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A. POLITY

1.1. Model Guidelines for Development and Regulation of Retirement Homes for Senior Citizens

Context:

Recently, the government reiterated the relevance of the 2019 Model Guidelines issued by the Ministry of Housing and Urban Affairs for the development and regulation of retirement homes, which had been circulated to all States and Union Territories.

Explanation:

- The Model Guidelines, issued in 2019 by the Ministry of Housing and Urban Affairs, provide a reference framework for States and Union Territories to regulate and develop retirement homes for senior citizens.
- **Land and Colonization** fall under Entry 18, List II (State List) of the **Seventh Schedule**, making regulation primarily a state responsibility.
- The guidelines prescribe **elder-friendly infrastructure**, including wheelchair-accessible ramps, lifts, handrails, power backup, ambulance services and panic alarm systems.
- Retirement home projects are covered under the **Real Estate (Regulation and Development) Act, 2016 (RERA)**, ensuring transparency, accountability and consumer protection.
- The initiative complements the **Maintenance and Welfare of Parents and Senior Citizens Act, 2007**, promoting dignity, independent living and quality care for India's ageing population.



1.2. Draft Advocates (Amendment) Bill, 2026 Released for Public Consultation

Context:

The Draft Advocates (Amendment) Bill, 2026, prepared in consultation with the Bar Council of India (BCI) and hosted by it, was placed in the public domain for stakeholder and public consultation.

Explanation:

- The **Advocates Act, 1961** regulates the legal profession in India and provides for the constitution of the Bar Council of India (BCI) and State Bar Councils.
- The Bar Council of India (BCI) is a statutory body established under the Advocates Act, 1961, responsible for legal education, professional ethics, enrolment standards, and disciplinary oversight of advocates.
- A Draft Bill is released for public consultation before introduction in Parliament, allowing stakeholders to suggest changes and improving the quality of legislation through **participative law-making**.



- Comments were invited until 31 July 2026, and the consultation period has since closed, reflecting the government's commitment to a transparent and participative legislative process.
- After consultation, the draft may be revised, approved by the Union Cabinet, introduced in Parliament, and becomes law only after passage by both Houses and Presidential assent.

1.3. NAMASTE Scheme Strengthens Safety, Dignity and Mechanisation for Sanitation Workers

Context:

The Government highlighted the progress of the National Action for Mechanised Sanitation Ecosystem (NAMASTE) scheme, under which 89,915 sewer and septic-tank workers and 2,52,163 waste pickers have been validated. Of the waste pickers, 1,31,864 have received PPE kits and 1,24,835 cases have been processed for Ayushman Bharat cards.

Explanation:

- NAMASTE (National Action for Mechanised Sanitation Ecosystem) is a **Central Sector Scheme** jointly implemented by the Ministry of Social Justice & Empowerment and the Ministry of Housing & Urban Affairs.
- It replaces the Self Employment Scheme for Rehabilitation of Manual Scavengers (SRMS) and focuses on mechanised sewer and septic tank cleaning, eliminating **hazardous manual scavenging**.
- Key components include worker profiling, PPE kits, health insurance, Ayushman Bharat coverage, skill development, entrepreneurship support and **Emergency Response Sanitation Units (ERSUs)**.
- The scheme complements the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013, aiming for **zero sanitation-related fatalities**, improved occupational safety and social inclusion.



1.4. National Anti-Doping Act, 2022 and Amendment Act, 2025 Come into Force

Context:

The Government of India has enforced the National Anti-Doping Act, 2022 and the National Anti-Doping (Amendment) Act, 2025.

Explanation:

- Doping refers to the use of **prohibited substances or methods** to artificially enhance sports performance, violating the principle of **fair play**.
- The National Anti-Doping Act, 2022 provides statutory backing for testing, investigations, results management, education, and dispute resolution in anti-doping matters.
- The National Anti-Doping (Amendment) Act, 2025 strengthens institutional autonomy, transparency, accountability, and procedural safeguards.
- India's anti-doping framework is aligned with the **World Anti-Doping Code (WADA Code)** and fulfils obligations under the UNESCO International Convention against Doping in Sport (2005).
- **National Anti-Doping Agency (NADA)** is India's apex body for implementing anti-doping rules, while **World Anti-Doping Agency (WADA)** sets global anti-doping standards.



1.5. UDISE+ 2025–26 Report on School Education in India

Context:

The Union Ministry of Education has released the **Unified District Information System for Education Plus (UDISE+) 2025–26 Report**, highlighting improvements in school education indicators such as teacher availability, enrolment, retention, digital infrastructure and gender representation across India.

Explanation:

- **UDISE+ (Unified District Information System for Education Plus)** is India's largest school education database, managed by the **Ministry of Education** to collect annual data from recognised schools across the country.
- It provides comprehensive information on **schools, teachers, students, infrastructure, enrolment, learning facilities and governance**, helping in evidence-based policymaking.
- The system supports monitoring of the **National Education Policy (NEP) 2020, Samagra Shiksha**, and progress towards **Sustainable Development Goal (SDG) 4 – Quality Education**.
- Key educational indicators include **Gross Enrolment Ratio (GER), Pupil-Teacher Ratio (PTR), Dropout Rate, Transition Rate and Retention Rate**, which measure access, participation and continuity in education.
- UDISE+ is also used for planning teacher deployment, improving school infrastructure, promoting digital education, ensuring gender equity and tracking inclusive education for children with disabilities.

1.6. SHE-LEAPS Platform for Lakhpati Didis

Context:

The government launched SHE-LEAPS to digitally support women-led Self-Help Group enterprises across rural India. It will track enterprise creation, income growth and livelihood performance under the Lakhpati Didi initiative.

Explanation:

- SHE-LEAPS stands for **Self-Help Entrepreneur-Livelihoods and Enterprise Application for Prosperity and Sustainability**.
- It is a digital platform for women SHG entrepreneurs involved in farm and non-farm rural enterprises.
- It was developed by Digital India Corporation and implemented under the LokOS platform.
- LokOS digitises activities of SHGs, Village Organisations and Cluster Level Federations.
- SHE-LEAPS captures real-time enterprise data, livelihood records, financial details and performance indicators.
- It supports enterprise creation, financial inclusion, value-chain integration and data-driven governance.
- The platform will help State Rural Livelihood Missions monitor women-led rural enterprises.
- Lakhpati Didi refers to an SHG member whose annual household income is at least ₹1 lakh, sustained across four agricultural seasons or business cycles, with an average monthly income above ₹10,000.



1.7. PM-AJAY and Scheduled Caste Upliftment

Context:

The Central Advisory Committee reviewed the performance of Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM-AJAY) and discussed its future roadmap. The focus was on expanding coverage, improving fund utilisation, livelihood support, skilling and hostel facilities for Scheduled Caste communities.

