutan, and China. Known as the “water towers of Asia,” it feeds 10 major river systems like the Ganga, Indus, and Brahmaputra. These rivers support around one-fourth of the global population.

However, the region is warming twice as fast as the global average. This increases risks of glacial lake outburst floods and water shortages in downstream regions.

Why the Cryosphere Matters

- **Temperature Regulation:** Snow and ice reflect sunlight and help keep Earth cool.
- **Sea Level Stabilization:** Ice holds massive amounts of freshwater, which, when melted, raises ocean levels.
- **Water Supply:** Melting snow and glaciers are seasonal sources of freshwater.
- **Ecosystems:** Icy habitats support unique species of wildlife.
- **Climate Indicator:** Changes in the cryosphere directly reflect shifts in the global climate.

Threats and Global Consequences

Global warming is rapidly melting glaciers and permafrost. This causes:

- Rising sea levels, threatening low-lying coastal areas
- Loss of biodiversity and marine life disruptions
- Permafrost thaw, which releases carbon dioxide and methane into the atmosphere
- Disruption in snow and water patterns, affecting agriculture and water security

Key Global Initiatives

- **Paris Agreement (2015):** Aims to limit temperature rise to under 2°C, with efforts to keep it below 1.5°C.
- **International Cryosphere Climate Initiative (ICCI):** Works on policies and awareness to protect icy regions.
- **IPCC Reports:** Regularly highlight cryosphere risks and mitigation strategies.
- **CryoNet (WMO):** Global network tracking changes in the cryosphere.
- **Arctic Council:** Promotes sustainable development and environmental protection in the Arctic.
- **Global Cryosphere Watch and CryoSat:** Use satellites and global data to monitor ice and snow cover.

Indian Initiatives

The National Mission for Sustaining the Himalayan Ecosystem (NMSHE), under the National Action Plan on Climate Change (NAPCC), aims to protect India’s mountain regions and glaciers. It promotes research, conservation, and disaster preparedness.

Conclusion

The cryosphere is vital for life on Earth. From maintaining water supplies to regulating climate, its health is directly linked to human survival. Its rapid deterioration is a wake-up call. Strong policies, global cooperation, and community-level efforts are necessary to protect glaciers and ensure long-term sustainability for future generations.

UN World Water Development Report 2025

Context

UNESCO released the United Nations World Water Development Report 2025. This year's focus is on mountains and glaciers as global water towers.

Key Findings of the Report

Rapid Glacier Melt

- Glaciers are shrinking at an alarming rate.
- Since 1975, over 9,000 billion tonnes of glacier mass have been lost.
- This is equal to a block of ice the size of Germany.
- Black carbon from wildfires and dust storms settles on glaciers.
- These dark impurities reduce reflectivity and increase heat absorption, accelerating melt.

Thawing Permafrost

- Permafrost is frozen ground found in polar and mountain regions.
- Rising temperatures are causing permafrost to thaw.
- This releases trapped organic carbon, worsening global warming.
- Thawing also weakens mountain slopes, increasing landslide risk.

Reduction in Snow Cover

- Snow cover has dropped globally, especially in spring and summer.
- Between 1979 and 2022, snow cover declined by 7.79% on average.
- Less snow affects water availability in rivers fed by snowmelt.

Major Concerns

1. Erratic Water Flow

- Melting glaciers and reduced snow impact freshwater flow.
- Mountain-fed rivers may face irregular flow and shortages.

2. Glacial Lake Outburst Floods (GLOFs)

- Melting creates unstable glacial lakes.
- Sudden breaches cause deadly floods.
- Over 12,000 people have died from GLOFs in the past 200 years.

3. Sea Level Rise

- Glacial melt accounts for 25–30% of global sea level rise.
- This endangers coastal cities and island nations.

4. Global Dependence on Mountains

- Mountains span 33 million sq. km, housing fragile ecosystems.
- Around 2 billion people depend on mountain glaciers for freshwater.
- These regions are vital for biodiversity and climate regulation.

Suggestions

1. Raise Awareness

- Promote global understanding of how mountain ecosystems impact water security.

- Educate communities about risks linked to glacier and snow loss.

2. Policy and Resource Mobilization

- Urgent need to build strong policy frameworks at local, national, and global levels.
- Governments must allocate more resources to monitor and protect mountain environments.

3. Strengthen Climate Action

- Mountain areas should be a focus of climate resilience strategies.
- Investments in sustainable water management and early warning systems are crucial.

Conclusion

Mountains and glaciers are essential lifelines for millions. Their degradation due to climate change poses serious threats to global water security. The report calls for swift and coordinated action to safeguard these critical ecosystems and ensure water availability for future generations.

Black Carbon-A Climate Concern

Context

A report warns that black carbon is accelerating glacier melt and disturbing monsoon patterns.

About Black Carbon

It is a component of air pollution (PM2.5) and a short-lived climate pollutant. It absorbs sunlight and warms the atmosphere.

India is the second-largest emitter after China.

Impact

It darkens snow and ice, reducing reflectivity and speeding up melting. It also disrupts rainfall patterns, increasing risks of droughts and floods.

