

Arbitration Mechanism in India



Arbitration framework has matured considerably but challenges remain: CJI Surya Kant Despite significant legislative and judicial reforms to strengthen the arbitration ecosystem, India continues to be a less preferred destination for international arbitration.

- **Arbitration is a procedure** in which a dispute is submitted, by agreement of the parties, to one or more arbitrators who make a binding decision on the dispute.
- Arbitration is a **quasi-judicial proceeding**. It is one of the mechanisms of **Alternate Dispute Resolution (ADR)**.

Arbitration Mechanism in India

- **Arbitration and Conciliation Act, 1996** governs the arbitral proceedings in India.
 - It was based on UNCITRAL (United Nations Commission on International Trade Law) **Model Law on International Commercial Arbitration 1985** and **UNCITRAL Conciliation Rules, 1980**.
 - Awards are **final, binding, and globally enforceable**.
 - **Mumbai Centre for International Arbitration (MCIA)** and the **Delhi International Arbitration Centre (DIAC)** provide institutional support.
 - **Key Amendments to the Act**
 - **2015:** Set a **12-month completion timeline**; minimized court interference.
 - **2019:** Created the **Arbitration Council of India (ACI)**.
 - **2021:** Allows for an **unconditional stay of the enforcement of arbitral awards** in cases where the arbitration agreement, contracts, or award itself was obtained through fraud or corruption.

Recommendations for Strengthening the Arbitration Regime

- **Modernize Laws:** Aligning domestic legal frameworks with international standards.
- **Limit Judicial Intervention:** By adopting a pro-arbitration stance.
- **Leverage Technology:** Using digital tools like e-filing and videoconferencing.
- **Boost Public Awareness:** Through ICT campaigns.

Social Media Ban for Minors



Karnataka and Andhra Pradesh to Ban Social Media Use by Minors Karnataka plans to ban social media for children under 16, and Andhra Pradesh for those under 13.

- Economic Survey 2025-26 had already flagged **digital addiction** as a key threat to youth and recommended **age-based access limits** and platform-level age verification.

Significance of Age-based Bans

- **Protecting child mental health:** Rising concerns about **digital addiction**, **cyberbullying**, and exposure to harmful online content.
- **Excessive screen time:** Uncontrolled smartphone and social media use affects children's **cognitive and social development**.
- **Promoting healthier lifestyles:** Complementary initiatives encourage reading and **offline activities** among school children.

Challenges

- **Jurisdictional Barriers:** Regulating the internet is **exclusively** the Union government's domain under the **Information Technology Act, 2000** raising **constitutional and legal hurdles**.
- **Enforcement:** Age verification and monitoring of users remain challenging without **robust age-verification tools** and strict compliance from platforms.
- **Rights & Pushback:** Critics argue bans **infringe** on **children's rights** to information, expression, and participation, **advocating** for digital literacy over punitive measures.
- **Industry concerns:** Bans could **push minors toward** less regulated or unsafe online spaces.

Other nations with similar restrictions

- **Australia** became the world's first country to implement a nationwide social media ban for children under 16 in late 2025.
- **Spain** mandated **age verification** for minors under 16.

Removal of Speaker



Lok Sabha to take up resolution seeking removal of speaker today.

Removal of Speaker

Constitutional Provision:

- **Article 94:** It deals with **vacation, resignation, and removal of the Speaker** and Deputy Speaker.
- **Article 94(c):** The Speaker/Deputy Speaker can be removed by a **resolution passed by a majority of all the then members** of the Lok Sabha.

Procedure for removal

- **Notice:** Written notice to **Secretary-General of Lok Sabha**, supported by at least **50 members**.
 - **Minimum 14 days' notice is required** before the resolution can be moved.
- **Discussion stage:** Speaker cannot preside, but can **participate and vote in the first instance (no casting vote)**.

Supplementary Demand for Grants

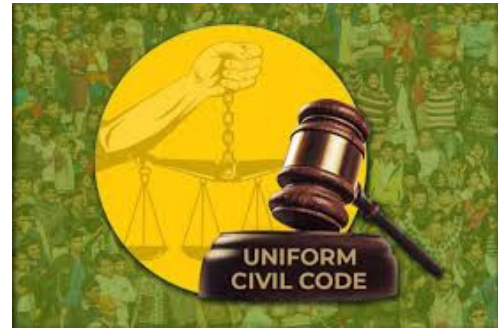


Supplementary demand for grants for 2025-26, tabled in Parliament.

About Supplementary Demand for Grants

- **Under Article 115**, it is caused to be laid by the President of India before both the Houses of the Parliament.
- It shows the estimated amount of **further expenditure necessary** in respect of a financial year **over and above the expenditure authorized** in the Budget for that year.
- It may be **token, technical, or substantive/cash**.

Uniform Civil Code



Recently, the Supreme Court in *Pavani Shukla vs UoI* suggested UCC to address gender bias in personal laws.

About Uniform Civil Code (UCC)

- It seeks to replace religion-based **personal laws** with a **common law** applicable to all, irrespective of religion, caste, creed, gender, or sexual orientation.
- **Constitutional provision:**
 - **Article 44:** directs the State to endeavour to secure a uniform civil code for citizens throughout the territory of India.
 - **Federal status:** Marriage, divorce, adoption, and succession are part of concurrent list (7th schedule) allowing both Centre and States to enact laws.

Need of UCC

- **Ensures Gender Justice:** UCC eliminates discriminatory practices in personal laws.
- **Promotes Secularism:** UCC ensures that civil laws are not influenced by religious beliefs, thus upholding the principle of secularism.
- **Simplifies Legal Procedures:** Associated with marriage, divorce, and inheritance.
- **Fosters National Unity:** By transcending religious and community divisions, UCC promotes common citizenship and strengthens national unity.

Current Status of UCC In India

- **Uttarakhand** became the **1st state and only in independent India** to implement UCC till date
- **Goa** has had a form of common civil code is in practice, the Portuguese Civil Code of 1867.
- Currently, there is **no nationwide UCC** in India.
 - **Supreme Court** in various judgements e.g., **Shah Bano (1985)**, **Sarla Mudgal (1995)**, has called for implementation of UCC.
- **21st Law Commission of India (2018)** in one of its **Consultation Paper** opined that the formulation of UCC is **neither necessary nor desirable** at this stage, rather emphasized on the reforms must be undertaken on family laws of every religion to make them gender-just.

Passive Euthanasia

Supreme Court (SC) applies Passive Euthanasia framework for first time. The SC in *Harish Rana vs Union of India* judgement permitted the withdrawal of artificial life support of a man who has been in a vegetative state for more than 12 years on the basis of Best Interest of the Patient Principle.



- The SC waived the usual 30-day consideration period as the patient's parents and both medical boards unanimously agreed that recovery was impossible.
- **Euthanasia** refers to the hastening of a patient's death to relieve suffering and is broadly classified into two types- Passive and Active (refer to box).

Passive euthanasia

- Under it, a patient is allowed to die naturally by withholding or withdrawing medical treatment that sustains life.
- Legal status:
 - Aruna Ramchandra Shanbaug case (2011): SC rejected a plea for euthanasia, but allowed passive euthanasia under strict conditions for terminal and irreversible patients.
 - In Common cause judgment (2018), SC recognised it and held that right to die with dignity is a fundamental right under Article 21.
 - In this case, it laid down guidelines for it and recognised the concept of a 'living will', with oversight involving DMs, judicial officers and medical specialists.
 - The court had held that passive euthanasia could be carried out using Advance Medical Directives.
 - Modified Guidelines issued by the SC in 2023: A primary and a secondary medical board will have to be formed for an expert opinion on the withdrawal of artificial life support for a patient in a vegetative state.

Other key highlights of Judgement

- **Enact a Comprehensive law:** Court urged the Parliament to enact a comprehensive, coherent statutory framework governing end-of-life care and passive euthanasia.
- **Administrative Directives:** To improve the process for future cases, the court directed High Courts to ensure that judicial magistrates are informed by hospitals whenever medical boards decide to withdraw or withhold life support.

Active Euthanasia

- **Active euthanasia** refers to the physician's deliberate act, usually the administration of lethal drugs, to end an incurably or terminally ill patient's life.
- **Active euthanasia** is illegal in India.
- **Legalised** in countries like the Netherlands, Belgium, etc.

Creamy Layer

SC observed that creamy layer status of Other Backward Classes (OBCs) cannot be decided solely based on parental income.



- The court noted that treating similarly placed employees of private entities and PSUs differently from government employees, for deciding the Creamy layer, would amount to discrimination.

About Creamy layer

- **The concept of creamy layer** (more socio-economically advanced members among OBCs) arose out of the landmark **Indra Sawhney** case in 1992.
 - **In the Indra Sawhney case**, the Supreme Court upheld the 27% OBC reservation in civil posts, subject to the exclusion of the creamy layer.
- **The Ram Nandan Prasad Committee** recommended the criteria for creamy layer - people whose parents are/were in a certain category of government services, and people earning above a threshold income.
 - The threshold income was increased to **Rs. 8 lakh** in 2017.

Article 105

The Lok Sabha Speaker clarified that Article 105 of the Constitution places freedom of speech within the framework of parliamentary rules.



About Article 105

- It defines the powers, privileges, and immunities of the Parliament and its members and committees.
- **Key provisions:**
 - **Freedom of speech in Parliament:** No Member of Parliament shall be liable to any proceedings in any court in respect of anything said or any vote given by him in Parliament or any committee.
 - **No person shall be so liable in respect of the publication** by or under the authority of either House of Parliament of any report, paper, votes or proceedings.
 - **Other powers and privileges are to be defined by Parliament by law**, or to follow those that existed at the time of the **44th Amendment in 1978**.
 - **Eligibility:** persons entitled to speak and take part in parliamentary proceedings, e.g. **MPs, Attorney General of India, etc.**

SC on Menstrual Leave



Menstrual Leave may be Counter-productive to Women: Supreme Court (SC) Disposing off a writ petition seeking mandatory paid menstrual leave, SC welcomed voluntary policies and cautioned against making it mandatory through law.

About Menstrual Leave

- **Leave (paid or unpaid)** intended for women when **experiencing discomfort and health issues** during menstruation like dysmenorrhea, endometriosis, etc.

Benefits of extending Menstrual Leave

- **Low Presenteeism Efficiency:** While workplace focus on productivity cost lost due to absenteeism, in contrast, leave may offer restored capacity and recovery.
- **Aligns with Existing Laws: Occupational Safety, Health and Environment Code, 2020**, mandates "just and humane conditions of work" under **Article 42** of Constitution.
- **De-stigmatize Menstruation:** Advance **gender equality**, reduce social and cultural taboos related to menstrual health.

Key Issues

- **Informal Sector:** Employing around **88% of workforce** has no leave framework.
- **Assumed Structural Hostility of Workplace:** Leave premise may be built on notion that workplaces are **structurally hostile to menstruating bodies** with absence of heating facilities, restrooms, etc.
- **Reality of Job Market:** While affirmative action for females is **constitutionally recognised**, mandatory leave provision would make them unattractive, harming a woman's career.
- **Reinforce Gender Stereotypes: Risk of discrimination** in hiring with already **existing obligations** on employers like maternity benefits and creche facilities, etc.

Existing Menstrual Leave Policies

- **India:** Currently **no law governing** it. However, some states have policy in this regard.
 - **Bihar** (first state to introduce it in 1992); **Kerala** (2023); **Odisha** (2024); and **Karnataka** (2024).
- **Global:** Countries like Indonesia, Japan, South Korea, Ireland and Italy have policies in place.
- **Private Sector:** Zomato, Swiggy, BYJU's, have such policies.

Supplementary Demands of Grants

Lok Sabha approved the second batch of Supplementary Demands for Grants (2025-26) and Finance Minister proposed the Economic Stabilisation Fund (ESF).



Supplementary Demands of Grants

- ESF, with total outlay of Rs one lakh crore would help India respond to recent global crisis, unanticipated supply chain disruptions, etc.

About Supplementary Demand for Grants

- **Meaning:** Required when amount authorised by Parliament through Appropriation Act for a particular service for current financial year is **insufficient**.
- Laid by **President** before both Houses of Parliament and is passed before end of Financial year.
- Mentioned under **Article 115** of Constitution.

Maternity Leave

Supreme Court held that Section 60(4) of the Social Security Code, 2020, which allow maternity benefit to an adoptive mother only if the adopted child is less than 3 months of age, is unconstitutional.



Maternity Leave

- Social Security Code, 2020, merges nine existing social security acts including the Maternity Benefit Act 1961.

Key Observations of Court

- It held that adoptive mothers are entitled to **12 weeks leave, irrespective of child's age**.
- The **right of reproductive autonomy is not confined to the biological act of giving birth. Adoption is an equal exercise of the right to reproductive and decisional autonomy under Article 21 of the Constitution.**
- Supreme Court urged the Union Government to enact laws recognizing paternity leave as a social security benefit.