Explanation:

- PM-AJAY is a centrally sponsored scheme under the Ministry of Social Justice and Empowerment.
- It aims at socio-economic upliftment of Scheduled Caste (SC) communities.
- It combines earlier schemes related to Adarsh Gram, Grant-in-Aid and SC hostels.
- The Adarsh Gram component generally covers villages having more than 40% Scheduled Caste population and a total population of at least 500, and assesses their development on 50 indicators across ten development domains.
- The Grant-in-Aid component supports livelihood-boosting infrastructure and financial aid for community assets.
- Hostel component promotes educational empowerment by providing residential facilities for SC students.
- The scheme supports social justice, inclusive development, educational mobility and economic empowerment.
- AJAY Mobile App enables geo-tagged and time-stamped digital monitoring of community assets.



1.8. President Appoints Three Additional Judges to Andhra Pradesh High Court

Context:

The President of India has appointed three Additional Judges to the Andhra Pradesh High Court, strengthening its judicial capacity and helping reduce the pendency of cases.

Explanation:

- High Court judges are appointed by the President of India under Article 217 of the Constitution.
- For a judge other than the Chief Justice of a High Court, the appointment is made after consultation with the Chief Justice of India (CJI), the Governor of the State and the Chief Justice of the concerned High Court.
- In practice, the High Court Collegium initiates the proposal for the appointment or transfer of High Court judges, which the Supreme Court Collegium then considers before making its recommendation to the President through the Law Ministry, followed by presidential appointment.



- Additional Judges are appointed under Article 224 to deal with a temporary increase in the workload or backlog of cases.
- An Additional Judge can be appointed for a period not exceeding two years and may later be made a Permanent Judge.
- High Court judges retire at the age of 62 years, while Supreme Court judges retire at 65 years.
- High Courts exercise original, appellate, writ (Article 226) and supervisory jurisdiction over courts within the State.

B. Economy

2.1. Public Sector Banks Report Lowest-Ever Gross NPAs and Record Profits

Context:

According to the Ministry of Finance, Public Sector Banks (PSBs) recorded their lowest-ever Gross Non-Performing Assets (GNPA) ratio of 1.9% in FY 2025–26, while achieving a record net profit of ₹1.98 lakh crore. Strong credit growth, especially in MSME and retail lending, reflects improved asset quality and banking sector resilience.

Explanation:

- A **Non-Performing Asset (NPA)** is a loan where interest or principal remains **overdue for more than 90 days**, as per Reserve Bank of India (RBI) norms.
- **Gross NPA (GNPA)** represents the total value of bad loans before deducting provisions, while the Net NPA ratio is computed as net NPAs, after prescribed provisions and adjustments, divided by net advances, indicating the actual stressed assets on banks' books.
- A lower GNPA ratio signifies better asset quality, improved credit discipline and stronger financial stability of banks.
- **Capital to Risk-weighted Assets Ratio (CRAR)** measures a bank's capital adequacy and ability to absorb losses, ensuring compliance with Basel III norms.
- **Public Sector Banks (PSBs)** are majority-owned by the Government of India and play a crucial role in financial inclusion, priority sector lending, MSME financing and infrastructure development.
- Measures such as the Insolvency and Bankruptcy Code (IBC), SARFAESI Act, ECLGS, bank recapitalisation, digital monitoring and prudent provisioning have contributed to reducing NPAs and strengthening the banking sector.



2.2. India's Hub-and-Spoke International Aviation Strategy

Context:

The **Ministry of Civil Aviation** inaugurated **Hub & Spoke International Flight Operations from Amritsar**, making it the second spoke airport after Varanasi under India's International Aviation Hub Strategy.

Explanation:

- The **Hub-and-Spoke model** is an aviation network in which passengers from **spoke airports** are routed through a central **hub airport** to access multiple domestic and international destinations efficiently.
- Under the scheme, passenger's complete check-in, baggage tagging, immigration and customs at the spoke airport, enabling seamless transfers at the hub without repeating these formalities.



- The strategy seeks to develop Indian airports as **international transit hubs**, reducing dependence on foreign hubs such as Dubai, Doha, Singapore and Istanbul for connecting flights.
- The initiative improves network connectivity, aircraft utilisation, load factors, operational efficiency and passenger convenience, while supporting tourism, trade and regional economic development.
- India's aviation sector is regulated by the Ministry of Civil Aviation (MoCA), Directorate General of Civil Aviation (DGCA), Airports Authority of India (AAI) and Bureau of Civil Aviation Security (BCAS).
- The strategy complements **UDAN (Ude Desh ka Aam Nagrik)**, airport infrastructure expansion and the vision of **Viksit Bharat @2047** by creating a globally competitive aviation ecosystem.

2.3. Cabinet Approves BHAVYA Rasayan Scheme for Dedicated Chemical Parks

Context:

The Union Cabinet has approved the Bharat Audyogik Vikas Yojana Rasayan (BHAVYA Rasayan) Scheme to establish three dedicated Chemical Parks with a total outlay of ₹3,030 crore during FY 2026–27 to FY 2030–31.

Explanation:

- **BHAVYA Rasayan** is a Central Sector Scheme announced in the Union Budget 2026–27 to establish **three Chemical Parks** through the Challenge Route.
- The scheme aims to strengthen India's chemical manufacturing ecosystem through world-class common infrastructure, improve global competitiveness and promote sustainable industrial growth.
- The Centre will provide up to ₹1,000 crore per park, subject to a minimum ₹500 crore contribution by the concerned State Government.
- Each Chemical Park must have at least 8 sq. km. (2,000 acres) of contiguous, encumbrance-free land with **plug-and-play infrastructure**.
- Common infrastructure includes **Common Effluent Treatment Plant (CETP)**, Treatment, Storage and Disposal Facility (TSDF), hazardous waste management, solvent recovery, utilities, logistics and pipeline networks.
- The scheme promotes cluster-based industrial development, economies of scale, **Global Value Chains (GVCs)**, import substitution, export competitiveness, Atmanirbhar Bharat and environmentally sustainable chemical manufacturing.



2.4. Indian Railways Achieves 99.6% Broad-Gauge Electrification

Context:

Indian Railways has electrified about 99.6% of its broad-gauge network, making India one of the world's most extensively electrified large railway systems. Electrification has sharply reduced diesel consumption, carbon emissions and dependence on imported fossil fuels.

Explanation:

- Railway electrification replaces diesel traction with energy-efficient electric locomotives.
- India electrified 48,072 route km during 2014–26, compared with 21,801 km before 2014.
- Rail emits about 11.5 g CO₂ per tonne-km, nearly 89% less than road transport.
- Diesel use fell from 293 crore litres in 2015–16 to 108 crore litres in 2024–25.
- Electrification improves speed, haulage capacity and freight efficiency.
- Renewable integration includes about 1,161 MW solar and 103 MW wind capacity.
- Switzerland remains ahead with 100% railway electrification.