Rushikonda Beach Regains Blue Flag Tag

Context

Rushikonda Beach in Visakhapatnam has regained the prestigious Blue Flag certification.

About the Tag

The Blue Flag is an international label for eco-friendly and clean beaches, awarded by the Foundation for Environmental Education.

India now has 13 Blue Flag-certified beaches.

Criteria

Beaches must meet 33 criteria, including water quality, environmental education, safety, and management standards.

Permafrost Thawing in Kashmir Himalaya

Context

A study has highlighted the risks of thawing permafrost in the Kashmir Himalaya.

What is Permafrost?

It refers to ground that stays frozen for at least two years. Found in high mountains and polar regions.

Concerns

Thawing can damage infrastructure and increase the risk of Glacial Lake Outburst Floods (GLOFs). In Jammu and Kashmir, 65 lakes have been identified as GLOF-prone.

Recommendations

Future projects must consider permafrost data in design. Monitoring through satellites and local sensors is essential.

Coral Bleaching at Ningaloo Reef**Context**

A severe coral bleaching event is affecting Western Australia's Ningaloo Reef, part of a global trend.

Causes

- Ocean heat stress.
- Pollution and overfishing.
- Climate change-induced temperature rise.

Importance of Coral Reefs

- Rich in biodiversity.
- Protect coastlines from erosion.
- Source of food, medicine, and livelihood.

Indian Coral Reefs

Gulf of Mannar, Gulf of Kutch, Lakshadweep, Andaman and Nicobar.

Way Forward

- Meet Paris Agreement targets.
- Support SDG 13 (Climate Action).
- Invest in resilient coral species.

Bhadra Wildlife Sanctuary**Context**

The Forest Department of Karnataka is planning to capture and rehabilitate wild elephants by releasing them gradually into the Bhadra Wildlife Sanctuary.

About the Sanctuary

Located in the Western Ghats, Bhadra Wildlife Sanctuary is spread across the Shivamogga and Chikmagalur districts of Karnataka. It forms a part of the Bhadra Tiger Reserve, which was declared in 1998.

Key Features

The sanctuary is named after the Bhadra River, which flows through it. It is also referred to as Muthodi Wildlife Sanctuary. The area is rich in biodiversity, housing over 250 bird species, several mammals, reptiles, and the famous Jagara Giant, Karnataka's largest teak tree.

Significance

The release of elephants into Bhadra is part of a broader conservation strategy to ease human-animal conflicts, protect wildlife, and preserve biodiversity in the ecologically sensitive Western Ghats region.

Green Grabbing**Context**

- Concerns are rising over “green grabbing” in India as it pushes toward its renewable energy goals.

What is Green Grabbing?

- Refers to the coercive or exploitative acquisition of land under the guise of environmental protection or sustainable development.
- Often displaces local or indigenous communities.

Case Example

- In Karbi Anglong region, Assam, fertile land is limited.
- Government's move to develop solar parks has led to the loss of such land, adversely affecting Karbi and Naga tribal communities.

Implications

- Undermines land rights, especially of vulnerable populations.
- Poses ethical challenges in balancing sustainability with social justice.

Fungi Threatened With Extinction: IUCN**Context**

IUCN Red List: Over 1,000 species of fungi are now threatened due to human activities.

Why Are Fungi Important?

- **Kingdom:** Fungi (not plants or animals)
- **Nutrition:** Heterotrophic, absorb nutrients externally
- **Reproduction:** Both asexual and sexual
- **Examples:** Mushrooms, yeast, molds, Penicillium

Ecological and Economic Roles

- **Decomposers:** Recycle nutrients
- **Symbiosis:** Lichens (fungi + algae), Mycorrhiza (fungi + plant roots)
- **Medicinal use:** Source of antibiotics like penicillin
- **Food & Biotech:** Fermentation, biocontrol in agriculture

Threats

Deforestation, urbanization, agriculture expansion are major threats to fungal biodiversity.

DISASTER MANAGEMENT**Marine Heat Waves (MHWs):
Rising Threat to Oceans and Climate Stability****Context:**

A recent study published in Nature Climate Change reveals a dramatic 240% rise in marine heatwave (MHW) days during the summer of 2023–24 compared to historical averages. These prolonged oceanic heat events affected almost every marine region on the planet, contributing to extreme weather events, harming marine ecosystems, and leading to substantial economic losses.

Unprecedented Ocean Temperatures

Nearly 10% of the world's oceans recorded their highest-ever SSTs. Temperatures were up to four times above historical norms, contributing to heatwaves in the UK, Japan, and North America, and floods in Ecuador, Libya, and Australia. The Atlantic hurricane season was particularly intense, with storms like Cyclone Gabrielle, Mocha, and Remal.

What Are Marine Heat Waves?

Marine heatwaves occur when SSTs rise 3–4°C above average for at least five consecutive days. These events may last weeks or months. They are mainly caused by global warming, El Niño effects, and shifting ocean currents that trap heat in surface waters.

Indian Ocean: A Region at Risk

The Indian Ocean is among the most threatened regions. Between 1950–2020, it warmed at 2°C per century. Projections for 2020–2100 show a rise between 3.8°C and 7°C, with the northwestern part, including the Arabian Sea, at the highest risk.