Child Adoption Regulations in India

Child Adoption Regulations in India

CARA issues nationwide directions to strengthen adoption procedures Central Adoption Resource Authority (CARA) has issued memorandums in accordance with the provisions of Juvenile Justice (Care and Protection of Children) Act (JJ ACT), 2015 (as amended in 2021) and the Adoption Regulations, 2022.



Key Directions

- **Mandatory Strict due process:** Due inquiry, tracing parents, restoration effort within the prescribed timeframe before declaring a child legally free; **2-month reconsideration for surrendered children.**
- **Record management:**
 - All adoption records to be **securely preserved and properly transferred, even if institutions shut down.**
 - Records **cannot be destroyed/made inaccessible** except as per legal provisions.
- **Absolute prohibition on disclosure of child identity:** States must ensure sensitisation and **penal action for violations.**

Child Adoption Regulations in India

- **Nodal Ministry:** Ministry of Women and Child Development
- **Primary legislations:** JJ ACT, 2015 and Hindu Adoption and Maintenance Act, 1956
 - **The Guardians and Wards Act, 1890** governs guardianship, particularly for Muslims and Christians, as their personal laws do not recognise full adoption.
- **Agencies established under JJ ACT:**
 - **National level:** CARA as nodal body for-
 - **In-country (domestic) adoption** and
 - **Inter-country (international) adoption** in accordance with provisions of **Hague Convention on Inter-country Adoption, 1993** (Ratified by India in 2003).
 - **State/Local level:** State Adoption Resource Agencies (SARA); Local Child Welfare Committees; District Child Protection Units (DCPUs)

Postal Ballot

The Election Commission has extended the facility of postal ballot voting to electors above 85 years of age and Persons with Disabilities.



About Postal Ballot

- Allows voters to cast their votes on an **electronically received postal ballot**, avoiding the need to visit polling stations physically.
 - The voter must print it, mark their choice manually, and **return it by physical post**.
- **Legal Framework:** Governed by **Conduct of Election Rules, 1961** and **Representation of People Act, 1951**.
- **Eligibility:** Service voters, special voters, absentee voters (seniors above 85, persons with disabilities, etc.) those under preventive detention, and election duty personnel.
 - **Service Voters** include Members of the Armed Forces, central armed police forces, government servants posted abroad etc.
 - **Special voters** include the President, Vice President, Governors, Cabinet Ministers, etc. and their spouses.

Scheduled Caste Status

Supreme Court held that Scheduled Caste status is limited to Hindus, Sikhs and Buddhists only under the Constitution (SC) Order, 1950.



Supreme Court's Observations

- **Loss of SC Status:** Conversion to any other religion leads to immediate and complete loss of SC status, irrespective of birth.
- **Mutual exclusivity:** A person cannot profess another religion and simultaneously claim SC status.
- **ST distinction:** Scheduled Tribe status not religion-based; depends on continuity of tribal identity and community acceptance.

Corporate Laws (Amendment) bill

The bill aims to amend the Limited Liability Partnership Act, 2008 and the Companies Act, 2013 to promote the ease of doing business and reduce compliance burden.



Need of the bill

- **Enhancing Ease of Doing Business:** By simplifying processes and providing ease of compliance for **One Person Companies, small companies, start-up companies** and producer companies.
- **Attracting Investment:** Updating the regulatory framework to align with evolving financial environments, and facilitate better corporate governance.
- **Streamlining Regulations:** Improving the operational efficiency by removing ambiguities and rationalizing compliance requirements **such as Restructuring and Exit Processes.**

Key provisions of the bill

- **Corporate Social Responsibility (CSR) Relaxations:** To reduce the burden on small companies, proposes doubling the profit threshold that **mandates CSR spending to ₹10 crore.**
- **National Financial Reporting Authority :** NFRA will be granted corporate status and expanded adjudicatory powers to issue directions to auditors in the interest of the investors.
- **Share Buybacks and Fast-Track Mergers:**Specified companies will be permitted to conduct up to two share buybacks in a single year, with a minimum gap of six months.
- **Decriminalisation:** Several minor corporate offences decriminalised and replaced with monetary penalties.
- **Conversion of Trusts:** It establishes a new structural framework that allows specified trusts (such as Alternative Investment Funds registered with SEBI or the IFSCA) to convert directly into LLPs.
- **Limited liability partnerships (LLPs)** allow for a partnership structure in which each partner's liabilities are limited to the amount they put into the business.
- **Audit:** Certain classes of small companies will be **exempted from mandatory audit** requirements with the turnover threshold to be decided later.
- Some of the concerns related to the bill are that it dilutes the existing Corporate Social Responsibility (CSR) provisions, undermine the constitutional balance between the Legislature and the Executive and dilute parliamentary oversight, on this background the bill is referred to JPC for a detailed analysis.

Transgender Persons Amendment Bill, 2026

Introduces significant changes to the Transgender Persons (Protection of Rights) Act, 2019, aimed at providing better legal protection to the community.



Key Features of the Bill

- **Revised Definition:** Defines transgender persons as those with socio-cultural identities (kinner, hijra, aravani, jogta), biological variations, etc.
- **Removes Right to Self Determination:** It omits Section 4(2) of 2019 Act, removing the legal recognition of self-determination.
- **Verification Authority:** Establishes a **medical board** (headed by a Chief Medical Officer or Deputy CMO) to assist authorities in verifying transgender identity.
- **Stronger Penal Provisions:** Introduces graded punishments for offences against transgender persons with penalties up to life imprisonment.
- **National Council for Transgender Persons:** Modifies the composition to ensure representation from State Governments and UTs on a rotational basis.

Key Concerns Associated

- **Loss of Agency:** Shifts the framework from self-identification to state-mandated medical recognition.
- **Exclusion due to narrow Definition:** Unlike the 2019 Act, the Bill effectively exclude trans-men, non-binary people, and gender-queer individuals from legal protection.
- **Violation of Privacy and Dignity:** Medical examinations to prove gender identities is seen as a violation of privacy and human dignity.
- **Medical Gatekeeping:** Potentially promotes a **Pathological approach** with verification by Medical Board, leading to **potential harassment**.
- **Lack of Consultation:** Bill passed without referring to a Standing Committee or consulting the transgender community.

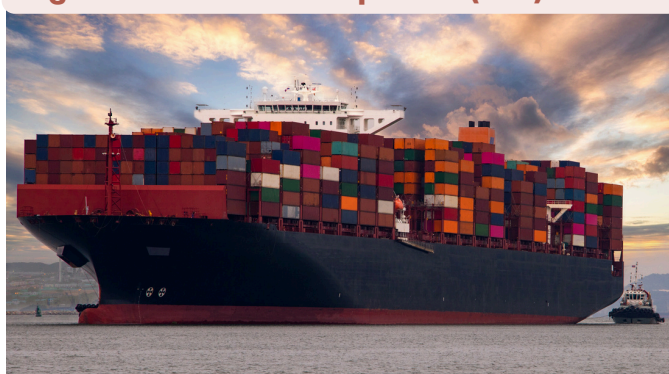
Initiatives for Welfare of Transgenders in India

- **National Legal Services Authority (NALSA) vs Union of India, 2014:** explicitly **recognized** transgender persons as a **third gender**; **affirmed the right of self-identification of gender**
- **National Council for Transgender Persons:** Statutory body to safeguard and promote the rights of transgender persons in India.
- **National Portal for Transgender Persons:** Enables online applications for identity certificates and access to benefits for transgenders.
- **SMILE (Support for Marginalised Individuals for Livelihood and Enterprise) Scheme:** For comprehensive rehabilitation and empowerment of transgender persons; Garima Grehs for shelter.

Eligible Manufacturer Importers (EMI) Scheme

Central Board of Indirect Taxes and Customs (CBIC) introduced deferred Customs Duty payment facility for eligible manufacturer importers under the EMI Scheme.

Eligible Manufacturer Importers (EMI) Scheme



About EMI Scheme

- **Launched by:** CBIC (announced under Union Budget 2026–27).
- **Duration:** 1 April 2026 – 31 March 2028.
- **Mechanism:** Eligible Manufacturer Importers (EMIs) can clear imported goods without paying Customs duty at the time of clearance, **instead paying it monthly as per the Deferred Payment of Import Duty Rules, 2016.**
- **Objective:** Improving cash flow for manufacturers, promoting compliance, boosting domestic manufacturing, and enhancing Ease of Doing Business.

Current Account Deficit

The current account deficit has moderated to 30.1 billion dollars in the period of April-December 2025 from 36.6 billion dollars in the same period a year ago.

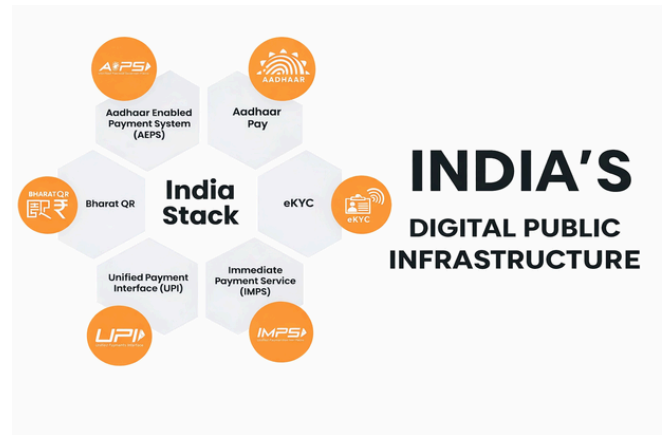


About CAD

- CAD refers to the situation where a country's total imports of goods, services, and transfers exceed its total exports and transfers out.
- **It encompasses:** Goods and services and also income received from investments abroad and unilateral transfers, such as **remittances and foreign aid.**
- CAD is part of the broader balance of payments framework, which tracks all financial transactions between a country and the rest of the world.

India's DPI

By leveraging a "public good" model rather than closed platforms, India has transitioned from a consumer of digital systems to a primary architect of population-scale Digital Public Infrastructure (DPI).



What is DPI?

- UN defines **DPI** as **foundational digital systems** that enable **secure interactions between citizens, businesses, and governments**.
- Effective DPI must be:
 - **Inclusive:** Ensuring access regardless of geography or socio-economic status.
 - **Interoperable:** Allowing different systems to work together seamlessly through open APIs.
 - **Publicly Governed:** Designed to deliver public value and protect the public interest.

Significance of India's DPI

- **Scale and Efficiency:** India's DPI facilitates billions of transactions monthly at a very low cost, significantly reducing leakages in welfare delivery (saving over ₹4.31 lakh crore via the Public Financial Management System).
- **Economic Impact:** UPI now accounts for 49% of global real-time payment transaction volume.
- **Sectoral Depth:** Beyond payments, the "**India Stack**" has expanded into health (CoWIN, eSanjeevani), education (DIKSHA), e-commerce (ONDC), and judicial services (e-Courts).
- **Global Diplomacy:** India is actively exporting this model, having signed MoUs with 24 countries and offering platforms like CoWIN as open-source digital public goods.
 - **UPI Cross-Border:** UPI is live in **8 countries:** UAE, Singapore, Bhutan, Nepal, Sri Lanka, France, Mauritius, and Qatar.
 - **Modular Open-Source Identity Platform (MOSIP):** Developed in India, MOSIP is being explored or adopted by more than 25 nations for sovereign digital identity systems.

Essential Commodities Act, 1955

In the wake of the oil crisis triggered by the Israel-U.S. strikes on Iran, Centre has invoked the Essential Commodities Act, 1955.

THE ESSENTIAL COMMODITIES ACT, 1955



About Essential Commodities Act, 1955

- It empowers the **government to control production, supply, distribution, and trade of essential commodities** to ensure availability at fair prices and prevent hoarding or black marketing in the public interest.
 - List of essential commodities include- **Drugs; Fertilizers; Foodstuffs, including edible oils; Hank yarn; Petroleum and its products; Raw Jute and its textiles; and Various types of Seed (fruits, vegetables, cattle fodder).**
- **2020 Amendment to the Act:** Parliament limited the government's powers to regulate agricultural commodities (cereals, pulses, onions, potato, edible oils) only under **extraordinary situations**, such as War, Famine, Natural calamity, Extraordinary price rise.

Open Market Operations

The RBI announces Open Market Operation (OMO) of government securities (G-Secs) worth ₹1 lakh crore in two tranches.

About Open Market Operation of the RBI

- **Definition:** OMO refers to the **RBI's buying and selling of G-Secs** in the open market to regulate systemic liquidity.
- **Mechanism:** **Purchasing G-Secs injects money into the economy**, promoting growth, while **selling them absorbs excess liquidity** to curb inflation.
- **Objective:** It serves as a **vital macroeconomic tool** to manage inflation, ensure financial stability, and control interest rates.



NITI Aayog's report on Natural Farming

NITI Aayog has published a report titled "Empowering Farmers: Natural Farming Training Toolkit & Best Practices Guide."