2.5. Mission Golden Spice Launched to Develop Meghalaya's GI-Tagged Lakadong Turmeric

Context:

The Union Government has launched Mission Golden Spice, a ₹175.45-crore mission to strengthen the value chain of GI-tagged Lakadong Turmeric in Meghalaya.

Explanation:

- Lakadong Turmeric is a Geographical Indication (GI)-tagged (2024) turmeric grown mainly in the West Jaintia Hills and East Jaintia Hills of Meghalaya, renowned for its exceptionally high curcumin content (7–10%), compared to the global average of about 2–3%.
- Curcumin is the principal bioactive compound responsible for turmeric's anti-inflammatory, antioxidant and nutraceutical properties.
- The five-year project (2025–2030) aims to enhance cultivation, processing, branding and exports, positioning Lakadong turmeric as a premium global spice.
- Mission Golden Spice is a ₹175.45-crore, convergence-based initiative led by MDoNER and the North Eastern Council (NEC), with support from APEDA, Spices Board, National Turmeric Board, ICAR, NABARD and SFAC.
- The mission focuses on value-chain development, GI monetisation, processing, branding, exports, farmer-producer organisations and integrated curcumin extraction facilities.
- The initiative aligns with the vision of Atmanirbhar North East and promotes "Brand North East" through value addition and sustainable agricultural exports.



2.6. NITI Aayog Launches Investment Friendliness Index (IFI)

Context:

NITI Aayog has released the Investment Friendliness Index (IFI) to benchmark the investment ecosystem across States and Union Territories. The Index aims to promote competitive and cooperative federalism by encouraging reforms that improve the ease of investment and support the vision of Viksit Bharat @2047.

Explanation:

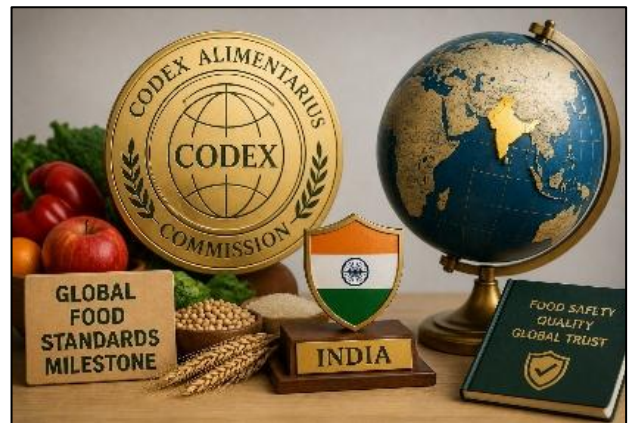
- NITI Aayog: Established in 2015, it is the Union government's policy think tank and promotes cooperation between the Centre and States.
- **The Investment Friendliness Index (IFI)** is a data-driven composite index assessing States' and Union Territories' ability to attract and sustain investments.
- It evaluates 28 States and 8 UTs across **8 pillars**: Infrastructure, Business Climate, Resources, Government Policy, Regulatory Ease, Institutional Environment, Financial Health, and Environmental Resilience.
- The framework uses **84 indicators**, combining **secondary data** and **investor perception surveys**.
- States are classified as Top Performers, Frontrunners, Emerging Performers, and Aspiring States; Gujarat, Maharashtra, Tamil Nadu, Goa, and Odisha emerged as overall Top Performers.
- The Index promotes Ease of Doing Business (EoDB), policy predictability, investor confidence, peer learning, and cooperative federalism to enhance domestic and foreign investment.

**2.7. India Secures Global Food Standards Milestone at Codex Alimentarius Commission****Context:**

The 49th session of the Codex Alimentarius Commission (CAC49), held in Geneva, adopted international standards for **Large Cardamom, Coriander, and Vanilla**, developed under the India-hosted Codex Committee on Spices and Culinary Herbs (CCSCH).

Explanation:

- **Codex Alimentarius Commission (CAC)** is a **FAO-WHO** joint body that develops science-based international food safety and quality standards.
- It aims to **protect consumer health** and ensure **fair practices** in international food trade.
- India hosts the **Codex Committee on Spices and Culinary Herbs (CCSCH)**; the **Spices Board** acts as its Secretariat.
- **Codex Standards** harmonise global quality, labelling, sampling and safety requirements, facilitating **market access** and reducing trade barriers.
- India was also accepted as **Co-Chair of the Electronic Working Group (EWG)** on risk analysis for new food products, strengthening its role in global food standard-setting.
- The **Electronic Working Group (EWG)** prepares technical guidance between Codex sessions through virtual collaboration.
- Large Cardamom is indigenous to India's **North-Eastern Himalayas**, while India is a leading producer and exporter of **Coriander**.



2.8. Cabinet Approves Mobile Phone Manufacturing Scheme (MPMS)

Context:

The Union Cabinet has approved the **Mobile Phone Manufacturing Scheme (MPMS)** with a budgetary outlay of **₹62,500 crore** for five years (FY 2026–27 to FY 2030–31). The scheme aims to boost domestic value addition, strengthen supply chains, promote Indian brands, and enhance India's global competitiveness in mobile phone manufacturing.

Explanation:

- **Mobile Phone Manufacturing Scheme (MPMS)** succeeds the **PLI Scheme for Large Scale Electronics Manufacturing (PLI-LSEM)** to accelerate electronics manufacturing.
- It provides **production-linked incentives** on eligible sales, higher incentives for **domestic sourcing** of components, and additional support for **design and R&D** to develop Indian brands.
- The scheme promotes **Make in India, Atmanirbhar Bharat**, technological sovereignty, and integration into **Global Value Chains (GVCs)**.
- It seeks to increase exports, generate employment, deepen domestic value addition, and strengthen India's electronics manufacturing ecosystem.



2.9. PMFME Scheme Crosses Two Lakh Credit-Linked Beneficiaries

Context:

The Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PMFME) Scheme has achieved a major milestone by sanctioning loans to over two lakh micro food processing enterprises.

Explanation:

- PMFME Scheme is a **Centrally Sponsored Scheme** launched in 2020 by the **Ministry of Food Processing Industries (MoFPI)** under the Aatmanirbhar Bharat Abhiyan for the period 2020–21 to 2024–25, subsequently extended until September 2026.
- It aims to formalise unorganised micro food processing enterprises (MFPEs) through credit-linked capital subsidy, capacity building, technology upgradation, branding, marketing, and market linkage.
- The scheme **provides a 35% credit-linked capital subsidy** (maximum ₹10 lakh per unit) for eligible individual enterprises.
- It follows the **One District One Product (ODOP)** approach to promote district-specific products, strengthen local value chains, and encourage cluster-based development.
- PMFME supports Self-Help Groups (SHGs), Farmer Producer Organisations (FPOs), cooperatives, and entrepreneurs through Seed Capital, Common Incubation Centres (CICs), and District Resource Persons (DRPs).
- The scheme promotes formalisation through Udyam Registration, FSSAI licensing, and GST registration, contributing to Aatmanirbhar Bharat, **Make in India**, and **Viksit Bharat @2047**.