Ecological Impacts of 2023–24 MHWs

Marine ecosystems faced severe consequences. Coral bleaching was observed in Japan and Peru, while fish die-offs occurred in the Gulf of Thailand and Gulf of Mexico. Phytoplankton loss disrupted food chains, leading to seabird declines. Marine mammals, including whales and dolphins, stranded in the South Pacific. Some species, like the fan mussel in the Mediterranean, now face extinction.

Destruction of Marine Habitats

Kelp forests were wiped out in several coastal areas, altering marine biodiversity. Warmer waters also enabled invasive species to thrive, upsetting local ecosystems. These changes highlight the urgent need for global climate action and marine conservation.

Conclusion

The sharp rise in marine heatwave incidents is a clear signal of worsening oceanic stress due to climate change. These events not only disturb marine biodiversity but also intensify climate-related disasters on land. As global warming accelerates, understanding and mitigating the impacts of MHWs will be crucial for environmental sustainability, economic stability, and global climate resilience.

Stampede Management in India

Context

Stampedes continue to claim lives in India, with the recent tragedy at New Delhi Railway Station killing at least 18 people and injuring several others. Such incidents underscore the urgent need for robust crowd management systems and disaster preparedness, especially during mass gatherings.

A stampede is a sudden and chaotic surge of people, typically triggered by panic, fear, or a perceived threat. In densely packed crowds, this results in people being trampled, crushed, or suffocated, often leading to mass casualties.

Key Causes of Stampedes in India

- 1. Structural and Infrastructure Failures:** Poorly constructed or temporary structures, inadequate exits, narrow passageways, and lack of evacuation planning often lead to fatal bottlenecks during emergencies.
- 2. Fire and Electrical Hazards:** Fires in congested areas and power outages trigger panic. Many venues ignore safety codes, worsening risks.
- 3. Crowd Behaviour and Panic:** Fear-driven responses, lack of discipline, and mass excitement during religious events or political rallies can escalate into uncontrollable rushes.
- 4. Security and Administrative Failures:** Insufficient police presence, poor surveillance, and uncoordinated response systems aggravate already volatile crowd conditions.
- 5. Coordination Gaps:** Failure to coordinate among police, emergency teams, organizers, and local authorities creates confusion and delays during crisis management.

Impact of Stampedes

- 1. Human and Emotional Loss:** Victims suffer severe injuries or death. Families face emotional trauma and long-term psychological consequences.
- 2. Economic Consequences:** Many victims belong to vulnerable economic backgrounds. Their loss results in financial instability and high medical or funeral expenses.
- 3. Public Trust Erosion:** Recurrent failures to prevent such incidents erode trust in authorities and event organizers.
- 4. Loss of Human Capital:** Deaths often include working-age adults, reducing community productivity and growth.

Challenges in Crowd Management

- 1. Poor Enforcement of NDMA Guidelines:** Though the National Disaster Management Authority (NDMA) provides clear protocols, many states treat them as advisory and fail to implement them effectively.
- 2. High Tolerance for Crowding:** Massive turnouts at events like religious yatras or festivals are normalized, with little attention to safety thresholds.
- 3. Infrastructural Gaps in Urban Areas:** Narrow streets, old venues, and limited rescue access points in congested cities exacerbate risks during emergencies.
- 4. Lack of Accountability:** Multiple agencies involved in crowd control rarely coordinate. Security staff are often untrained in crowd psychology or emergency response.

Suggestions and way forward

- 1. Legal Reforms and Governance:** Crowd management must be backed by enforceable laws and penalties for negligence. Events with large attendance must mandatorily include disaster preparedness plans.

2. **Leveraging Technology:** Install CCTV cameras, use AI to monitor crowd density, and deploy drones and facial recognition systems for better control and real-time alerts.
3. **Infrastructure and Capacity Planning:** Venues must undergo safety audits. Clearly marked entry/exit points, proper barricades, and route maps should be mandatory.
4. **Awareness and Training:** Conduct training for police, volunteers, and organizers. Public campaigns on safe behaviour and mock drills will improve readiness.
5. **Community Participation:** Involve local NGOs and trained volunteers to assist during large gatherings. Public cooperation is key to managing crowd discipline.
6. **Learn from Global Best Practices:** India can adopt strategies used in managing the Hajj pilgrimage in Saudi Arabia or Japan's disaster response models to improve efficiency and preparedness.

NDMA's Integrated Crowd Management Framework

The NDMA proposes five key pillars:

- **Capacity Planning:** Assess event capacity and infrastructure readiness.
- **Risk Assessment:** Identify crowd surge points, infrastructure gaps, and weather risks.
- **Preparedness Planning:** Establish SOPs for emergencies, including fire and medical response.
- **Crisis Management:** Enable rapid response teams and use tech-based surveillance.
- **Public Awareness:** Educate attendees, volunteers, and officials on safe conduct and emergency actions.

Conclusion

Stampedes are preventable with proactive planning, enforcement, and public awareness. India must implement crowd management as a public safety priority, ensuring coordination, technological support, legal safeguards, and community involvement. A multi-stakeholder strategy is vital to protect lives during mass events and restore public confidence in governance and safety systems.