About Natural Farming

- It is a chemical-free, livestock-based farming system rooted in ecological principles.
 - This method **integrates** crops, trees, and animals to maximise biodiversity, thereby maintaining environmental harmony.
- It relies on the **natural processes** occurring within and around the **farm**, eliminating the need for external chemical inputs.
 - This distinguishes it from **organic farming**, which permits the use of externally sourced, certified organic fertilizers and bio-pesticides.

Benefits of Natural Farming:

- **Economic Benefits:** Reduces the paid-out cost of cultivation by **at least 5-10%** across major crops, and **up to 20-55%** in several cases.
 - Diversified natural farms can earn **20-40% higher net incomes** compared to monocropped conventional farms.
- **Environmental & Ecological:** Lowers greenhouse gas (GHG) emissions by **55-85%**.
 - It significantly conserves resources, resulting in **50-60% savings in water and electricity**.
- **Soil Health & Resilience:** Increases **Soil Organic Carbon (SOC)** by up to **45%** and boosts beneficial soil microorganisms.
 - Improved soil health leads to **stronger root development**.
- **Health & Nutritional Security:** Protects the health of farmers and consumers by completely avoiding synthetic pesticides and fertilizers.
- **Livestock Integration:** Makes livestock **economically viable** by integrating them directly into the agroecological farming system, where their by-products (dung and urine) are utilized for on-farm inputs.

National-Level Initiatives to Promote Natural Farming

- **Bharatiya Prakritik Krishi Paddhati (BPKP):** Launched as a sub-scheme under **Paramparagat Krishi Vikas Yojana (PKVY)**.
- **National Mission on Natural Farming (NMNF):** A ₹2,481 crore initiative to bring 1 crore farmers under natural farming, while supporting the establishment of 10,000 Bio-Input Resource Centres (BRCs) and strengthening certification processes.
- **Other major government schemes** supporting the **transition from chemical to natural farming** include PM PRANAM, SATAT (Sustainable Alternative Towards Affordable Transportation), and GOBARDHAN (Galvanizing Organic Bio Agro Resources Dhan).

Care Economy in India



PM highlighted the growing importance of care economy in India

About Care Economy

- The care economy includes all essential activities done to maintain and support people and daily life, including **childcare, elderly care, domestic work, etc.**
- It can be both **paid** (domestic workers or nurses) and **unpaid** (such as cooking, washing, child care by women within the household).
 - Care economy largely remains unpaid, hence, **not counted in GDP**, and is **heavily dominated by women (76% of global unpaid care work as per ILO)**.

Need for Formalisation of Care Economy in India

- **Contribution to GDP:** The economic value of women's unpaid domestic and care work is estimated to range between **15% and 17% of India's GDP**.
 - Further, building a professional care ecosystem allows India to **export skilled talent globally**, boosting economic growth through remittances.
- **Demographic Transition:** By 2050, the **proportion of elderly individuals (60+ years)** is projected to double to **around 21% of the population**.
- **Boosting Female Labor Force Participation:** The **unequal burden of care work (81% women vs. 26% men)** keeps women out of the paid workforce.
 - Accessible and affordable care infrastructure is essential to alleviate women's **"time poverty,"** allowing them to participate in **education, skill training, and the formal workforce**.
- **Massive Job Creation Potential:** Direct public investment equivalent to 2% of India's GDP **could generate 11 million jobs**, with nearly 70% of those positions going to women.

Initiatives taken regarding care economy in India

- **Government Schemes:**
 - Central initiatives include the **Saksham Anganwadi and POSHAN 2.0** for early education and nutrition;
 - **Mission Shakti** program, which includes the **Palna scheme** to establish 17,000 new Anganwadi-cum-creches.
 - Programs like the *Atal Vayo Abhyuday Yojana* support the elderly.
 - **Union Budget 2026-27** announced a **strategic initiative to train 1.5 lakh multiskilled caregivers**, aimed at addressing domestic needs and global shortages.
- **Legislative Mandates:** The **Maternity Amendment Benefit Act (2017)** doubled paid maternity leave to 26 weeks and legally required larger employers to provide crèche facilities.
- **Non-Governmental Interventions:** Organizations like **SEWA** have established childcare cooperatives for informal workers, while **Mobile Creches** has pioneered day-care centers at construction sites for migrant workers.

FDI policy for countries sharing land border

Cabinet approves changes in FDI policy for countries sharing land border with India (LBCs)

Key changes Introduced

- **Beneficial Owner (BO):** Clear definition of BO incorporated under the Prevention of Money Laundering Rules, 2005, enabling **ease of doing business**.
- **Eased Criteria for Investment:** Non-controlling Investor from LBCs owning **less than 10%** of the company can invest through the **Automatic Route**.
 - Previously, as per **Press Note 3 (PN3) of 2020**, any investment from LBCs was permitted **only under the Government route**.
- **Expedited 60-Day Timeline:** Proposals in select sectors will be cleared within **60 days**. E.g., **manufacturing capital goods, electronics, Polysilicon and ingot-wafer**, etc.
 - In these cases, majority **ownership and control** must remain with **resident Indian citizens or Indian-owned entities**.

Benefits

- **Ease of Doing Business:** Clear BO rules and timelines **reduce regulatory uncertainty for investors**.
 - This makes it easier for **Indian startups and tech companies** to get funding from global funds.
- **Economic Growth:** Facilitates higher Foreign Direct Investment (FDI) inflows to supplement domestic capital.
- **Supply Chains:** Faster approvals enable quicker Joint Ventures and tech access, strengthening global manufacturing integration.
- **Atmanirbhar Bharat:** Attracts tech-intensive investments in electronics and solar manufacturing, **strengthening domestic manufacturing capabilities**.

Background: PN3 of 2020

- **PN3** was enforced through **Foreign Exchange Management (Non-Debt Instruments) Amendment Rules, 2020**.
- **Aim:** To curb opportunistic takeovers of pandemic-hit Indian companies.
- However, it **adversely affected the investment inflows**.

Diversification of India's Energy Basket

India exploring new energy options amid US-Israel and Iran conflict India has started sourcing its crude oil from 40 countries in a diversification meant to bolster its energy security.



- Roughly 60% of India's crude imports now arrive by alternate corridor.

Need for diversification

- Ongoing US-Israel conflict with Iran leading to the closure of the key shipping route through the **Strait of Hormuz** through which ~40% of India's crude imports pass.
- Clean cooking programmes had led to India's LPG imports surging nearly three-fold in the past decade. (Indian Oil Market Outlook to 2030 by International Energy Agency)
 - India produces only about 40% of its LPG requirement. The rest is imported, overwhelmingly from the same region now at war.
- **Sovereignty Conflict: The US is exerting pressure on India** to reduce Russian oil imports by framing them as requiring "permission" (e.g., granting a temporary 30-day waiver).

Status of India's energy imports

- India imported around **300 million metric tons of crude and petroleum products** in 2024-25.
 - The oil and gas sector alone accounts for nearly 28 % of India's total trade by volume.
- India currently meets about **88 % of its crude oil and 51 % of its gas** needs through imports.
 - India is the **third largest importer**, fourth largest refiner, and fifth largest exporter of petroleum products globally.

Steps taken by India to diversify energy sources

- **India signed a \$3 billion deal** to buy liquefied natural gas from the United Arab Emirates (UAE).
- **India signs its first LPG term deal** with the US to import 2.2 million tonnes of cooking gas.
- **Strategic Petroleum Reserves (SPR):** Indian Strategic Petroleum Reserve Limited (ISPRL), has established SPR facilities at 3 locations (Vishakhapatnam, Mangaluru, and Padur)
- **ONGC Videsh Ltd. and private companies** have undertaken various outreach oil and gas exploration projects in African countries
- **India and Canada** signed Joint Statement on Energy Cooperation at India Energy Week 2026

National Investment and Infrastructure Fund



National Investment and Infrastructure Fund has raised \$750 million for its Second Private Market Fund.

About National Investment and Infrastructure Fund (NIIF, 2015)

- It is a **fund manager** that invests in infrastructure and related sectors in India.
- It is a **collaborative investment platform** for international and Indian investors with a mandate to invest equity capital in domestic infrastructure.
- It is India's first-ever **sovereign wealth fund**.
- **Managed by:** National Investment and Infrastructure Fund Limited (NIIFL).

World Happiness Report 2026

The World Happiness Report 2026 was published with the theme 'Happiness and Social Media', highlighting the "concerning" decline in youth happiness, linking it to usage of social media.



About World Happiness Report 2026

- **Published by:** The Wellbeing Research Centre at the University of Oxford, in partnership with Gallup, the UN Sustainable Development Solutions Network.
- **Top 3 ranked countries:** Finland, Iceland, Denmark.
- **Bottom 3 ranked countries:** Afghanistan, Sierra Leone, Malawi
- **India ranked 116th of 147 countries**, a slight improvement from **118th in 2025 and 126th in 2024**.

Fiscal Health Index (FHI) 2026



NITI Aayog launches Second Annual Edition of Fiscal Health Index (FHI) 2026. FHI holds significance as States account for nearly one-third of India's general government debt and play a key role in delivering key public services, calling for systematic assessment of their finances.

Key Highlights of FHI 2026

- **Top Rankers: Odisha** remains top performer under **Achiever Category**.
 - It is followed **Goa and Jharkhand**, also featuring as Achiever states.
 - These exhibit high own- tax shares, large capital outlay (4–5% of GSDP), low fiscal deficits (below 3% of GSDP), moderate debt levels, etc.
 - **Bottom Rankers: Punjab, West Bengal and Kerala** exhibiting higher non-developmental expenditure and less sustainable fiscal patterns.
- **Inclusion of North-Eastern (NE) and Himalayan States:** This edition includes 10 North-Eastern and Himalayan states, evaluated and ranked separately apart from major states.
 - **Top Rankers: Achievers** (Arunachal Pradesh [ranked highest], Uttarakhand),
 - **Bottom Rankers: Himachal Pradesh and Manipur** owing to weak revenues and persistent fiscal stress.
- **Policy Priorities for Improving State's Fiscal Health:** Enhancing revenue mobilisation, strengthening own-tax capacity; improving capital expenditure; strengthen public financial management systems, monitor off-budget borrowings, etc.

About Fiscal Health Index (FHI), 2026

- **5- Key Pillars: Quality of Expenditure, Revenue Mobilisation, Fiscal Prudence, Debt Index, and Debt Sustainability** categorising major states into categories, namely, **Achiever, Front Runner, Performer, Aspirational**.
 - Uses data from **Comptroller and Auditor General (CAG)**.
- **Sub-Indicators:** Refined for NE states to capture unique characteristics like **difficult terrain, sparse population density, limited own revenue capacity, elevated committed expenditures, greater reliance on Union transfers**.

Regional Rural Banks

Standing Committee on Finance recommends ways to improve functioning of RRBs. The committee highlighted the successful completion of the structural consolidation of Regional Rural Banks (RRBs) and recommended measures to further improve their functioning.



- RRBs have been consolidated from 43 to 28, creating highly viable entities across 11 States.
 - They have been consolidated in a phased manner based on the recommendations of the Dr. Vyas Committee.
- Consolidation is derived from the vision of **One State-One RRB**.

Key Recommendations

- **Mitigate Sectoral Risks in Education Loans:** RRBs should actively mitigate these risks by fully leveraging their inclusion in the **Credit Guarantee Fund Scheme for Education Loans (CGFSEL)**.
 - It will address vulnerabilities such as the **high Gross Non-Performing Assets (GNPA)** of 13.8% in priority sector education loans.
 - Under the **CGFSEL**, Central Government gives a guarantee for the education loans availed by students without any collateral security and third-party guarantee for a maximum loan limit of Rs. 7.5 Lakh.
- **Deploy AI-Driven Technologies:** Deploy AI-driven automated **Early Warning Signals (EWS)** to monitor asset quality and manage credit risk effectively.
- **Pursue Initial Public Offerings (IPOs):** The government shall guide highly profitable RRBs toward **IPOs** to attract market capital and enforce higher standards of corporate governance.

About Regional Rural Banks (RRBs)

- **Genesis:** Established in 1975 on the recommendations of the **Narsimhan Working Group (1975)** under **Regional Rural Banks Act, 1976**.
- **Objectives:** To develop the rural economy by providing credit and other facilities, particularly to small and marginal farmers, agricultural labourers, small entrepreneurs, etc.
- **Shareholding:** Government of India (50%), State Government (15%), and Sponsor Bank (35%)
- **Regulation:** They are Scheduled Commercial Banks (Government Banks) regulated by **RBI** and supervised by the **National Bank for Agriculture and Rural Development (NABARD)**.
- RRBs are required to meet a strict Priority Sector Lending (PSL) target of 75 % of their outstanding advances.

Major Food Safety Reforms



FSSAI notified the Food Safety and Standards (Licensing and Registration of Food Businesses) Amendment Regulations, 2026, to improve ease of doing business.