2.10. FIU-IND Recognised at the Best Egmont Case Award (BECA) 2026

Context:

The Financial Intelligence Unit–India (FIU-IND) was adjudged the Runner-up at the Best Egmont Case Award (BECA) 2026 during the Egmont Group Plenary in Baku, Azerbaijan. The recognition was for uncovering a large-scale cyber fraud and money laundering network involving ₹868 crore through extensive domestic and international financial intelligence cooperation.

Explanation:

- Financial Intelligence Unit–India (FIU-IND) is the national agency under the Department of Revenue, Ministry of Finance, responsible for receiving, analysing, and disseminating information relating to suspicious financial transactions to combat money laundering and terrorist financing.
- The Egmont Group is a global network of Financial Intelligence Units (FIUs) that facilitates secure exchange of financial intelligence through the Egmont Secure Web (ESW) and currently has over 180 member jurisdictions.
- Money laundering is the process of disguising the proceeds of crime as legitimate assets and is regulated in India under the Prevention of Money Laundering Act (PMLA), 2002.
- Mule bank accounts are accounts used by criminals to transfer or conceal illicit funds, while cryptocurrency transactions increasingly feature in cross-border financial crimes.
- The Directorate of Enforcement (ED) investigates offences under PMLA, 2002, while the Indian Cyber Crime Coordination Centre (I4C) coordinates efforts against cybercrime.
- The case highlights the importance of Anti-Money Laundering and Counter Financing of Terrorism (AML/CFT) frameworks and international cooperation in tackling transnational financial crimes.



2.11. Government Mandates TReDS for Settlement of MSME Invoices by CPSEs

Context:

The Ministry of MSME has made it mandatory for all operating Central Public Sector Enterprises (CPSEs) to settle their transactions with MSME suppliers through the Trade Receivables Discounting System (TReDS). The move aims to ensure timely payments, improve liquidity, and provide collateral-free working capital to MSMEs.

Explanation:

- Trade Receivables Discounting System (TReDS) is an RBI-regulated electronic platform that facilitates financing of trade receivables of Micro, Small and Medium Enterprises (MSMEs) through competitive bidding by banks and NBFCs.
- Under invoice discounting, an MSME can sell its approved invoice to a financier at a discount and receive immediate funds without waiting for the buyer's payment.



- TReDS provides collateral-free, without-recourse financing, improving working capital and reducing the impact of delayed payments.
- The platform is governed by the Reserve Bank of India (RBI) under the Payment and Settlement Systems Act, 2007. Current platforms include RXIL, M1xchange, Invoicemart, C2treds, and DTX.
- The mandate requires all operating CPSEs to settle transactions with MSME suppliers through TReDS and disclose compliance during annual audits, strengthening payment discipline, transparency, and ease of doing business.
- The initiative supports the objectives of the MSME Development Act, 2006, promoting timely payments and improving MSME access to formal finance.

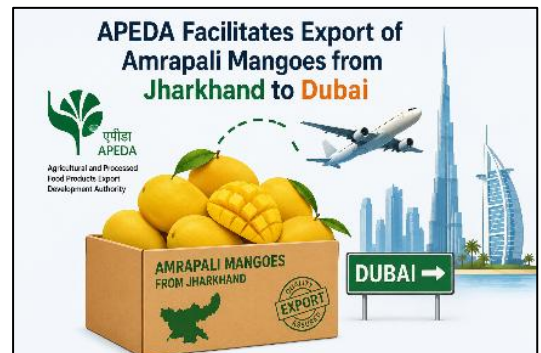
2.12. APEDA Facilitates Export of Amrapali Mangoes from Jharkhand to Dubai

Context:

APEDA has facilitated the export of 2 metric tonnes of Amrapali mangoes from Jharkhand's Gumla and Deoghar districts to Dubai. The initiative benefited women-led Farmer Producer Companies, giving farmers nearly 180% higher returns than local market prices.

Explanation:

- APEDA is a statutory body under the Ministry of Commerce and Industry, promoting export of agricultural and processed food products.
- The export involved Amrapali mangoes, a popular hybrid mango variety known for sweetness, pulp quality and export value.
- The mangoes were sourced from women-led Farmer Producer Companies (FPCs) in Jharkhand.
- FPCs are farmer-owned companies that help small farmers collectively access inputs, markets, credit and better prices.
- The orchards were developed by tribal women farmers under Birsa Harit Gram Yojana, in convergence with MGNREGA.
- The export supports Aspirational Districts and Aspirational Blocks, which aim to improve development indicators in backward regions.
- APEDA helped through capacity building, quality improvement, post-harvest handling and export facilitation.
- The initiative promotes women-led agriculture, tribal livelihoods, horticulture exports and farmer income enhancement.



2.13. UPI Goes Live in Greece

Context:

Unified Payments Interface (UPI) person-to-person remittance services have gone live in Greece through a Eurobank–NIPL partnership. The launch marks another step in the global expansion of India's digital payments ecosystem and supports stronger India–Greece economic cooperation.

Explanation:

- Unified Payments Interface (UPI) is an instant real-time digital payment system developed by National Payments Corporation of India (NPCI).
- It enables bank-to-bank money transfer using mobile phones through Virtual Payment Address (VPA), QR code or mobile number.
- NPCI International Payments Limited (NIPL) is the international arm of NPCI, responsible for taking UPI and RuPay abroad.
- UPI supports interoperability, meaning different banks and payment apps can work on one common platform.
- It is based on Immediate Payment Service (IMPS) infrastructure and enables 24×7 instant payments.
- Global adoption of UPI helps Indian travellers, diaspora and businesses make low-cost, secure and faster transactions abroad.
- UPI is already available in countries such as the UAE, Singapore, Bhutan, Nepal, Sri Lanka, France, Mauritius, Cambodia and Qatar; the arrangements differ, as some countries permit person-to-merchant QR payments while others, including Greece, currently cover person-to-person remittances.
- UPI's expansion reflects India's Digital Public Infrastructure (DPI) model.



2.14.eSARAS Platform for Women Self-Help Groups

Context:

The Ministry of Rural Development highlighted the role of eSARAS in expanding market access for rural women artisans and Self-Help Groups. The platform connects SHG products with digital marketplaces, logistics support and national consumers.