Delhi Earthquake: Overview and Geological Context

Context

A recent 4.0-magnitude earthquake in Delhi has brought renewed attention to the city's vulnerability to seismic events. Located in Seismic Zone IV, Delhi is at moderate to high risk of earthquakes due to its proximity to several geological fault lines and ongoing tectonic processes related to the Himalayan uplift.

Why Delhi is Prone to Earthquakes

Delhi lies near key fault lines such as the Delhi-Haridwar Ridge and the Delhi-Moradabad Fault. These faults are linked to the collision of the Indian and Eurasian Plates, the same tectonic movement that gave rise to the Himalayas. Although not situated directly on a plate boundary, Delhi experiences frequent tremors due to these internal geological stresses.

How Earthquakes Occur

Earthquakes result from the sudden release of stress accumulated between tectonic plates. This release sends seismic waves through the Earth, which shake the ground.

- *Primary (P) waves* are the fastest and travel through solids and liquids.
- *Secondary (S) waves* are slower and travel only through solids, causing more damage.
- *Surface waves* move along the Earth's surface and are the most destructive.

Seismic Activity in Delhi

Delhi has experienced multiple moderate tremors over the years. While magnitudes often range between 4.0 to 5.0, even moderate earthquakes can cause significant damage due to dense population, unplanned urban growth, and weak infrastructure.

Seismic Zones of India

India is divided into four seismic zones:

- **Zone V (Very High Risk):** Includes the Himalayas and Andaman & Nicobar Islands.
- **Zone IV (High Risk):** Covers Delhi, parts of Uttarakhand, Bihar, Maharashtra, and others.
- **Zone III (Moderate Risk):** Includes southern and central India.
- **Zone II (Low Risk):** Covers remaining parts of the country.

Delhi, being in Zone IV, faces serious seismic risks despite not being in the highest-risk zone.

Earthquake Management in Delhi

- 1. Building Codes and Retrofitting:** Strict enforcement of earthquake-resistant building codes is essential. Older buildings need retrofitting to reduce the risk of collapse.
- 2. Public Awareness and Preparedness:** Educational campaigns and drills can help residents respond calmly and effectively during quakes.
- 3. Early Warning Systems:** Seismic monitoring networks and early warning alerts can reduce casualties by enabling faster evacuation and response.
- 4. Emergency Planning and Coordination:** Delhi must have updated evacuation plans, trained response teams, and medical support for quick action during disasters. Coordination among NDMA, local authorities, and NGOs is essential.
- 5. Risk Mapping and Research:** Regular assessments of seismic risk and updating building regulations based on new findings are necessary to improve urban resilience.
- 6. Infrastructure Resilience:** Critical infrastructure like bridges, hospitals, and transport hubs must be strengthened. Lifelines such as electricity and communication networks must remain functional during emergencies.

Challenges in Managing Earthquakes in Delhi

- High population density and urban sprawl complicate evacuation and rescue efforts.
- Many buildings do not follow safety norms due to weak law enforcement.
- Public awareness about earthquake preparedness remains low.
- The city's aging infrastructure is particularly vulnerable to tremors.

Conclusion

Delhi's geographic and demographic factors make it particularly susceptible to earthquake-related disasters. A comprehensive, multi-level approach—combining stricter building codes, public education, technological innovation, and better coordination between agencies—is essential to mitigate future risks. With proactive planning and sustained efforts, the impact of earthquakes in the capital can be significantly reduced.

Weak Heat Action Plans in Indian Cities

Context

A recent study shows that India's urban Heat Action Plans (HAPs) lack long-term strategies to deal with rising temperatures.

Findings

Most cities focus only on short-term measures like water supply and flexible work hours. Long-term actions—such as tree plantation, grid upgrades, and insurance—are missing or poorly implemented.

Impact

Heat-related deaths may rise if robust planning is not adopted. NDMA is working with 23 states to implement HAPs.

Way Forward

More funding and better planning are needed. Focus should shift to building heat-resilient infrastructure and protecting vulnerable communities.

New Amendments to Disaster Management Law Passed

Context

The Parliament has passed the Disaster Management (Amendment) Bill, 2024. The bill seeks to update the Disaster Management Act, 2005, in response to new disaster risks, especially those arising from climate change.

About the Disaster Management Act, 2005

The Act established three levels of disaster management authorities:

- National Disaster Management Authority (NDMA),
- State Disaster Management Authority (SDMA),
- District Disaster Management Authority (DDMA).

These bodies coordinate disaster response and preparedness at their respective levels.

Key Features of the Amendment Bill

1. **New Role for NDMA and SDMA:** Earlier, disaster management plans were prepared by Executive Committees. Now, NDMA and SDMA will directly prepare these plans. They will also:
 - Monitor emerging risks like extreme climate events,
 - Provide technical help to lower authorities,
 - Recommend relief standards,
 - Maintain disaster databases.
2. **Disaster Databases:** The bill mandates the creation of disaster databases at both the national and state levels. This will help track and manage disaster risks effectively.
3. **Urban Disaster Management Authorities:** States can now set up a separate Urban Disaster Management Authority. This is specifically for state capitals and cities with municipal corporations.