Major Food Safety Reforms

- It amends the **Food Safety and Standards (Licensing and Registration of Food Businesses) Regulations, 2011**, under the **Food Safety and Standards Act, 2006**, based on the recommendations of a **high-level committee on non-financial regulatory reforms** constituted by the NITI Aayog.

Key provisions of the reforms

- **Perpetual validity:** Introduction of perpetual validity for registrations and licences issued by the **Food Safety and Standards Authority of India (FSSAI)** removing the need for repeated renewals.
- **Increased the turnover threshold:** Businesses with an annual turnover of up to Rs 1.5 crore will only need basic registration, compared to the earlier limit of Rs 12 lakh.
- **Licensing:** Businesses with a turnover of up to Rs 50 crore will fall under **state licensing**, while those above this limit will require **central licensing**.
- **Regulation of Street Vendors:** Vendors registered with **town vending committees** under the **Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014** will be automatically registered with the FSSAI.

Food Safety regulations in India

- **Food Safety and Standards Act, 2006:** Overarching regulation on food safety establishing **FSSAI** (established in 2008) as the primary food safety authority.
 - **Ministry of Health & Family Welfare** is the Administrative Ministry for the implementation of FSSAI.
- **Food Safety and Standards Regulations, 2011:** Contains labelling requirements and standards for packaged food, permitted food additives, microbiological requirements, etc.
- **Various FSSAI Food Safety Standards:** Developed by Scientific Committee and Scientific Panels, the principal arms of FSSAI in the standard development process.
- **Other:** Food Safety Connect mobile app, Eat Right India initiative, etc.

RELIEF under the Export Promotion Mission



RELIEF is aimed at supporting Indian exporters affected by extraordinary freight escalation, heightened insurance premia and war-related export risks arising from disruptions in the Gulf and wider West Asia maritime corridor.

About RELIEF

- **Aim:** Mitigate the immediate impact of logistics disruptions, protect exporter confidence, prevent order cancellations and safeguard employment in export-linked sectors.
- **Nodal and Implementing Agency:** ECGC Ltd. (Formerly Export Credit Guarantee Corporation of India Ltd.), wholly owned by Government of India (Ministry of Commerce & Industry).
 - ECGC was set up in 1957 with the objective of promoting exports from the country by **providing Credit Risk Insurance** for exports.
- **Components:** The following three components cover **consignments destined to countries in the West Asia region** such as UAE, Saudi Arabia, Kuwait, Israel, Qatar, Oman, Bahrain, Iraq, Iran and Yemen, meant either for delivery or for transshipment:
 - Upto **100% risk coverage** to exporters who have already obtained ECGC credit insurance cover,
 - **Encouragement to exporters** planning upcoming consignments during the next three months to **obtain ECGC cover** with Government support for upto 95% risk coverage,
 - **Partial reimbursement (upto 50%)** mechanism for eligible non-ECGC-insured MSME exporters.

About Export Promotion Mission

- **Vision:** Provides a comprehensive, flexible, and digitally driven framework for export promotion.
- **Financial Outlay:** Rs. 25,060 crores.
- **Timeline:** Six years (FY 2025–26 to FY 2030–31).
- **Two sub-schemes:**
 - **Niryat Protsahan (Financial Support):** Improving access to affordable trade finance for diversification into new markets.
 - **Niryat Disha (Non-Financial Support):** Enhancing the market readiness and competitiveness of exporters.
- **Implementing Agency:** Directorate General of Foreign Trade.

Supreme Court on Crop Diversification



Supreme Court on Crop Diversification

In *Kisan Mahapanchayat v. Union of India and Ors*, the policy of importing yellow dal without any duty was challenged.

• The policy potentially lowered domestic prices and discouraged local farmers from growing pulses.

Key Initiatives for Crop Diversification

- Crop Diversification Programme (CDP) under Pradhan Mantri- Rashtriya Krishi Vikas Yojana (PM-RKVY)
- Promotion of pulses under Mission for Aatmanirbharata on Pulses, oilseeds under the National Mission on Edible Oil (NMEO)-Oilseeds and horticultural crops under the Mission for Integrated Development of Horticulture (MIDH).

What is Crop diversification?

- It refers to the addition of **new crops or cropping systems** to agricultural production on a particular farm based on the different returns from value-added crops with complementary marketing opportunities.

Need for Crop Diversification

- **Dominance of Wheat and Paddy:** Policies and practices have resulted in **surplus production of wheat and paddy**, impacting production of **pulses and oilseeds** and increasing **import dependence**.
- **Environmental Sustainability:** The paddy-wheat cycle, especially in **North India**, has led to **depletion of groundwater and soil degradation**.
- **Nutritional security:** **Crop diversification** can ensure increased consumption of **pulses in a balanced diet**.
- **Soil Health:** Pulses are **nitrogen-fixing crops** which improve **soil fertility**, reducing the need for chemical fertilizers.

Challenges

- **Absence of an incentivized MSP:** This results in Pulses being sold in **open market at prices below the MSP**, making pulses farming unattractive for farmers.
- **Mismatch in MSP and Import policies**, affecting financial viability of crop diversification.
- **Others:** Lack of infrastructure, lack of farm resources and awareness, lack of capital and risk taking ability, climatic factors, lack of technical knowledge etc.

Key Suggestions of SC

- **Governance Reforms:**
 - **Strengthen inter-ministerial coordination** to address gaps in agricultural policy.
 - Evolve a **coordinated long-term policy for stability and predictability** for pulses and oilseed farmers.
- **MSP and Price Support:**
 - **MSP for pulses** must be **high enough to cover the specific risks and expenditures** incurred by small-scale farmers, in line with the Swaminathan Committee.
 - Ensuring a **guaranteed platform for farmers to sell pulses** at least at MSP to encourage crop diversification.
 - **Multi-stakeholder discussions**, including **ground-level experts** on key issues like absence of an incentivised MSP for pulses.
- **Import Policy:** Aligning **Import Duty Structure** with the **Domestic MSP** to ensure that imports do not disincentivize local production.

Role of MSMEs in Defense Sector of India



The Defense Minister has highlighted that MSMEs are safeguarding national interests by strengthening defence capabilities at National Defence Industries Conclave 2026.

Role of MSMEs in Defense Sector

- **Cutting-Edge Technologies**
 - **Unmanned Systems & Drones:** *ideaForge* supplies the Indian Army with UAVs for high-altitude transport and border surveillance.
 - In the maritime and ground sectors, *EyeROV* and *Sagar Defence Engineering* build underwater and surface drones.
 - **Cyber Defence & Communications:** Companies like *QNu Labs*, *QpiAI*, and *Signalchip* are delivering solutions ranging from space surveillance to quantum-secure communications.
 - **Aerospace & Surveillance:** Startups like *NewSpace* focus on aerospace technology for stratospheric operations and sensor fusion.
- **Suppliers of Critical Sub-Systems:** MSMEs currently produce vital parts for defence platforms, including missiles, ships, vehicles, and aircraft.
- **Service Providers in MRO:** MSMEs are increasingly fulfilling a growing segment of MRO services required to maintain military aircraft and vehicles.

Steps Taken to promote MSMEs

- **Funding:** The all-time high allocation of Rs 7.85 lakh crore to the Ministry of Defence in the Union Budget 2026-27 provides opportunities of MSMEs.
- **Schemes:** Innovations for Defence Excellence (iDEX) and the Technology Development Fund (TDF).
 - The Department of Defence Production established a dedicated scheme to promote MSMEs, offering financial sponsorships.

Status of MSMEs in Defence Sector of India

- **Status:** about 8,000 MSMEs actively participating in the defence sector.
- **Market Share:** They now hold the largest market share for armed forces procurement after Defence Public Sector Undertakings (DPSUs) and large private industries.

Coal Production in India



India Achieves 1 Billion Tonne Coal Production Milestone Again, Strengthening Energy Security of the Country Under the Coal Logistics Policy and Plan (2024), India aims to achieve 1.5 BT coal production annually by FY2030.

Significance for India

- **Strengthens energy security:** Coal still contributes **~74% of electricity generation**, ensuring reliable base-load power amidst the **vulnerability of other energy sources** such as **natural gas** (West Asia conflicts), **uranium** (restricted supplies), and **renewable energy** (critical minerals dominance of China).
- **Supports core industries:** such as power, steel and cement, which are critical drivers of infrastructure development and economic growth.
- **Import substitution:** Conserving foreign exchange and **improving the current account balance**.

Challenges of reliance on coal for India

- **Global Pushback against Coal:** Developed countries are pushing for **phasedown of coal**, creating pressure on financing and long-term viability.
- **Import Dependence:** Due to **high demand and poor quality (high ash content and low calorific value)** of its domestic coal, India imported about **248.5 million tonnes of coal in 2024–25**.
- **Other Issues:** Persistent challenges such as **land acquisition delays, environmental degradation due to open-cast mining, and rehabilitation concerns**.

Initiatives taken for coal sector in India

- **Commercial Coal Mining & FDI Policy:** 100% (Automatic Route) enhances efficiency and investment through private and foreign participation.
- **Coal Block Auctions & MMDR Reforms:** Ensures transparency and ease of doing business.
- **Mission Coking Coal:** Boosts domestic availability and market-based pricing.
- **Coal Gasification:** Promotes cleaner and efficient utilisation of coal.

Biogas, Alternative Cooking Fuel

Biogas is produced after organic materials (plant and animal products) are broken down by bacteria in an oxygen-free environment, a process called anaerobic digestion.



About Biogas

- **Composition:** Methane (CH₄) 55-60%, Carbon dioxide (CO₂) 35-40%, Trace elements of Ammonia Hydrogen Sulphide (H₂S) and moisture.
- **Main Technologies Involved in Production:**
 - **Biodigesters:** Airtight systems (e.g. containers or tanks) where organic material, diluted in water, is broken down by naturally occurring **microorganisms**.
 - **Landfill gas recovery systems:** Involves decomposition of **municipal solid waste (MSW)** under anaerobic conditions at landfill sites.
 - **Wastewater treatment plants:** These could recover **organic matter**, solids, and nutrients from **sewage sludge**, which could be used as input to produce biogas.

Relevance of Biogas as Alternative Cooking Fuel

- **Diversifying energy mix:** Heavy reliance on imported fuels increases **vulnerability to global shocks**.
- **Reduce Chemical Fertilizer Dependence:** Biogas production also yields **bio-slurry**, a nutrient-rich byproduct, could be used as **organic fertilizer**.
- **Benefits for Rural Areas:** Enhances **rural energy access**, **improves waste management**, and offers **cleaner alternative** to using fossil fuel based resources.

Key Initiatives taken for Biogas promotion in India

- **Galvanizing Organic Bio-Agro Resources Dhan (GOBARdhan) Scheme:** Launched under Swachh Bharat Mission (Grameen) in 2018, aims at **converting bio-waste into biogas**.
- **National Bio Energy Programme (NBP):** comprises sub-schemes related to **Biogas Waste to Energy Programme:** Energy from Urban, Industrial, Agricultural Wastes and Municipal Solid Waste in the form of Biogas/BioCNG, etc.
- Processes like **incineration, gasification, or pyrolysis** are involved in waste to energy technologies.
- **Biogas Programme (2021-22 to 2025-26):** Setting up of **biogas plants** for clean cooking fuel, lighting, etc.

Mutual Credit Guarantee Scheme for MSMEs



Government has modified the Mutual Credit Guarantee Scheme to Support MSME.

About Mutual Credit Guarantee Scheme for MSMEs (2025)

- It is a **Central Sector Scheme**
- **Objective:** Provides **60% credit guarantee** via **National Credit Guarantee Trustee Company Limited (NCGTC)** to Member Lending Institutions (MLIs) for loans **up to ₹100 crore** to MSMEs for machinery/equipment purchase.

Key Modifications

- **Expanded Eligibility:** **Service Sector MSMEs** are now eligible.
- **Equipment Cost Threshold:** **Reduced to 60%** of the total project cost from the previous requirement of **75%**.
- **Guarantee Tenure:** The guarantee cover will **expire after 10 years**.
- **Special provisions** incorporated in the scheme for **exporters** E.g. **Guaranteed Loan Amount** of ₹20 crore etc

Initiatives for promoting Orange Economy'



Three initiatives- **National AI Skilling Initiative; MyWAVES and rollout of Advanced Electronic Programme Guide (EPG) and in-built satellite tuners in television sets** were launched aimed at promoting India's 'Orange Economy'.

- 'Orange Economy, also called '**creative economy**,' refers to sectors driven by **ideas, technology, culture, and intellectual property** rather than traditional manufacturing.

About National AI Skilling Initiative

- **Launched by:** Ministry of Information and Broadcasting, in partnership with Google and YouTube.
- **Aim:** Train 15,000 participants from creative and media sectors.
- **Implemented through:** Indian Institute of Creative Technologies (IICT)

About MyWAVES

- It is a structured platform for user-generated content (UGC) that **enables citizens to create, upload and share content** on **WAVES OTT platform** of Prasar Bharati.