Explanation:

- **eSARAS** (Sale of Articles of Rural Artisans Society) is the official online marketplace for products made by women Self-Help Groups (SHGs) under DAY-NRLM.
- DAY-NRLM stands for Deendayal Antyodaya Yojana-National Rural Livelihoods Mission, implemented by the Ministry of Rural Development.
- It promotes women entrepreneurship, rural livelihoods, financial inclusion and community-based enterprise.
- eSARAS helps SHGs sell products directly, reducing dependence on intermediaries and improving income opportunities.
- Products include handicrafts, textiles, food items, personal care products, toys and accessories.
- The platform is integrated with ONDC and UMANG, expanding access to wider digital markets.
- ONDC enables open digital commerce, while UMANG provides access to multiple government services through one platform.



C. Environment, Ecology and Disaster Management

3.1. MoTA–CSIR-NBRI MoU for Conservation of RET Medicinal Plants and Tribal Knowledge

Context:

The Ministry of Tribal Affairs (MoTA) has signed a three-year Memorandum of Understanding (MoU) with CSIR–National Botanical Research Institute (CSIR-NBRI), Lucknow to conserve Rare, Endangered and Threatened (RET) medicinal plant species, etc.

Explanation:

- **CSIR-NBRI, Lucknow** is a premier CSIR institute specializing in plant science, taxonomy, conservation and botanical research.
- The MoU focuses on conserving **RET medicinal plant species** through tissue culture, specialized seed banks, and ethnobotanical assessment of tribal bioresources.
- **Ethnobotany** studies the relationship between indigenous communities and plants, including their medicinal, cultural and economic uses.
- All research requires **Prior Informed Consent (PIC)** of Gram Sabhas and tribal communities in accordance with the Biological Diversity Act, 2002.
- The partnership recognizes **Traditional Knowledge (TK)**, follows **Access and Benefit Sharing (ABS)** mechanisms, promotes joint intellectual property rights, and channels benefits through National/State Biodiversity Funds while building the capacity of tribal youth.



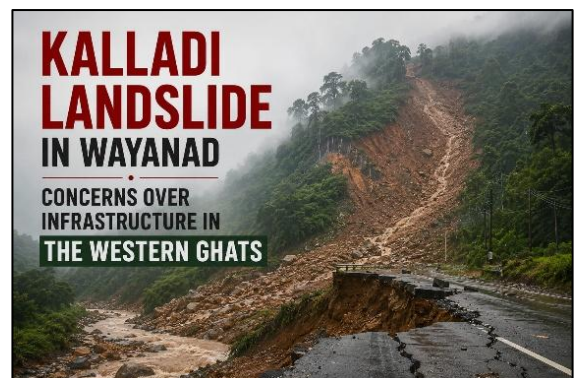
3.2. Kalladi Landslide in Wayanad and Concerns over Infrastructure in the Western Ghats

Context:

A landslide at Kalladi in Wayanad, Kerala, near the Anakkampoyil–Kalladi–Meppadi tunnel road project, has raised concerns over infrastructure development in the ecologically fragile **Western Ghats**. Experts and officials have raised concerns about intense rainfall, slope modification, tunnelling and inadequate geological assessment, although responsibility for the slide remains contested and under investigation.

Explanation:

- Wayanad lies in the Western Ghats region, parts of which are inscribed as a UNESCO World Heritage Site and one of the world's biodiversity hotspots.
- The Anakkampoyil–Kalladi–Meppadi Tunnel Road Project aims to improve connectivity between Kozhikode and Wayanad.
- **Landslides** occur when soil or rock moves downslope due to gravity, often triggered by intense rainfall, earthquakes, slope cutting, or human activities.
- **Tunnelling, excavation, deforestation, and unscientific dumping of excavated material** can destabilize hill slopes.



- Experts note that short-duration, high-intensity rainfall events (cloudbursts) appear to be increasing in the Western Ghats, which can raise landslide risk.
- Environmental Impact Assessment (EIA) evaluates the environmental consequences of major projects before approval, while geological and climate-risk assessments are crucial in fragile mountain ecosystems.
- The incident highlights the need for sustainable infrastructure, strict compliance with EIA conditions, and scientific planning in ecologically sensitive regions.

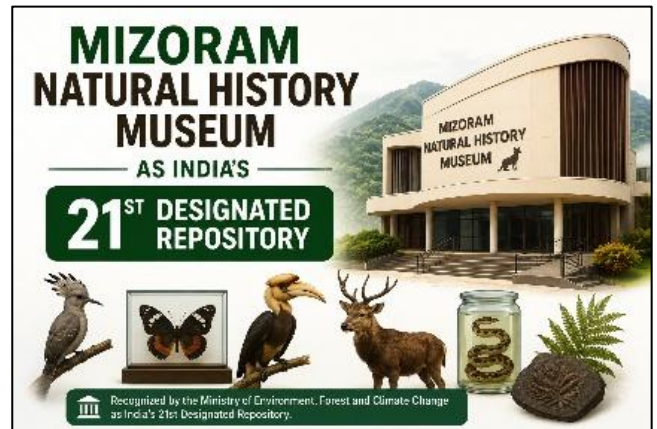
3.3. Mizoram Natural History Museum as India's 21st Designated Repository

Context:

The Ministry of Environment, Forest and Climate Change has notified the Natural History Museum, Mizoram University, as India's 21st Designated Repository under the Biological Diversity Act, 2002. It will preserve authenticated biological specimens from the Indo-Burma Biodiversity Hotspot.

Explanation:

- Biological Diversity Act, 2002 regulates access to India's biological resources and protects associated traditional knowledge.
- Section 39 allows the Central Government to notify institutions as Designated Repositories.
- These repositories preserve voucher specimens and type specimens of plants, animals and microorganisms.
- Voucher specimens help verify species identity; type specimens act as the scientific reference for newly discovered species.
- Mizoram lies in the Indo-Burma Biodiversity Hotspot, rich in endemic flora and fauna.
- NHM will document taxa such as pteridophytes, macrofungi, reptiles, amphibians, fishes, moths, beetles and butterflies.
- It supports ex-situ conservation, genetic diversity protection and the Kunming–Montreal Global Biodiversity Framework.



D. Science and Technology

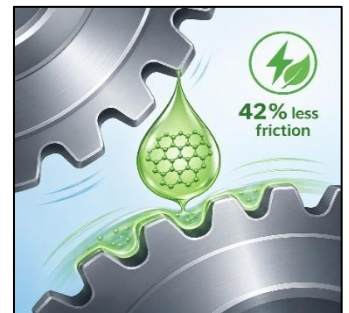
4.1. Borophene-Based Bio-Lubricant Reduces Friction and Energy Loss

Context:

Scientists at IASST, Guwahati, have demonstrated the use of borophene as a lubricant additive in castor oil. Adding only 0.1 wt.% borophene reduced friction by about 42%, improving energy efficiency and machinery life.