4. **State Disaster Response Force (SDRF):** States are allowed to form their own SDRFs. The state government will define the functions and service rules for the SDRF personnel.
5. **Statutory Recognition to Key Committees:** Two important committees now get statutory status:
 - **National Crisis Management Committee (NCMC)** will act as the central body for handling major disasters.
 - **High Level Committee (HLC)** will manage financial assistance to states during disasters.
6. **Appointments and Powers** NDMA will decide the number and types of officers it needs, with the Centre's approval. It may also appoint consultants and experts for better planning and execution.

Concerns Raised

Some opposition members criticized the bill. They said it may reduce the autonomy of states. There are concerns that the Urban Disaster Management Authority may overlap with the powers of the District Disaster Management Authority.

Conclusion

The amendment is timely and necessary. With rising risks from climate change, India needs stronger disaster management systems. The government believes that these reforms will make disaster response more effective and institutions more accountable.

Boilers Bill, 2024

Context

The Parliament of India has passed the Boilers Bill, 2024, aiming to modernize boiler regulations by replacing the century-old Boilers Act of 1923.

Key Features of the Boilers Bill, 2024

- **Decriminalization of Minor Offenses:** The Bill decriminalizes three out of seven offenses related to boiler operations, converting fines into penalties enforceable through an executive mechanism rather than courts. However, criminal penalties are retained for four major offenses that could result in loss of life or property.
- **Enhanced Safety Measures:** Specific provisions have been introduced to ensure that only qualified and competent individuals undertake boiler repairs, thereby prioritizing the safety of workers.
- **Simplified Legislative Structure:** The Bill reorganizes the existing provisions into six chapters, consolidating similar provisions for easier reading and understanding.
- **Clarification of Authorities' Roles:** It clearly delineates the functions and powers of the Central Government, State Governments, and the Central Boilers Board to avoid any confusion.

Disaster Relief Funds: Usage and Recent Clarification

Context

The Union Home Minister recently clarified that freebies distributed by state governments should not be funded through disaster relief funds, emphasizing the need to maintain the integrity and purpose of such funds.

Clarification on Use of Funds

During the parliamentary discussion on the Disaster Management (Amendment) Bill, 2024, the Home Minister asserted that disaster response funds should be used strictly for relief and rehabilitation during disasters, and not diverted towards populist schemes or giveaways. He also defended the functioning of PM-CARES as transparent and well-managed in contrast to concerns raised about the PM National Relief Fund (PMNRF).

State Disaster Response Fund (SDRF)

- SDRF is the primary fund at the state level for managing relief during notified disasters such as floods, earthquakes, and cyclones.
- Established under the Disaster Management Act, 2005, it is jointly funded by the Centre and the States:
 - 75% by the Centre for general category states and 90% for special category states (like those in the Northeast).
- Funds are released annually as per Finance Commission recommendations.

Permissible Uses of SDRF

- Providing immediate relief for victims of disasters.
- Restoration of essential services and basic infrastructure.
- States can use up to 10% of SDRF for local disasters, not listed in the Ministry of Home Affairs' guidelines, subject to state authority approval.

National Disaster Response Fund (NDRF)

- NDRF supplements SDRF during severe disasters requiring additional support.
- It is fully funded by the Central Government.
- NDRF also accepts donations from individuals and institutions.
- Funds are allocated based on Finance Commission recommendations and are used only after due assessment of damage.

Key Difference

While both SDRF and NDRF are designed to ensure timely disaster response, they are not meant for welfare schemes or freebies. Misuse can dilute their core purpose and compromise disaster preparedness.

Conclusion

Ensuring strict and transparent use of disaster relief funds is essential for maintaining public trust and operational effectiveness. With climate-related events rising, the proper utilization of SDRF and NDRF will be crucial in supporting vulnerable communities during natural calamities.

Earthquake in Myanmar and Thailand

Context

- On March 28, 2025, a massive earthquake struck Myanmar and Thailand, causing widespread destruction, particularly in Mandalay and Bangkok.

Earthquake Details

- **Magnitude:** 7.5 on the Moment Magnitude Scale (Mw)
- **Epicentre:** Near Mandalay, Myanmar

- **Tremors:** Felt in Thailand, Northeast India, and Bangladesh
- **Aftershocks:** 7 recorded, with magnitudes up to 7.0

Scientific Understanding

Magnitude vs. Intensity

- **Magnitude:** Measures the energy released at the source (Mw scale now replaces the older Richter scale).
- **Intensity:** Measures the shaking effects at a specific location using scales like Modified Mercalli (MMI) or MSK scale.

Seismology Tools

- **Seismographs:** Record ground motion; now digitized for accurate data and early response.
- Seismic data analysis software: Helps predict aftershocks and assess damage.

Soil Liquefaction

- A phenomenon where saturated soils lose strength during shaking.
- Resulted in buildings sinking or collapsing in Bangkok due to resonance with the quake's frequency.