Gas-Based Economy

Natural Gas and Petroleum Products Distribution Order, 2026 notified under the Essential Commodities Act, 1955, aims to facilitate expansion of piped natural gas (PNG) networks, shift towards cleaner fuels, energy security and supporting India's transition to a gas-based economy.



- **Key Reforms:** Time-bound clearances, single harmonized framework, expand City Gas Distribution (CGD) networks etc.

Gas-Based Economy

- **Target:** India aims to increase the share of **Natural gas** is a **fossil fuel** composed mainly of **methane (CH₄)** in its energy mix to 15% by 2030
 - As of **2025**, its share is **only** 6.2%.
 - **Natural gas** is mainly composed of methane (CH₄).
- **Demand Projection:** Natural gas consumption is forecasted to more than double, growing from 52 MTPA in FY25 to 112 MTPA by FY40.
- **Key Significance**
 - **Decarbonization:** Lowers emissions by 15-20% compared to petrol and significantly reduce particulate matter (PM), NO_x, and SO_x emissions.
 - **Energy Security:** Diversifies the energy distribution network, reducing over-reliance on singular fossil fuels like imported crude oil.
 - **Economic Viability:** LNG offers a commercially viable alternative with a clear Total Cost of Ownership (TCO) advantage over diesel for heavy-duty long-haul trucking.

Initiatives Taken of Gas-Based Economy

- **Expanding the National Gas Grid:** Jagdishpur-Haldia/Bokaro-Dhamra pipeline (Eastern India) and the Indradhanush Gas Grid Ltd (IGGL) for the North-East.
- **SATAT Scheme & CBG Mandates:** Launched in 2018 to invite entrepreneurs to produce Compressed Bio Gas (CBG) from waste.
- **Unified Tariff (UFT) Policy:** Introduced by the **Petroleum and Natural Gas Regulatory Board (PNGRB)** to create a consistent, fair, distance-zone-based tariff structure across the country.
- **Other:** Indian Gas Exchange (IGX), etc.

SEBI Code on Conflict of Interest

Recommended by a high-level committee (HLC) chaired by Pratyush Sinha in 2025, the code provides ethical guidelines for the chairman and whole-time members of the SEBI.



- The HLC was setup in backdrop of conflict of interest accusation by Hindenburg Research on the then SEBI Chairperson.

Key Changes in the SEBI Ethics Code

- **Public Disclosures of assets and liabilities** for the Chairperson, Whole-time Members (WTMs), etc.
- Chairperson and WTMs will also be **deemed "insiders"** under SEBI's Insider Trading Regulations and are **prohibited from investing in equity**.
- **Members allowed maximum investment of only 25%** of their portfolio in pooled vehicles like mutual funds, **prohibited from accepting gifts or appearing before SEBI for two years post-retirement**, etc.
- Creating an **Office of Ethics and Compliance** and an independent **Oversight Committee on Ethics and Compliance**.
- Establishing a **secure, anonymous whistleblower system**.

About Securities and Exchange Board of India (SEBI)

- **Genesis:** Initially constituted in 1988, as a non-statutory body; now a statutory body via **SEBI Act, 1992**.
- **Headquarter:** Mumbai; **Regional Offices:** New Delhi, Kolkata, Chennai, Ahmedabad
- **Objectives:** To safeguard investors from fraud, insider trading, and unfair practices.
- **Functions:** Registration and regulation of intermediaries (brokers, mutual funds, merchant bankers, credit rating agencies), and overseeing company takeovers; etc.
- **Powers of SEBI:** **draft rules and regulations** (e.g., Insider Trading Regulations); **impose penalties** in cases of fraud or unethical practices; and **enforce regulations** against violators.

FCRA Bill, 2026

The bill aims to curb misuse of foreign funds and improve transparency and accountability.



Key provisions

- **Creation of a "Designated Authority"**: to take over, manage, or dispose of assets created from foreign contributions if NGOs' registration is cancelled, surrendered, or not renewed.
 - If registration is not restored, Authority may transfer/sell them, with proceeds deposited in the **Consolidated Fund of India**; decisions challengeable only in court.
- **Rationalization of Penalties**: Maximum imprisonment cut from 5 years to 1 year
- **Prior approval required**: No investigation can begin without prior approval of Central Government.
- **New Definitions of "Key Functionary"**: Widened to include directors, partners, trustees, and office bearers responsible for and controlling the organisation's affairs.
- **Others**: Sets timelines for fund use (under prior permission category); regulate handling of assets during suspension, FCRA registration lapses automatically if not renewed in time.

Issues raised against the bill

- **Excessive delegation**: Key aspects (asset handling, timelines, appeals) left to government rules instead of the law.
- **Democratic concerns: Personal Liability** and Reverse Burden of Proof may shrink civil society space, creating uncertainty and fear for NGOs.
- **Article 300A**: Broad executive control over NGO assets by Designated Authority with inadequate safeguards potentially risks violating **right to property**.
- **Article 14**: Prior approval may enable selective enforcement, undermining **equality before law**.

Foreign Contribution Regulation Act (FCRA), 2010

- **Objective**: Regulates utilisation and acceptance of foreign funds by certain individuals or associations or companies to protect national interest.
- The law came into force in **2011**, and has been amended in **2016, 2018 and 2020**.
- **Registration**: NGOs to receive foreign donations must register with the Ministry of Home Affairs. (valid for 5 years)
- **Prohibited**: A candidate for election, editor or publisher of a newspaper, judges, government servants, etc. are prohibited from receiving foreign donations.
- **2020 amendment** to FCRA prohibits domestic transfer of foreign funds, limits administrative expense of organizations to 20%, etc.

Flexible Inflation Targeting (FIT) Framework



In 2016, the Reserve Bank of India Act, 1934 was amended to provide a statutory basis for the implementation of the FIT framework in India.

- The FIT framework was **recommended** by an Expert Committee headed by **Dr. Urjit Patel**.

About FIT Framework

- As per Section 45ZA of the RBI Act, 1934, Central Government shall, in consultation with the Bank, determine the inflation target in terms of the **Consumer Price Index (CPI)**, once in every five years.
- **Target:** Central Government then notified the **inflation target of 4%** with **upper tolerance band of 6%** and **lower tolerance band of 2%** for the period 2016-2021.
 - This target was retained for 2021-2026 and now has been retained for 2026-2031 as well.
- **Target Achievement:** RBI Act provides for a **Monetary Policy Committee (MPC)** to determine the policy rate required to achieve the inflation target.
- **Composition:** It is a **six-member body** comprising:
 - RBI Governor (ex-officio Chairperson)
 - RBI Deputy Governor (in charge of monetary policy)
 - One RBI officer nominated by the Central Board
 - Three external members appointed by the central government with expertise in economics, banking and finance, or monetary policy
- **Policy Failure:** Inflation outside the tolerance band for **three consecutive quarters** is considered a failure of the monetary policy framework.

AI for Agriculture Innovation (AI4AI)

World Economic Forum's (WEF) AI4AI Initiative is driving transformation in agriculture.

About AI4AI

- **Launched In:** 2021.
- **Aim:** Brings together **public and private sector partners** to scale impactful **agri-tech solutions** and accelerate **transformation of global food systems**.
- **Key Focus Areas:** **Inclusivity** (towards small holder farmers, etc.); **Sustainability** (reducing environmental footprint); **Efficiency** (minimising losses and wastage).
- **Used by four Indian states**, namely, **Uttar Pradesh, Maharashtra, Telangana, and Madhya Pradesh** from 2021 to 2024.



U.S. and Israeli airstrikes on Iran



U.S. airstrikes on Iran under “Operation Epic Fury” have resulted in the killing of Iran’s Supreme Leader, Ayatollah Ali Khamenei, sharply escalating tensions in the Middle East.

- The strikes triggered Iranian retaliation through missile and drone attacks, sharply escalating regional tensions.

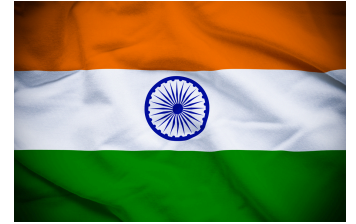
Background of the Current Escalation

- **Post-1979 Hostility:** U.S.–Iran relations have remained strained since the 1979 Islamic Revolution, marked by sanctions, diplomatic breakdowns and ideological rivalry.
- **Nuclear Dispute:** Escalation over Iran’s nuclear programme, especially after the U.S. withdrawal from the **2015 Joint Comprehensive Plan of Action (JCPOA)** and the re-imposition of sanctions.
- **Proxy Warfare & Regional Influence:** Iran’s support to allied groups like Hamas and Hezbollah, etc., in Lebanon, Syria, Iraq and Yemen has expanded its regional footprint, raising security concerns for the U.S. and Israel.

Consequences of Conflict

- **Regional Instability:** Escalation increases the risk of a wider Middle East conflict. E.g., missile and drone strikes against U.S. military bases and allied locations across Gulf countries such as the UAE.
- **Threat to Energy Security:** E.g. Iran has effectively closed the strategic Strait of Hormuz, a critical maritime chokepoint through which 20% of the world's oil passes annually.
- **Global Trade & Connectivity:** Maritime insecurity in the Gulf can increase freight and insurance costs, disrupt key shipping lanes, and disturb global supply chains dependent on West Asian energy flows.
- **Nuclear Escalation Risk:** Conflict raises the risk of strategic miscalculation and potential nuclear escalation.
- **Impact on India:** India imports nearly 85% of its crude oil, with a significant share sourced from West Asia; rising oil prices can widen the current account deficit and fuel inflation.
 - Additionally, around 8–9 million Indians live in the Gulf region, making diaspora safety, remittance stability, and potential evacuation major policy concerns.

Canada PM Visit to India



Visit of the Prime Minister of Canada to India concluded India and Canada relations were formally designated as a “Strategic Partnership” in 2018.

- It was the first **bilateral** visit to India by a Canadian Prime Minister since 2018.

List of outcomes

- **Trade Agreement:** Signed the Terms of Reference (ToR) for the Comprehensive Economic Partnership Agreement (CEPA)
 - Bilateral merchandise trade currently stands at roughly **US\$8–9 billion annually**, significantly below potential relative to economic size.
- **Nuclear Energy:** Finalized a long-term commercial contract with Canada's **Cameco** for the supply of **Uranium Ore Concentrates**.
- **Critical Minerals Cooperation:** Signed MoU to develop secure and resilient critical mineral supply and value chains.
- **Declaration of Intent for a Joint Pulse Protein Centre of Excellence** (Canada is pulse exporter to India)

Announcements

- Set a goal to reach **US\$50 billion in bilateral trade by 2030**.
- Canada announced to join **Global Biofuels Alliance and International Solar Alliance**.
- Formation of an **India-Canada Parliamentary Friendship Group**.
- Establishment of **India-Canada Defence Dialogue**.

Asian Infrastructure Investment Bank

The Union Finance Minister met the President of the AIIB to discuss strengthening the India-AIIB partnership.



About AIIB:

- **Established:** in 2016
- **Objective:** it is a **multilateral development bank** that provides **financing for infrastructure projects** in Asia.
- **Headquarters:** Beijing, China
- **Membership:** Open to all members of the World Bank or Asian Development Bank.
- India is a **founding member** of AIIB.

West Asia crisis Impact on India

The recent turmoil in West Asia could have serious economic repercussions for India, and to assess the same, the government held inter-ministerial deliberations with exporters and logistics players.



Potential impact of the West Asia crisis on India

- **Threat to energy security:** The possible blocking of the Strait of Hormuz is concerning as it accounts for roughly one-fifth, or around 20%, of global oil passes.
 - The Strait of Hormuz carries **85% of India's LPG, 55% of LNG.**
 - India relies on imports for **more than 85 per cent of its crude oil needs**, with a substantial portion coming from West Asia.
- **Impact on trade:** Uncertainty over **56% of India's goods exports**, raising concerns as the region serves a major market for India and also transit corridor linking India to Europe, Africa, etc.
- **Supply chain disruption:** Disruptions to shipping routes are increasing insurance costs and transit times, affecting Gulf transshipment hubs like **Jebel Ali Port (UAE) and Port of Salalah (Oman).**
- **Diaspora:** Indians constitute around **30% of total expatriate workers** in the Gulf Cooperation Council.
- **Remittance:** Around **19% of India's total remittances** come only from the UAE, **7% from Saudi Arabia**, while Kuwait, Oman and Qatar also have significant contributions. (RBI Remittances Survey for 2023-24).
- **Connectivity:** May affect development of International North-South Transport Corridor (INSTC), India-Middle East-Europe Economic Corridor and the Chabahar port operated by India.

Major Straits in Indian Ocean

Iran has vowed to attack any ship trying to pass through the Strait of Hormuz.