Explanation:

- **Borophene** is a two-dimensional nanomaterial composed of boron atoms.
- **Castor oil** is a renewable, biodegradable base lubricant suitable for green lubrication.
- Borophene disperses uniformly in castor oil without chemical modification.
- During operation, it forms a protective **tribofilm** containing iron oxides, carbonaceous species and boron compounds.
- The tribofilm lowers **shear stress**, surface roughness and mechanical wear.
- It improves load-bearing capacity and reduces the **coefficient of friction**.
- Potential applications include marine systems, renewable-energy equipment and sustainable manufacturing.



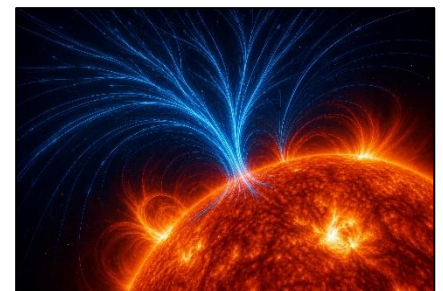
4.2. Magnetic Tree Hypothesis Validated Through Sun's Upper Atmosphere Study

Context:

Researchers from ARIES, in collaboration with Indian institutions and NASA, have discovered that the Sun's meridional plasma flow extends into the upper chromosphere, providing the first observational evidence supporting the magnetic tree hypothesis. The finding improves understanding of the solar dynamo and space weather, which can affect satellites, communication, navigation, and power grids on Earth.

Explanation:

- The Sun consists of the Photosphere (visible surface), Chromosphere, Transition Region, and Corona; its atmosphere is composed of hot ionized gas called plasma.
- **Meridional flow** is a slow poleward movement of plasma that transports magnetic fields across the Sun and helps regulate the 11-year solar cycle.
- The Solar Cycle is the periodic rise and fall of the Sun's magnetic activity approximately every 11 years, influencing sunspots, solar flares, and other energetic events.
- The **Solar Dynamo** generates the Sun's magnetic field through plasma motion and differential rotation, driving solar flares, Coronal Mass Ejections (CMEs), and space weather.

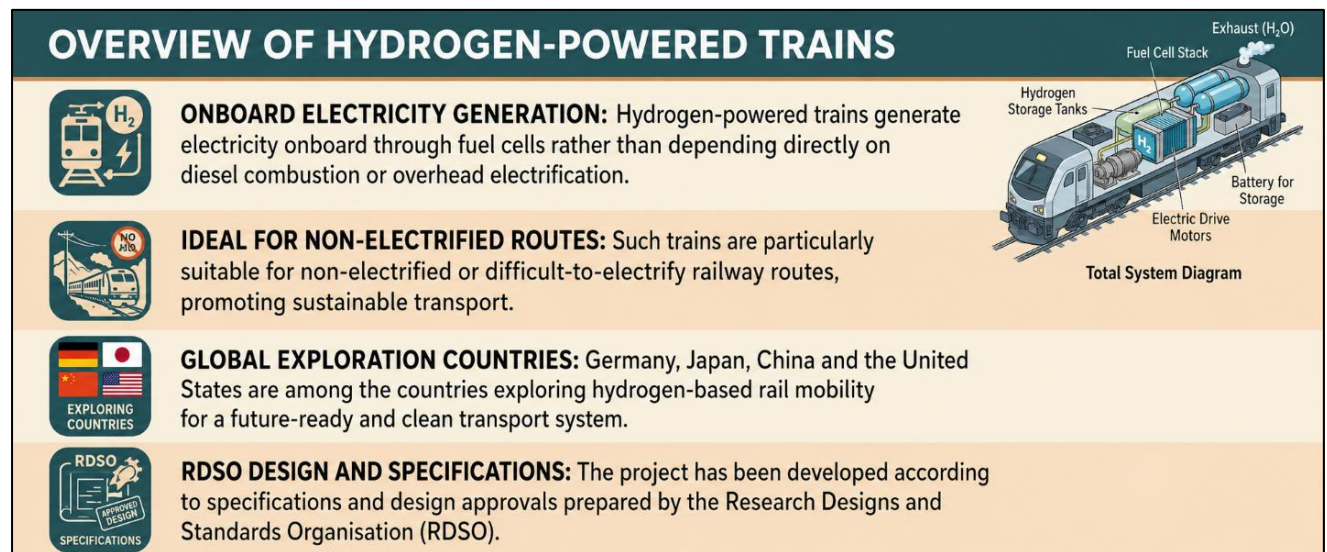


- The **Magnetic Tree Hypothesis** proposes that magnetic structures in the Sun's upper atmosphere remain connected to deeper solar layers, like branches connected to the trunk and roots of a tree.
- The study used the **Nobeyama Radioheliograph (Japan)**, demonstrating how radio astronomy can probe the Sun's internal dynamics and validate the magnetic tree hypothesis.

4.3. India's First Hydrogen-Powered Train: Advancing Green Rail Mobility

Context:

India's first indigenously designed hydrogen fuel-cell train was flagged off on 17 July 2026 on the Jind–Sonipat section of Northern Railway. By 25 July 2026 it had run over 1,200 km and reportedly saved more than 3,200 litres of diesel. The pilot project aims to demonstrate low-emission rail transport while building domestic capabilities in hydrogen propulsion, refuelling and safety systems.



Explanation:

- It supports the **National Green Hydrogen Mission**, *Atmanirbhar Bharat* and Indian Railways' objective of achieving net-zero carbon emissions.
- As a pilot initiative, it will generate operational knowledge for the future expansion of hydrogen-powered mobility.

Key Features:

- The train is a **10-car trainset** comprising two Hydrogen Driving Power Cars and eight trailer coaches.
- It has a total power of 2,400 kW generated by its two hydrogen driving power cars and can carry approximately 2,600 passengers.
- It has an approved operational speed of 75 kmph and a design speed of 110 kmph.

How Does It Work?

- Its principal energy source is a **Proton Exchange Membrane Fuel Cell (PEMFC)**.
- Inside the fuel cell, hydrogen reacts electrochemically with atmospheric oxygen across a proton-conducting membrane to generate electricity.
- Electricity powers the traction motors, while water vapour and heat are the principal onboard by-products.
- **Lithium iron phosphate batteries** store supplementary energy, support acceleration and regulate fluctuations in power demand.

- Hydrogen has a gravimetric energy content of around **120 MJ/kg**, compared with approximately 43 MJ/kg for diesel. However, it requires specialised high-pressure storage because of its low volumetric energy density.

Hydrogen Infrastructure:

- India's largest railway hydrogen storage and refuelling facility has been established at Jind, Haryana, with a capacity of nearly 3,000 kg.
- The PESO-licensed facility contains hydrogen compressors, dispensing equipment, critical spares and a standby compressor.
- It follows **NFPA-2** and **ISO 19880** standards and has undergone independent safety assessment by TUV SUD.