Tectonic Context

Sagaing Fault

- A major fault line in Myanmar where Indian Plate and Eurasian Plate interact through strike-slip faulting.
- **Historical earthquakes:**
 - **1912:** Magnitude 7.5
 - **1956:** Magnitude 7.2
 - **1990 & 2016:** Moderate tremors

Impact Assessment

Casualties & Damage

- **Myanmar:** Over 1,600 deaths
- **Thailand (Bangkok):** Collapse of a high-rise construction site; many injured.
- **Rescue Operations:** Hampered by aftershocks and infrastructure breakdown.
- **Emergency Measures:** Myanmar's government declared a state of emergency in affected areas.

Why frequent Earthquakes in Myanmar?

Context

- A magnitude 7.7 earthquake hit Myanmar recently, one of the strongest globally in two years.

Key Details

- **Depth:** 10 km (shallow quake)
- **Epicenter:** Near Mandalay, affecting Bangkok and Northeast India.

Cause

- Strike-slip faulting along the boundary between the Indian Plate and the Eurasian Plate.
- The plates slide past each other, releasing seismic energy.

Sagaing Fault

- A major fault line running north to south through Myanmar.
- Known for frequent earthquakes – six major quakes (magnitude >7) since 1900.

Operation Brahma**Context**

In the wake of the devastating earthquake in Myanmar, India launched 'Operation Brahma' to provide swift humanitarian assistance. This initiative reinforces India's *Neighbourhood First* policy and the ancient Indian philosophy of *Vasudhaiva Kutumbakam*—the world is one family.

About the Mission

Operation Brahma is a coordinated humanitarian relief mission led by the Indian Army. The mission focuses on delivering medical aid and essential relief materials to affected areas in Myanmar, particularly around Mandalay, where the earthquake's impact was severe.

Medical Task Force Deployment

A 118-member specialized medical team from the elite Shatrueet Brigade Medical Responders has been deployed. This team is tasked with setting up a 60-bed Medical Treatment Centre in Mandalay. The centre is equipped for trauma care, emergency surgeries, and post-operative treatment, providing critical support to the overwhelmed local healthcare infrastructure.

Naval and Air Force Support

India's Navy and Air Force are playing a vital role in the logistics and delivery of aid:

- The Indian Navy dispatched two ships loaded with relief supplies. The first carried 10 tonnes, and the second followed with 40 tonnes of additional aid.
- The Indian Air Force has deployed cargo aircraft to airlift personnel, medical equipment, and relief materials to Myanmar.

Relief Supplies and Rescue Operations

India's relief package includes:

- Tents, blankets, ready-to-eat food packets, and essential medicines.
- An 80-member team from the National Disaster Response Force (NDRF), equipped with advanced search and rescue tools, has been sent to assist in finding and rescuing survivors trapped under debris.

Historical Context and India's Humanitarian Role

Operation Brahma is part of India's consistent track record as a first responder in regional crises. It follows previous humanitarian missions like:

- Operation Dost (Turkey and Syria)
- Operation Maitri (Nepal earthquake)
- Operation Samudra Maitri (Indonesia tsunami)

These missions reflect India's commitment to regional peace, stability, and compassionate internationalism.

Conclusion

Operation Brahma highlights India's growing capacity and willingness to lead in disaster response across the region. By extending timely aid to Myanmar, India not only reinforces diplomatic ties but also exemplifies the spirit of shared humanity and global solidarity.

AWARDS

Abel Prize 2025

Context

Japanese mathematician Masaki Kashiwara won the Abel Prize for contributions to algebraic analysis and representation theory.

About the Abel Prize

Established by the Norwegian Parliament in 2002, the Abel Prize is considered the "Nobel of Mathematics." It is awarded annually and includes a monetary reward and a commemorative plaque.

The Abel Prize is awarded annually by the King of Norway to one or more outstanding mathematicians. It is named after the Norwegian mathematician Niels Henrik Abel (1802–1829) and directly modeled after the Nobel Prizes.

The Abel Prize's history dates back to 1899, when its establishment was proposed by the Norwegian mathematician Sophus Lie when he learned that Alfred Nobel's plans for annual prizes would not include a prize in mathematics. The laureates are selected by the Abel Committee, the members of whom are appointed by the Norwegian Academy of Science and Letters.

Honorary Order of Freedom of Barbados

Prime Minister Narendra Modi was recently conferred the *Honorary Order of Freedom of Barbados* for his leadership during the COVID-19 pandemic. This prestigious recognition reflects the deepening ties between India and the Caribbean island nation and opens new avenues for bilateral cooperation.

Key Highlights:

- Conferred in Bridgetown by Barbados Minister during an official ceremony.
- Recognizes Modi's global leadership and support during the pandemic.
- Announced by PM Mia Mottley at India-CARICOM Summit (Nov 2024).
- Symbolises strong diplomatic ties since 1966 between India and Barbados.
- Expected to boost collaboration in health, climate action, and development.

Prime Minister Modi Receives Mauritius' Highest Honour

Prime Minister Narendra Modi was conferred the *Grand Commander of the Order of the Star and Key of the Indian Ocean*, Mauritius' highest civilian award. This award honours Modi's role in strengthening India-Mauritius relations and highlights shared historical and cultural ties.