About Straits:

- **Meaning:** It is a naturally formed narrow passage of water that links two larger water bodies, such as seas or oceans.
- **Major Straits in Indian Ocean:**
 - **Strait of Hormuz:** Connects Persian Gulf with Gulf of Oman and Arabian Sea.
 - **Bab-el-Mandeb Strait:** Connects the Red Sea with the Gulf of Aden and Indian Ocean.
 - **Malacca Strait:** Connects Andaman Sea (Indian Ocean) and the South China Sea (Pacific Ocean).

India's Export Resilience



India concluded nine FTAs covering 38 countries in last three years boosting exports It has led to zero-duty market access to nearly 70% of global GDP.

- Cumulative exports reached **USD 720.76 billion** in Apr-Jan 2025-26 (+6.15% YoY)

Sector-wise Performance

- **Electronic Goods:** India's **third-largest export category**, India is now world's second-largest mobile phone manufacturer
- **Petroleum Products:** The **seventh-largest global exporter** of refined petroleum.
- **Pharmaceuticals:** Consolidating its **Pharmacy of the World** status, ranks **3rd** largest pharmaceutical producer by **volume** and the **11th** largest by **value**.
- **Automobiles & Textiles:** The **automobile sector** provides direct and indirect employment to over **30 million people** while **textiles** maintain the **6th largest global export share**.
- **Defence:** Expanding to over **100 nations**, achieved **defence exports of ₹23,622 crore in FY25**.

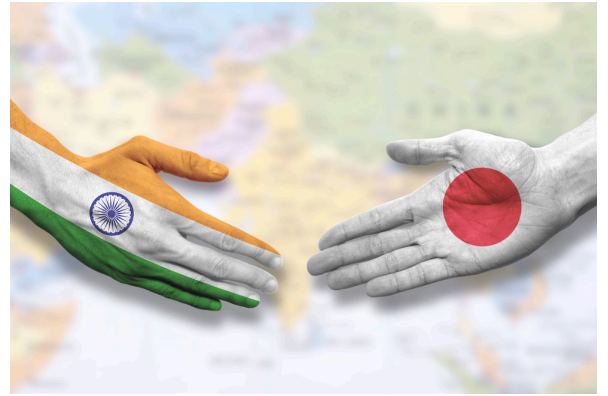
Institutional Support Mechanism

- **Export Promotion Mission (EPM):** Backed by a ₹25,060 crore outlay (FY26-FY31), this mission especially empowers MSMEs and first-time exporters via **Niryat Protsahan and Niryat Disha**.
- **Logistics & Warehousing initiatives** like **FLOW** and **LIFT** subsidize overseas warehousing and offset freight disadvantages in low-export districts.
- The **TRACE** initiative reimburses costs for international testing, inspection, and certification requirements.

Government Schemes & Initiatives

- **PLI Schemes:** in **Auto, Bulk Drugs, and Medical Devices** aimed at reducing critical import dependence.
- **Tech & EV Push:** The India Semiconductor Mission 2.0, the ₹40,000 crore Electronics Component Manufacturing Scheme (ECMS), and the ₹10,900 crore **PM E-DRIVE** scheme **accelerate domestic manufacturing and self-reliance**.

India-Japan Bilateral Swap Arrangement



India has renewed its Bilateral Swap Arrangement BSA (Currency Swap Arrangement) with Japan with effect from 28th February, 2026.

- **The BSA** is a two-way arrangement where both authorities can swap their local currencies in exchange for the US Dollar.
 - **A currency swap** is a broader term defined as an agreement between two central banks to exchange a cash flow in one currency against a cash flow in another currency according to predetermined conditions.
- **The size of the India-Japan BSA:** Remains unchanged at 75 billion US Dollars.
- **Other CSAs by India:** SAARC CSA (2024-27), India-UAE CSA, India-Sri Lanka CSA, etc.

International Atomic Energy Agency

IAEA held an emergency meeting in Vienna to address the fallout of US-Israel military strikes.



About IAEA:

- **Formed:** in 1957.
- **Overview:** It is the world's central intergovernmental forum for scientific and technical cooperation in the nuclear field.
- **Function:** It works for the safe, secure and peaceful uses of nuclear science and technology, contributing to international peace and security and the United Nations' Sustainable Development Goals.
- **Headquarters:** Vienna (Austria).
- **Award:** Nobel Peace Prize in 2005.

Attack on Iranian Ship in Indian Ocean



Sinking of Iran's IRIS Dena by USA exposes Maritime Security Concerns The ship was sunk by a US naval nuclear-powered submarine in Indian Ocean Region (IOR), claimed as the first such attack by America since the World War II.

- Following the distress signal, **Indian Navy** launched Search and Rescue efforts deploying **INS Tarangini** and **INS Ikshak**.

Key Implications of the Action

- **Global Shipping Routes:** IOR is central to **strategic and energy security of India** housing critical global shipping lanes used by all major Asian economies.
- **Legality of the Action:** The incident occurred **40 nautical miles off Sri Lanka's Galle**, bringing attention towards **legal zones** that divide the world's oceans.
 - **United Nations Convention on Law of the Sea (UNCLOS)**, enforced in 1994, along with laying down comprehensive regime of law and order for world's oceans, divides them into **maritime zones** (See Infographic).
- **Violation of Geneva Convention:** For the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea by USA.
- **Expansion of War:** The incident brought regional war confined to air power and missile strikes, to the global maritime domain.

India's Role as Net Security Provided in IOR

- **Upgraded its SAGAR** (Security and Growth for All in the Region) policy to **MAHASAGAR** (Mutual and Holistic Advancement for Security and Growth Across Regions).
- **Institutional Leadership:** India houses **Information Fusion Centre – Indian Ocean Region (IFC-IOR)** and plays a leading role in **Indian Ocean Rim Association**.
- **Regional Security Forums and Naval Cooperation:** E.g. **Colombo Security Initiative**, **International Fleet Review (IFR) 2026**, **Indian Ocean Naval Symposium (IONS) Conclave**, etc.

Shah Gas Field

Operations at UAE's Shah gas field suspended after drone attack.

About Shah Gas Field

- **Location:** UAE (near border with Saudi Arabia).
- **Type:** One of the world's largest **sour gas fields** (natural gas with very high hydrogen sulphide content).
- **Production:** Natural gas and sulphur.

India-Finland Relations



During state visit of President of Finland, India and Finland elevated their bilateral relations to "Strategic Partnership in Digitalization and Sustainability".

Other Key Outcomes

- **Trade:** Aim to **double** bilateral trade to \$2.6 billion by 2030 capitalizing on recently concluded India-EU FTA.
- **Digital Frontier:** Establishment of Joint Task Force on 6G.
- **Startups:** Greater connectivity of startup ecosystems through Indo-Finland Startup Corridor.
- **Circular Economy:** India will **co-host the World Circular Economy Forum 2026**, a Finnish initiative providing circular economy solutions.
- **Human Capital:** A Migration and Mobility Partnership was signed to facilitate the movement of students and professionals.

Three Seas Initiative

Secretary in the Ministry of External Affairs met with Special Envoy for strategic connectivity and national coordinator for the Three Seas Initiative.



About Three Seas Initiative (3SI)

- It is a **regional effort in Europe** to expand cross-border **energy, transportation, digital infrastructure and boost economic development** in the area between the **Adriatic Sea, Baltic Sea, and Black Sea**.
- **Participating Countries:** 13 countries (Austria, Bulgaria, Croatia, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia).
- All 3SI countries are **European Union (EU) members**, and **all except for Austria are NATO allies**.

War of attrition

Escalating tensions between the U.S., Israel and Iran are increasingly being described as a war of attrition.



War of Attrition

- A military strategy aimed at gradually **exhausting the enemy's resources, manpower, and morale** until its capacity to fight collapses.
- **Method:** Involves **sustained attacks and prolonged conflict**, relying on superior resources and endurance.
- **Example:** Prominent during **World War I trench warfare**, where opposing sides sought to outlast each other.

Commission on the Status of Women

COMMISSION *on the*
STATUS OF WOMEN



India to participate in the 70th Session of the Commission on the Status of Women (CSW-70) at the United Nations Headquarters.

About CSW:

- Established in **1946** and functions under the **Economic and Social Council (ECOSOC)**.
- **Function:** It is the principal global **intergovernmental body** dedicated to the promotion of **gender equality and the empowerment of women**.
 - It also monitors implementation of the **Beijing Declaration** and Platform for Action.
- **Membership:** 45 UN Member States **elected for 4 year period** by ECOSOC on the basis of equitable geographical distribution:
 - 13 members from Africa
 - 11 from Asia (**India** is a current member)
 - 9 from Latin America and Caribbean
 - 8 from Western Europe and other States
 - 4 from Eastern Europe

European Free Trade Association

India-European Free Trade Association (EFTA) Trade and Economic Partnership Agreement (TEPA) celebrated its 2nd anniversary.



- The agreement **signed in 2024** offers **binding** commitment of **\$100 bn investment** and 1 million direct jobs in the next 15 years.

About EFTA

- It is the **intergovernmental organisation** of **Iceland, Liechtenstein, Norway and Switzerland**.
- **Established in 1960** through the **Stockholm Convention**
 - **Initial Founding members:** Austria, Denmark, Norway, Portugal, Sweden, Switzerland and the United Kingdom
- **Objective:** Promotion of free trade and economic integration between its members.

Changing Nature of Global Trade

The creation of Multilateral Institutions like the WTO during the era of Globalisation was rooted in the concept of “doux commerce” given by the French Philosopher Montesquieu.



- However, in recent times, this principle has increasingly weakened.

Concept of Doux Commerce

- The idea emphasizes that **trade softens** behaviour, promotes cooperation, and reduces the likelihood of conflict among nations.
- It is believed that **economic interests** would eventually overpower **geopolitical ambitions**, turning **integrated nations** into **responsible stakeholders** rather than **adversaries**.

Why is the idea of Doux Commerce weakening?

- **Interdependence seems as a Strategic Vulnerability:** Heavy dependence on foreign partners can **disrupt supply chains** during conflicts, threatening **national security**.
- **Weaponisation of Trade:** Countries are increasingly using **trade tools like tariffs, sanctions, export controls, and resource restrictions** to pressure rivals and gain geopolitical advantage.
- **Fragmentation of the Global Trade System:** Countries are shifting from **multilateral cooperation** under institutions like WTO to **smaller bilateral and regional trade agreements**.
- **Shift in Supply Chain Strategy:** Countries are increasingly favouring the relocation of supply chains to allied nations (**friend-shoring**) or to geographically closer countries (**near-shoring**).

Gulf Cooperation Council (GCC)

India Backs Bahrain draft submitted on behalf of GCC condemning Iran's missile and drone attacks to be voted in UNSC.



About GCC (Hq: Riyadh, Saudi Arabia)

- **Genesis:** Established on **25 May 1981** through a cooperative agreement among six Gulf countries.
- **Members (6):** United Arab Emirates; Kingdom of Bahrain; Kingdom of Saudi Arabia; Oman; Qatar; Kuwait.
- **Objective:** Promote **coordination, integration and cooperation** among member states to achieve greater regional unity.
- **Institutional Structure:** **Supreme Council** (highest authority; oversees Dispute Settlement Commission); **Ministerial Council**; **Secretariat General**.

International Solar Alliance



0th Foundation Day of International Solar Alliance (ISA) celebrated in New Delhi. On the occasion, ISA announced Green Hydrogen and Storage Start-up Challenge 2026 to identify and support innovative startups working at the forefront of green hydrogen and energy storage solutions.

About ISA

- **Overview:** ISA is a global intergovernmental organization dedicated to advancing solar power adoption for a carbon-neutral future.
- **Launched:** In 2015 by India and France at COP21 Climate Conference in Paris.
- **Headquarters:** Gurugram, India.
- **Four Strategic Pillars:**
 - **Catalytic Finance Hub** to unlock and mobilise investments at scale;
 - **Global Capability Centre and Digitisation** to foster innovation, digital platforms, and capacity building;
 - **Regional and Country-level Engagement** to drive tailored interventions and
 - **Technology Roadmap and Policy** to accelerate the deployment of emerging solar technologies.
- **Mission:** “Towards 1000 Strategy” aiming to **mobilize USD 1,000 billion of investments** in solar energy solutions by 2030 while delivering **energy access to 1,000 million people** using clean energy solutions and resulting in the installation of **1,000 GW of solar energy capacity**.
 - This would help **mitigate global solar emissions** to the tune of 1,000 million tonnes of CO₂, annually.
- **Membership:** 125 Member and Signatory Countries.
- **Governance:** ISA Assembly is the apex decision-making body of ISA, in which each Member Country is represented.

Key Initiatives under ISA

- **Global Solar Facility:** Aims to unlock commercial capital for solar projects in underserved regions.
- **Viability Gap Funding (VGF) Scheme:** Provides for 10% to 35 % of the total solar project cost to be given as a grant for developing solar projects in Least Developed Countries (LDCs) and Small Island Developing States (SIDS).
- **Solar Technology Application Resource Centre (STAR-C):** For creating highly skilled solar workforce.
- **SolarX Startup Challenge:** Fosters entrepreneurship to develop scalable solar solutions across ISA Member Countries.