Operational Safety:

- Hydrogen and flame detectors continuously monitor production, storage and dispensing facilities.
- Continuous ventilation prevents gas accumulation, while automatic systems can stop the hydrogen supply upon detecting heat, flame or smoke.
- Real-time displays communicate system health to the loco pilot, and an emergency mode enables the train to be moved to safety.
- Trained personnel, technical staff, regular audits, prescribed maintenance and round-the-clock monitoring strengthen operational preparedness.

Significance and Concerns:

- The project promotes indigenous technological capability and can reduce local air pollution and dependence on imported fossil fuels.
- It can support green-hydrogen demand and provide clean transport on routes where full electrification is uneconomical.
- Nevertheless, green hydrogen remains expensive, requires considerable renewable electricity and presents storage and transportation challenges.
- Its lifecycle emissions depend on the production method; hydrogen derived from fossil fuels cannot provide fully clean mobility.
- The pilot must therefore evaluate cost, efficiency, durability, infrastructure requirements and safety before large-scale deployment.

Conclusion:

The hydrogen train is not merely a new trainset but a demonstration of an entire clean-mobility ecosystem. Its success can enable wider adoption, provided India expands affordable green-hydrogen production, maintains rigorous safety standards and deploys the technology on routes where it offers clear advantages over electrification.

4.4. MeitY Releases Digital Threat Report 2025–26 for India's BFSI Sector

Context:

The Ministry of Electronics and Information Technology (MeitY), in collaboration with CERT-In, CSIRT-Fin, and SISA, has released the second edition of the Digital Threat Report 2025–26 for India's Banking, Financial Services, Insurance (BFSI), and payments ecosystem.

Explanation:

- The BFSI (Banking, Financial Services and Insurance) sector underpins critical financial services, and systems specifically designated within it form part of India's Critical Information Infrastructure (CII); the sector is increasingly vulnerable to cyber threats due to rapid digitalisation.

- The report identifies **AI asymmetry**, where attackers exploit Artificial Intelligence (AI) faster than defenders, enabling large-scale phishing, credential theft, deepfakes, social engineering, cloud exploitation, and supply-chain attacks.
- It introduces the **4-Layer Gap Archetype Framework**, which analyses cyber breaches as a sequence of systemic failures rather than isolated incidents.
- **CERT-In**, designated under Section 70B of the Information Technology Act, 2000 (as amended in 2008), is India's national agency for responding to cyber security incidents.
- **CSIRT-Fin** is the sectoral **Computer Security Incident Response Team** for the financial sector, coordinating cyber incident prevention and response across banking, insurance, securities, and pension entities.
- The report recommends continuous risk assessment, threat intelligence sharing, Digital Forensics and Incident Response (DFIR), Zero Trust Architecture, AI-enabled defence, and stronger cyber resilience to secure India's digital financial ecosystem.



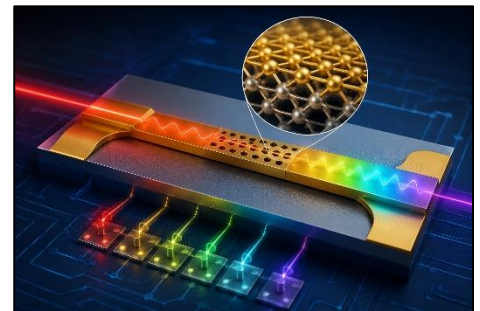
4.5. Strain-Tunable Metals for Programmable Nanophotonic Devices

Context:

Researchers from the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru have shown that the optical properties of metals can be changed by applying **mechanical strain**. This discovery may help build **programmable nanophotonic devices**, optical sensors and chip-compatible photonic circuits.

Explanation:

- Metals interact with light through their free electrons.
- In some metals, light can be trapped and concentrated at extremely small scales; this is called **plasmon resonance**.
- Earlier, scientists believed that a metal's optical properties were mostly fixed after choosing its material composition.
- **Simple idea:** Metals usually interact with light in a fixed way, but JNCASR scientists showed that if an ultrathin metal film like titanium nitride is slightly stretched or strained, its electrons behave differently. So, the metal can be "tuned" to reflect, absorb or trap light differently.
- **Simple example:** Just as tightening a guitar string changes its sound, applying strain to a metal changes how it responds to light. This can help make tiny light-based devices for sensors, cancer diagnosis, optical chips and programmable nanophotonic devices.



4.6. Mahendragiri: Project 17A Indigenous Stealth Frigate

Context:

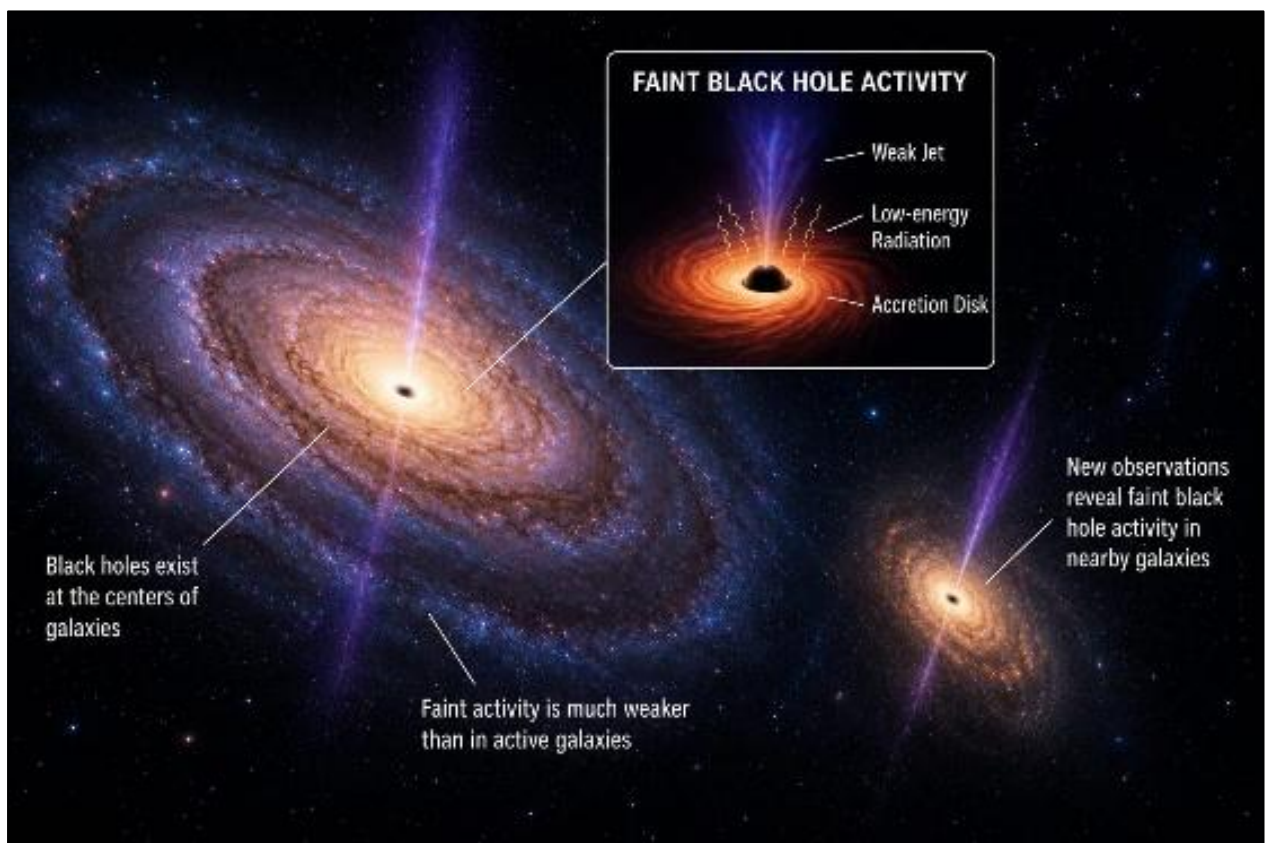
The Indian Navy commissioned Mahendragiri (F38), the sixth Project 17A indigenous stealth frigate to enter service, at Visakhapatnam on 11 July 2026. The warship highlights India's progress in indigenous naval design, stealth technology and defence manufacturing.