Key Points:

- First Indian to receive Mauritius' top honour.
- Only five foreign dignitaries awarded it since Mauritius became a republic.
- Recognised for deepening bilateral ties in education, health, trade, and security.
- Reflects mutual respect between both nations.
- Modi has received 21 international honours so far.

Ramsar Award for 'Wetland Wise Use'

Jayshree Vencatesan of Care Earth Trust has become the first Indian to receive the *Ramsar Award for 'Wetland Wise Use'*. Her recognition highlights global acknowledgment of India's wetland conservation efforts, especially through grassroots leadership and gender inclusivity.

Key Points:

- Awarded for her work on Pallikaranai Marsh, home to over 337 species.
- Leads an all-women research team, promoting skill-building and inclusivity.
- Faced challenges like legal hurdles and outdated land titles.
- Advocates the 'wise use' principle under the Ramsar Convention.
- Calls for streamlined policy and urban wetland conservation strategies.

IMPORTANT PERSONALITIES

Biju Patnaik

Context:

Tributes were paid to Biju Patnaik on his 109th birth anniversary for his contributions to Odisha and India.

Key Points:

- A freedom fighter, aviator, and statesman, he played an active role in India's independence struggle.
- He used his flying expertise to aid freedom fighters.
- He founded the Kalinga Foundation and launched the Kalinga Prize to promote science.
- Honored by Indonesia with the title "Bhumi Putra" and awarded the Bintang Jasa Utama in 1996.

Prince Frederik of Luxembourg

Prince Frederik of Luxembourg's passing at 22 has brought global attention to *POLG mitochondrial disease*, a rare and severe genetic disorder. Diagnosed at 14, he advocated awareness through *The POLG Foundation*, launched in 2022.

Key Facts:

- Caused by mutations in the POLG gene affecting mitochondrial DNA replication.
- Leads to multi-organ dysfunction, including muscle weakness, liver failure, and seizures.
- Symptoms are variable and progressive, delaying diagnosis.
- No known cure; current treatment focuses on symptom management and quality of life.

Kailash Satyarthi

Context

The Indira Gandhi National Centre for the Arts (IGNCA), in collaboration with the Satyarthi Movement for Global Compassion, held a discussion on the autobiography 'Diyaslai'.

About Diyaslai

'Diyaslai' is the autobiography of Nobel Peace Laureate Kailash Satyarthi. It chronicles his journey from humble beginnings in Vidisha to becoming a global voice for child rights.

About Kailash Satyarthi

Satyarthi has rescued over 1.38 lakh children from slavery and trafficking. He launched major campaigns like Shiksha Yatra (2001) for education rights, Bharat Yatra (2017) against child abuse, and contributed to the Right to Education Act (2009). In 2014, he was awarded the Nobel Peace Prize with Malala Yousafzai.

GAMES AND SPORTS**India to Host World Para-Athletics Grand Prix****Context:**

India will host the World Para-Athletics Grand Prix at Jawaharlal Nehru Stadium.

About the Event:

- Organized by World Para Athletics under the IPC.
- Offers classification opportunities for para-athletes.
- Serves as preparation for major competitions like the Paralympics..

Khelo India Para Games 2025

The second edition of the Khelo India Para Games (KIPG 2025) was held in New Delhi from March 20 to 27, 2025. Over 1,300 para-athletes competed across six sports, with Haryana emerging as the overall champion.

Highlights:

- Haryana topped the medal tally with 34 gold, 39 silver, and 31 bronze (total 104).
- Tamil Nadu and Uttar Pradesh stood second and third.
- 18 national para records were broken, with 12 by women athletes.
- Events were held in para archery, athletics, badminton, shooting, table tennis, and powerlifting.
- Total 596 medals awarded: 346 to men, 250 to women.
- Hosted at Jawaharlal Nehru Stadium, Indira Gandhi Stadium, and Karni Singh Shooting Range.

Top 5 in KIPG 2025 Medal Tally:

Rank	State	Gold	Silver	Bronze	Total
1	Haryana	34	39	31	104
2	Tamil Nadu	28	19	27	74
3	Uttar Pradesh	23	21	20	64
4	Rajasthan	22	18	24	64
5	Maharashtra	18	13	12	43

India Ranked Highest in Medal Tally at World Para Athletics Grand Prix 2025 in New Delhi

India secured a historic win at the *World Para Athletics Grand Prix 2025* held at Jawaharlal Nehru Stadium, New Delhi. This marked the first time India hosted an international para-athletics event, which has now been confirmed as an annual fixture until 2028. Indian para-athletes dominated the meet, finishing at the top of the medal tally with remarkable performances across multiple events.

India's Performance Highlights

India clinched a total of 134 medals, including:

- **Gold:** 45
- **Silver:** 40
- **Bronze:** 49

This outstanding result reflects India's rising stature in global para-athletics and the nation's commitment to inclusive sports development.