Security Dilemma

Amid the ongoing Iran-Israel-US war, experts argue that Tehran may emerge from this even more determined to weaponise its nuclear capability to deter future attacks, igniting security dilemma among rival powers.



About Security Dilemma

- **Definition:** It refers to a situation in which actions taken by a state to increase its own security unintentionally threaten other states, prompting them to respond with similar measures.
 - This creates a **vicious cycle of mistrust, arms buildup, and potential conflict.**
- **Origin:** John Herz introduced in his 1950 article 'Idealist Internationalism and the Security Dilemma'. Herbert Butterfield and Robert Jervis have contributed to its development.
 - It falls within the **realist tradition of international relations.**
- **Reason:** It arises because of anarchy in international system, uncertainty of intentions and power of perception.

Fujairah port

UAE's Fujairah port was attacked in the recent Iran- US-Israel war.



About Fujairah port

- A key shipping hub for the **Gulf and wider regions**, the Port of Fujairah is the only multi-purpose maritime facility on the east coast of the United Arab Emirates.
- **Strategically** located just **70 nautical miles** outside the **Strait of Hormuz**, the Port provides an essential economic link between Europe and Asia, opening the markets of the Indian subcontinent and North East Africa to greater local and international trade.

Other ports in news: Jebel Ali Port (UAE), Haifa Port (Israel), Al-Faw Port (Iraq), etc.

Kharg Island

The US struck Kharg island considered as Iran's economic lifeline.

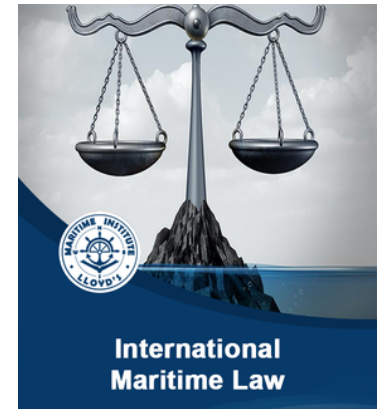
About Kharg Island

- **Location:** Lies in **Persian Gulf**, north west of Strait of Hormuz off Iran coast.
- **Iran's Oil Hub:** Approximately 90% of Iran's oil is exported from the island.



International Maritime Law

Recently a US submarine torpedoed Iranian warship IRIS Dena near Sri Lanka in International Waters, questioning implementation of maritime law.



About Legal Framework concerning International Maritime Law

- **UNCLOS (United Nations Convention on the Law of the Sea):** Governs maritime conduct mainly during peacetime but does not regulate naval warfare during armed conflicts.
- **UN Charter Provisions**
 - **Article 2(4):** Prohibits use of force between states.
 - **Article 51:** Allows use of force in self-defence after an armed attack.
- **UN Security Council Authorisation:** Military action may also occur with UNSC approval **under Chapter VII.**

Crude Oil Benchmarks

West Asia conflict is causing volatile crude oil prices, reflected in international crude oil benchmarks.



Crude Oil Benchmarks

- They are **reference prices** used to value crude oil, helping in pricing physical oil trades, hedging (risk management) and **price discovery in global markets.**
 - Actual oil price = Benchmark price \pm differential (based on quality, location, transport).
- **Major Global Oil Benchmarks**
 - **Brent crude oil**
 - **Origin:** North Sea oil fields
 - **Most widely used global benchmark**
 - **Used for:** Europe, Africa, Middle East exports; **Seaborne** oil trade pricing.
 - **West Texas Intermediate**
 - Benchmark for North America and **inland** benchmark (pipeline-based)
 - **Dubai/Oman crude benchmark**
 - Used mainly for Middle East exports to Asian markets

Anti-Dumping Duty

Directorate General of Trade Remedies (DGTR),
Department of Commerce initiated anti-dumping
investigation concerning imports of Ethyl
Chloroformates (ECF) from China.



- ECF is **colourless, volatile liquid** with **pungent odour** widely used as intermediate in pharmaceutical and agrochemical industries.
- It is an **organic compound**, classified as **hazardous**.

About Anti-Dumping Duty

- **Trade remedy** that an importing country applies after an investigation that **product of exporting country** is causing **material injury to domestic industry**.
 - If a product is exported at **price lower than in home market**, then it is said to be dumped.
- Governed by **Anti-Dumping Agreement** of World Trade Organization (WTO).

Caspian Sea

Israel reportedly struck Iranian targets in the
Caspian Sea for the first time.



About Caspian Sea

- Actually a **saltwater lake**, the Caspian Sea is the **largest inland body of water on Earth**.
- Located in **central Eurasia**, it is bordered by five countries: **Kazakhstan, Turkmenistan, Azerbaijan, Russia, and Iran**.
- It is renowned for its **substantial petroleum and natural gas reserves**.
- **Key rivers draining into Caspian Sea**: Volga, Emba, Ural
- **Biodiversity**: world's largest spawning grounds of **sturgeon**, home to the only marine mammal that lives in the Sea, the **endemic Caspian Seal**.

UN World Water Development Report 2026



Based on the World Water Day 2026 theme 'Water and Gender' the UN-Water released the UN World Water Development Report 2026.

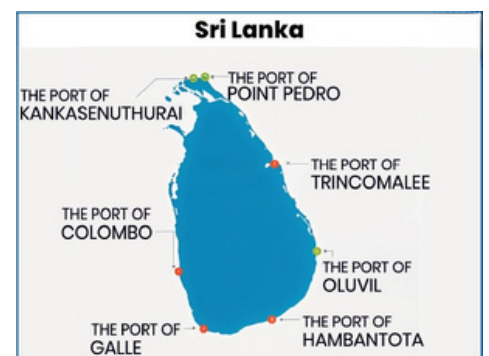
- It emphasizes that universal water security (SDG 6) cannot be achieved without closing the gender gap (SDG 5).

Key highlights

- **Lack of access:** 2.1 billion people still lack access to safely managed drinking water globally.
- **Lack of sanitation:** 3.4 billion people lack access to safely managed sanitation services
- **Gender Gap:** Women and girls are **primary collectors of water**, spending over **250 million hours daily**, limiting their access to **education, income**.
- This exposes them to **physical strain, gender-based violence**, etc. amplified by climate change.
- Women are significantly **under-represented in water governance**.

Trincomalee project

Sri Lanka looks to develop India-backed Trincomalee project amid energy crisis.



- Trincomalee is a **natural harbour** on the **north-eastern coast of Sri Lanka**; it is the **second best natural harbour in the world**.

About Trincomalee project

- In **2022**, India–Sri Lanka signed an agreement for joint development of **Trincomalee Oil Tank Farm**.
 - The Oil Farm was built in **1930s** by **British** to supply fuel to the Navy **during Second World War**.
- **Objective:** Enhance petroleum storage capacity and energy security.
- **Strategic and Commercial Role:** Located near key Indian Ocean sea lanes; Aligns with India's MAHASAGAR and Neighbourhood First policy

GlobE Network



India hosted the 12th Steering Committee Meeting of Global Operational Network of Anti-Corruption Law Enforcement Authorities (GlobE Network).

About GlobE Network

- **Genesis:** Established in 2021, based on **Riyadh Initiative** launched during Saudi Arabia's G20 Presidency (2020).
- **About:** A global platform of **specialised anti-corruption law enforcement authorities**.
- **Aim:** Transnational cooperation world-wide to detect, investigate and prosecute corruption cases.
- **Membership:** Open to anti-corruption law enforcement authorities of all UN Member States and States parties to UN Convention against Corruption (UNCAC). India's **Central Bureau of Investigation** and **Directorate of Enforcement** are its members.
- **Supported by:** UN Office on Drugs and Crime (UNODC), which provides its secretariat.
- **GlobE Secure Communications Platform (SCP):** Provides practical support to investigators and prosecutors for swift, secure exchange of information etc.

IIED Food Security Index



**IIED Food
Security Index**

International Institute for Environment and Development (IIED) published the IIED Food Security Index.

- The Index evaluates how climate change impacts the "four pillars" of food security: **availability, accessibility, utilization, and sustainability**.

Key Highlights

- **India** ranks among the **most vulnerable** large economies to **food insecurity** as **global temperatures rise**.
- India is positioned as **most concerning** in the **Food security Index**.
- India's food security score could fall sharply under 1.5°C and 2°C (15% drop) warming scenarios, pushing it closer to the "**critically insecure**" category.
- Rising temperatures could **widen the gap** between **richer and poorer** countries' ability to secure food.

Waste Dumping to Developing Countries



Thailand seizes tonnes of illegal e-waste from US
The waste was misdeclared as scrap metal to bypass regulations. This incident clearly highlights the global issue of waste dumping from developed to developing countries.

- Disposal of waste in developing countries is rooted in the **NIMBY (Not In My Backyard) syndrome**.

NIMBY syndrome

- It refers to a situation where people support development but oppose disposal of waste in their country.
- This prompted some operators to export hazardous waste to Eastern Europe and developing countries, where environmental awareness was lower and regulatory and enforcement mechanisms were weak.
- Developed countries often dispose of waste in developing nations like **India** under the guise of recycling.

Issues/Concerns related to Waste Dumping

- **Ethical Concerns:** Violates the principle of **Environmental Justice**. The pollution burden is shifted to poorer countries that contribute less to global waste.
 - Also, it violates **Extended Producer Responsibility (EPR) framework**.
- **Promotion of waste colonialism:** Refer to the practice of rich nations dumping waste in Africa, Latin America and Asia through waste trade under the pretence of “recycling”.

Global Initiatives to Prevent Waste Dumping

- **UNwaste:** It aims to address waste trafficking between the EU and Southeast Asia and to promote partnerships that support the transition to a circular economy (CE), in line with relevant EU and ASEAN policy frameworks.
- It is led by the United Nations Office on Drugs and Crime (UNODC) in cooperation with the United Nations Environment Programme.
- **Basel Convention:** An international treaty adopted in 1989 to regulate the **transboundary movement of hazardous waste** and ensure its environmentally sound disposal.
 - The **Basel Ban Amendment** banned the export of hazardous waste from developed to developing countries.

Total Lunar Eclipse and Blood Moon



India is set to witness a total lunar eclipse, confirms the Indian Meteorological Department.

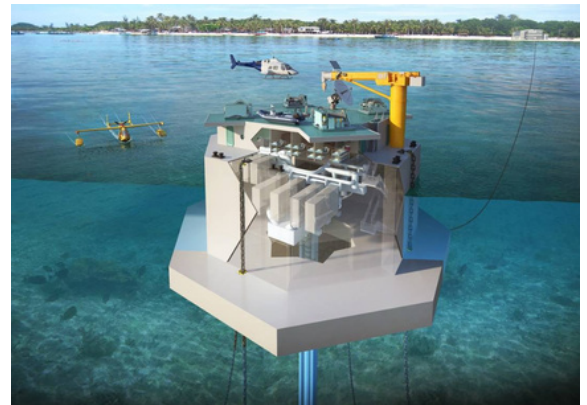
About Total Lunar Eclipse:

- It occurs when the Moon passes entirely through Earth's umbra (darkest part of its shadow), with the Earth, Sun, and Moon perfectly aligned, completely blocking direct sunlight.

About Blood Moon:

- **Meaning:** A Blood Moon refers to the reddish appearance of the Moon.
- **Occurs:** During total lunar eclipses,
- **Cause of Formation:** This happens because of the Earth's atmosphere.

Ocean Thermal Energy Conversion



The Government of India is establishing a first-of-its-kind integrated plant based on Ocean Thermal Energy Conversion (OTEC) in Kavaratti Island, Lakshadweep.

About Ocean Thermal Energy Conversion (OTEC)

- Renewable energy technology that generates electricity using the **temperature difference** between warm surface water and cold deep ocean water.
- **Condition:** Requires about 20°C temperature difference; viable mainly in tropical oceans (30°N–30°S).
- **Working:** Cold deep-sea water and warm surface water run a heat engine to produce electricity.
- **Use:** Provides round-the-clock power and desalination for island regions.

National Dam Safety Authority



National Dam Safety Authority
Ministry of Jal Shakti, Government of India

Recently new initiatives developed by NDSA were launched.