Explanation:

- Project 17A is India's programme to build advanced indigenous stealth guided-missile frigates as successors to the Shivalik-class frigates.
- A frigate is a medium-sized naval warship used for escort, patrol, anti-submarine warfare, anti-air warfare and maritime security operations.
- Stealth features reduce a ship's radar signature, making it harder for enemy sensors to detect and track.
- Mahendragiri was designed by the Indian Navy's Warship Design Bureau (WDB) and built by Mazagon Dock Shipbuilders Limited (MDL), Mumbai; it was the seventh and final ship launched under the project, although the sixth to be commissioned.
- It has over 75% indigenous content, supporting Aatmanirbhar Bharat, MSMEs and India's defence industrial base.
- It uses CODOG propulsion, meaning Combined Diesel or Gas, allowing efficient cruising and high-speed operations.
- It is equipped for anti-air, anti-surface and anti-submarine warfare, along with HADR, Search and Rescue and Indo-Pacific maritime security roles.

**4.7. Faint Black Hole Activity in Nearby Galaxies****Context:**

A high-resolution radio study using the e-MERLIN radio array has revealed weakly active supermassive black holes in nearby galaxies. The study shows that faint black hole activity may be common in the present-day Universe.



Explanation:

- Most galaxies are believed to contain a supermassive black hole at their centre, but many remain faint and difficult to detect.
- A black hole becomes active when it accretes gas and dust, releasing energy through radiation, jets and outflows.
- Such active centres are called Active Galactic Nuclei (AGN) and can influence star formation and galaxy evolution.
- Radio astronomy detects radio waves from compact sources, jets and outflows associated with black hole activity.
- e-MERLIN is a network of radio telescopes in the United Kingdom that works as an interferometer to produce high-resolution images.
- Chandra X-ray Observatory data helped confirm that the emissions came from black hole activity, not from star formation or supernova remnants.

4.8. Thermal Evolution of Solar Storms and Space Weather Forecasting**Context:**

Scientists from the Indian Institute of Astrophysics (IIA) have discovered that nearly 45% of Interplanetary Coronal Mass Ejections (ICMEs) exhibit heating as they travel from the Sun to Earth. The findings can improve the prediction of severe space weather events affecting satellites, GPS, communications and power grids.

Explanation:

- Coronal Mass Ejections (CMEs) are massive eruptions of magnetised plasma from the Sun's corona; when they travel through space they are called Interplanetary CMEs (ICMEs).
- Earth-directed ICMEs interact with Earth's magnetosphere, causing geomagnetic storms.
- Such storms can disrupt satellite operations, GPS, radio communication, aviation routes and power grids, while producing auroras.
- Solar activity follows an 11-year Solar Cycle, with CMEs becoming more frequent during the solar maximum.
- The study analysed 29 years (1995–2024) of observations near the L1 (Lagrange Point-1), about 1.5 million km from Earth.
- Contrary to earlier assumptions, many ICMEs continue heating in transit. The study found an association rather than a direct cause: the most geoeffective events (those producing stronger geomagnetic storms) tended to combine a heating state with strong magnetic fields and compressed sheath regions.
- Data from Aditya-L1 will further improve space weather prediction models.



E. History

5.1. National Mission on Cultural Mapping and Mera Gaon Meri Dharohar (MGMD)

Context:

The Union Government informed Parliament that the National Mission on Cultural Mapping (NMCM), through the Mera Gaon Meri Dharohar (MGMD) initiative, undertakes village-level cultural mapping across India.

Explanation:

- The National Mission on Cultural Mapping (NMCM) aims to document and preserve India's tangible and intangible cultural heritage through village-level cultural mapping.
- Mera Gaon Meri Dharohar (MGMD) creates village cultural profiles, documenting artists, artisans, folk art groups, cultural institutions, festivals, crafts and traditional knowledge.
- The Mission focuses on **documentation, not registration**; hence it does not maintain category-wise or state-wise registers of artists and does not provide financial assistance, insurance or social security.
- The initiative supports the preservation of Intangible Cultural Heritage (ICH), including folk theatre, music, dance, crafts, oral traditions and performing arts, while separate integration with tourism, education or skill development is not currently provided.



5.2. India to Restore Indonesia's UNESCO-listed Prambanan Temple Complex

Context:

Prime Minister Narendra Modi visited the **UNESCO World Heritage Prambanan Temple Complex** in Indonesia along with President Prabowo Subianto. The two leaders unveiled a plaque marking the commencement of the Archaeological Survey of India (ASI) conservation and restoration project, highlighting the shared civilizational heritage between India and Indonesia.

Explanation:

- **Prambanan Temple Complex** is a **UNESCO World Heritage Site** located near **Yogyakarta, Indonesia**.
- Built in the **9th century** by the **Sanjaya Dynasty**, it is the **largest Hindu temple complex** in **Indonesia**.
- The temple is dedicated to the **Trimurti - Brahma (Creator), Vishnu (Preserver), and Shiva (Destroyer)**, with **Shiva Temple** being the tallest.
- It reflects the spread of **Indian culture, Hinduism, and temple architecture** in **Southeast Asia**.
- The **Archaeological Survey of India (ASI)** undertakes heritage conservation in India and abroad; it earlier carried out extensive documentation of **Borobudur** and will now work at **Prambanan**.
- The project strengthens **India-Indonesia cultural diplomacy** and preservation of **shared civilizational heritage**.





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