Key Indian Performances

- **Preethi Pal** won bronze in women's 200m T35-T38, continuing her legacy after her Paris Paralympics success.
- **Bhavani Munniyandi** secured bronze in women's long jump T38, T44, T61 with a 3.51m jump.
- **Vinay** and **Abhishek Babasaheb Jadhav** earned silver and bronze respectively in men's 200m T35.
- **Sagar, Janka Singh, and Balaji Rajendran** swept the podium in men's shot put F11-F20.
- **Bhuvi Agarwal** won bronze in women's long jump T20-T37.
- **Pranav Prashant** and **Naresh** secured silver and bronze in men's 200m T61-T64.
- **Fatima, Suman Bala, and Asha Jalandar** completed a podium sweep in women's discus throw F56-F57.
- **Sharath, Saurabh, and Ankur** won gold, silver, and bronze in men's 5000m T11-T12, concluding the event with a grand Indian victory.

India's Medal Tally at a Glance

Medal Type	Count
Gold	45
Silver	40
Bronze	49
Total	134

Indian Podium Sweeps

- Men's Shot Put F11-F20
- Women's Discus Throw F56-F57
- Men's 5000m T11-T12

Significance of the Event

- **First-Ever International Para Event in India:** This edition was India's debut in hosting a global para-athletic competition.

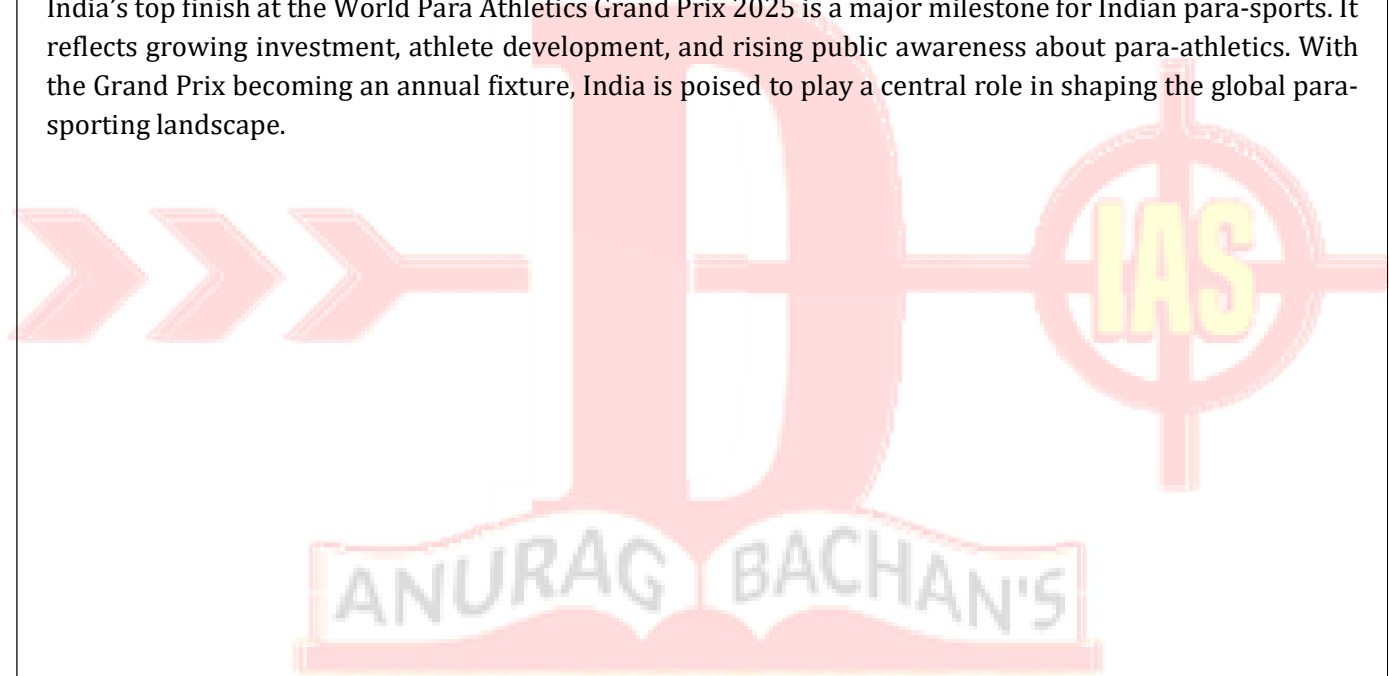
- **Annual Event till 2028:** Confirmed by World Para Athletics to continue in New Delhi every year until 2028.
- **Platform for Excellence:** With 150 Indian athletes competing in 90 medal events, it offered a vital stage for elite-level competition and preparation for future global meets.

Event Summary

Category	Details
Event	World Para Athletics Grand Prix 2025
Location	Jawaharlal Nehru Stadium, New Delhi
Total Medal Events	90
India's Medal Count	45 Gold, 40 Silver, 49 Bronze (Total 134)
Annual Status	To be held annually in India till 2028

Conclusion

India's top finish at the World Para Athletics Grand Prix 2025 is a major milestone for Indian para-sports. It reflects growing investment, athlete development, and rising public awareness about para-athletics. With the Grand Prix becoming an annual fixture, India is poised to play a central role in shaping the global para-sporting landscape.



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