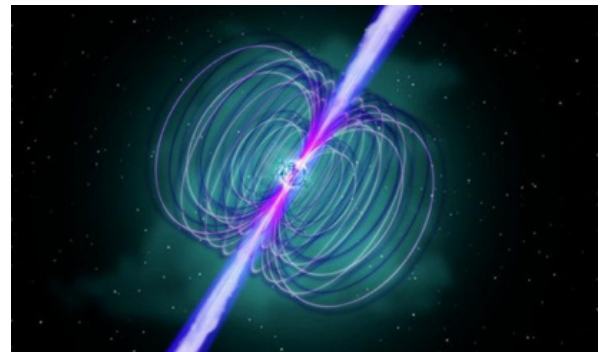
- **NETRA (NDSA Engine for Tracking and Review using AI)**, an AI-enabled platform for quick access to Dam safety related information.
 - It is also integrated with **DHARMA**, the national repository of dam safety data.
- **Rashtriya Bandh Suraksha Darpan** by Centre for Development of Advanced Computing was launched
 - It is a visualisation and interpretation platform for potential dam break scenarios for risk assessment.

About NDSA

- **Statutory body** under Dam Safety Act, 2021.
- **Ministry:** Ministry of Jal Shakti
- **Functions**
 - **oversee safety and maintenance of specified dams** across the country.
 - **Resolving issues** between the State Dam Safety Organisations
 - **Maintaining a National level database** of dams etc.

Supernova and Magnetar

Astrophysicists have identified magnetar as the cause behind an extremely bright supernova.



About Supernova

- Supernovae are **bright violent explosions** that take place during the **final stages of the death of a supermassive star**.

About Magnetar

- **Magnetars** are **neutron stars** having **very high magnetic fields** which are billions of times stronger than the strongest magnets we have on Earth.
 - **Neutron Stars:** These are the dead remnants of stars, composed entirely of neutrons.
 - They're so **heavy and dense** that the electrons and protons which make up atoms have been crushed together into neutrons.

Nor'wester

Nor'wester induced strong winds and heavy rain wreaks havoc in Odisha.

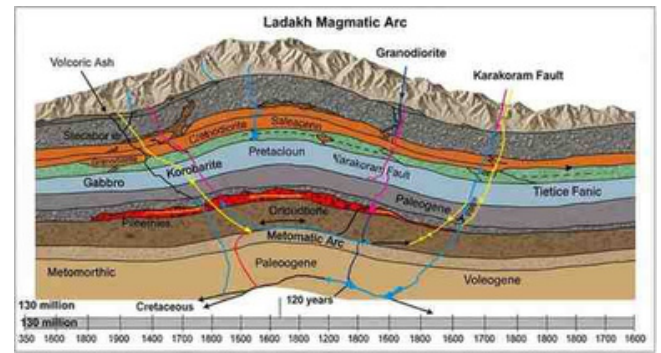


About Nor'wester

- Nor'westers are severe thunderstorms that **originate over Eastern and north Eastern parts of India** during pre-monsoon season (March to May).
- The Nor'westers produce heavy showers, lightning, thunder, hailstorms, dust storms, squalls, down bursts and sometimes even tornadoes.
- In Bengal, it is also called '**Kalbaisakhi**', a calamity of the month of Baisakh, while in Assam, it is known as **Bordoisila or Bardoli Chheerha**.
- These showers are **useful for tea, jute, and rice cultivation**.

Ladakh Magmatic Arc

Scientists have decoded the evolution of the Ladakh Magmatic Arc in the North-West Himalaya.

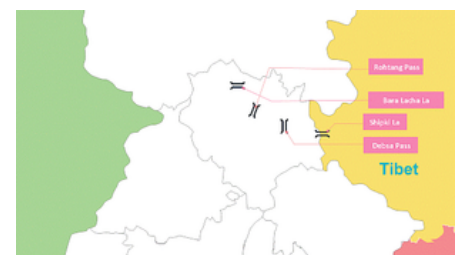


About Ladakh Magmatic Arc (LMA)

- It is a belt of **igneous rocks and a long-extinct volcanic system** located in the Trans-Himalaya that acts as a 130-million-year record of plate tectonics.
 - It documents the entire process of subduction, maturation and the eventual collision between the **Indian and Eurasian plates**.
- Present Ladakh region lay above **Neo-Tethys Ocean** and below that ocean, giant slabs of Earth's crust slowly plunged into the mantle in a process known as subduction leading to the formation of the LMA.

Shipki La Pass

Trade between India and China will commence from June 1 through the Shipki La Pass in Himachal Pradesh.



- Trade through the pass was disrupted following the Doklam standoff and the COVID-19 pandemic.
- In 2025, India and China agreed to re-open border trade through the three designated trading points, namely **Lipulekh Pass (Uttarakhand), Shipki-La Pass and Nathu-La Pass (Sikkim)**.
 - **Lipulekh Pass** is located close to the tri-junction of India, China (Tibet) and Nepal.

About Shipki La Pass

- It connects **India and Tibet (China)**.
- It was earlier known as Pema La, or Shared Pass.
- The **Sutlej River** enters India at Shipki La.

Deglaciation in Himalayas



Cryo-hydrological Hazard linked to Deglaciation in Himalayas: ISRO A recent study by ISRO scientists revealed that Dharali village (Uttarakhand) 2025 flash flood was not triggered by a cloudburst or a Glacial Lake Outburst Flood (GLOF), but by the sudden collapse of an exposed ice patch.

- This ice patch was located within the **nivation zone** of the Srikanta Glacier.
- **Nivation:** It is the **progressive erosion** of the ground beneath and around a snowbank, primarily driven by alternate freeze-thaw cycles.

Causes of increase in Himalayan disasters

- **Climate Change:** Accelerated **glacier thinning, altered precipitation, and rising temperatures** reduce the insulating seasonal snow cover that typically protects underlying ice.
- **Thermal & Mechanical Destabilization:** Exposed ice responds rapidly to temperature fluctuations and minor perturbations, making it highly **susceptible to melting, fragmentation, and sudden gravitational collapse.**

Effects of Deglaciation in Himalayas

- **Cascading Cryo-Hydrological Hazards:** The sudden release of fragmented ice, meltwater, and entrained debris can create **short-duration, high-velocity surges.**
- **Topographic Amplification:** In steep, confined Himalayan valleys, **even a small volume of collapsed ice** translates into massive gravitational potential energy, **producing highly erosive, debris-laden floods.**
- **Socio-Economic Destruction:** These multiphase hazards lead to **massive channel widening, structural destruction of settlements, and threats to religious transit hubs, lowland communities, and hydropower security.**

Key Definitions

- **Ice Patch:** It is a perennial mass of surface snow, firn, and basal ice that **lacks internal deformation or active flow**, distinguishing it from a true glacier.
 - The appearance of exposed ice patches in satellite imagery acts as **an early-warning signal** of heightened flash flood risk.

Molecular Clouds



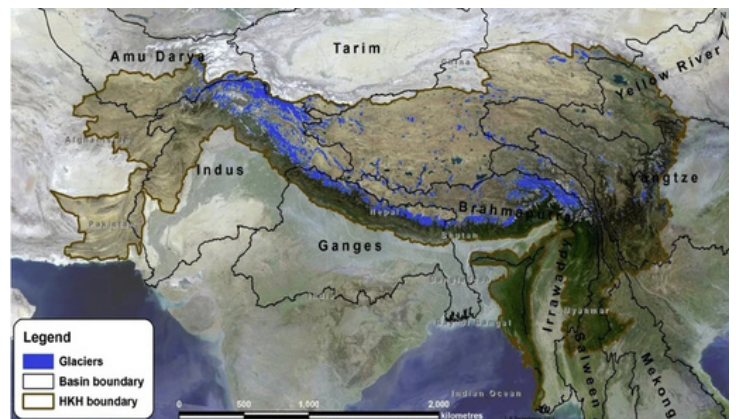
Scientists tracing small molecular clouds located near the Milky Way disc have seen the skeleton of the magnetic field surrounding them for the first time to better understand its role in star formation.

About Molecular Clouds:

- It is an interstellar cloud of gas and dust in which molecules can form, the most common of which is hydrogen (H_2).
- It is generally thought that our Sun formed in a similar molecular cloud by collapse of the cloud triggered by nearby supernova.
- **Key features:** It is opaque because of its internal dust grains. The form of such dark clouds is very irregular: they have no clearly defined outer boundaries.

Changing dynamics of glaciers in HKH

Report titled 'Changing dynamics of glaciers in the Hindu Kush Himalayan region from 1990 to 2020' was released by the International Centre for Integrated Mountain Development (ICIMOD).



About ICIMOD

- It is an intergovernmental knowledge and learning centre leading the global effort to protect Hindu Kush Himalaya (HKH).
- India is a regional member country.

Key Findings

- **Glacier number loss Doubled:** Increased from -5.4% between 1990 and 2020 to -10% between 2010 and 2020.
- **Consistent retreat:** 12% reduction in total glacier area and a 9% decline in estimated ice reserves.

Indus River basin lost 6% of its glacier area, while the Ganges and the Brahmaputra River basins experienced reductions of 21% and 16%, respectively.

Minor Planet Centre (MPC)



Minor Planet Centre (MPC) has announced the discovery of 15 new moons, 4 around Jupiter and 11 around Saturn.

About Minor Planet Centre (MPC)

- It is the **single worldwide repository** for observations related to **minor planets, comets and outer irregular natural satellites of the major planets**.
- **Functions:** Maintaining the master files of observations and orbits, keeping track of the discoverer of each object and announcing discoveries to the world
- It operates at the **Smithsonian Astrophysical Observatory**, under the **International Astronomical Union (IAU)**.
- **Sponsored by:** NASA's Near-Earth Object Observations program.

Cauvery River

An IIT Gandhinagar study predicts a roughly 3.5% decrease in the Cauvery's water flow between the years 2026 and 2050.



About Cauvery River

- **Origin:** Talakaveri in Coorg (Karnataka) in **Brahmagiri** Range of hills in the Western ghats.
- **Drainage Area:** extends over states of Tamil Nadu, Karnataka, Kerala and Union Territory of Puducherry (2.7% of the total geographical area of the country).
- **Total Length:** ~ 800 kms.
- **Left Bank Tributaries:** Harangi, Hemavati, Shimsha and Arkavati.
- **Right bank Tributaries:** Lakshmantirtha, Kabbani, Suvarnavati, Bhavani, Noyil and Amaravati.
- **Major Waterfalls:** Shivanasamudra Falls, Hogenakkal Falls.
- **Major Dams:** Krishnarajasagar in Karnataka, Mettur Dam in Tamil Nadu.

Gitchak nakana

Researchers have found a newblind aquifer-dwelling fish 'Gitchak nakana' in Northeast India.



About Gitchak nakana

- **Type:** Blind aquifer-dwelling (phreatobitic) freshwater loach.
- **Unique Feature:** Complete absence of skull roof; brain covered only by skin.
- **Adaptation:** Troglomorphic traits (eyeless), adapted to underground habitat.

Marsupials

A marsupial species believed to be extinct for nearly 6,000 years has been rediscovered alive in the forests of New Guinea.



About Marsupials

- These are mammals that give birth to underdeveloped young, which continue development in a pouch (marsupium).
- **Classification:** Over 250 species belong to the infraclass Metatheria (Marsupialia).
- **Distribution:** Predominantly found in Australia and New Guinea; E.g., kangaroo, koala.
- **Reproduction:** Short gestation period followed by **pouch-based nurturing**.
- **Evolutionary significance:** Represent an ancient lineage of mammals distinct from placental mammals.

Phenology

Unusually warm late winter and early spring in India are altering the behaviour of plants and animals, according to scientists.



About Phenology

- **Phenology** refers to the **timing of seasonal biological events** such as flowering, breeding and migration.
 - Climate change is altering these cycles, causing **ecological mismatches** between species and their environments.
- **Examples:**
 - In **Kashmir Himalayan region**, plants are flowering **20–25 days earlier than usual**, causing mismatch with pollinators like bees, threatening their long-term population decline.
 - **Habitat stress** and disruption of **breeding cycles** of Birds and Reptiles. E.g **Hawk eagles**
 - **Amphibian Frogs** taking **refuge in caves to escape heat**, as their **permeable skin** makes them highly sensitive to environmental conditions.

Convention on Biological Diversity



Convention on
Biological Diversity

India submits Seventh National Report to the Convention on Biological Diversity The report prepared by the Ministry of Environment, Forest and Climate is India's official submission under the CBD.

- Parties are required, under **Article 26 of the CBD**, to submit national reports to the Conference of the Parties (COP) on measures taken towards the implementation of CBD.

Key Highlights of Report

- It is first full assessment of progress toward 23 targets under the **Kunming–Montreal Global Biodiversity Framework (KMGBF)**.
- **Policy alignment: National Biodiversity Strategy and Action Plan** is now aligned with KMGBF (23 National Biodiversity Targets (NBTs) and 142 indicators).
- **Implementation of Targets:** Report identifies all NBTs being on track.
 - India moved to 9th position in terms of total forest area with forest and tree cover at **25.17% of geographical area**.
 - Area under **land restoration stands at 24.1 Mha** (out of pledged restoration of 26 Mha of degraded land by 2030).
 - India ranked **5th among the top global carbon sinks**, with its forests removing 150 Mt of CO₂ per year during 2021-2025.
 - Share of **non-fossil fuel-based energy resources** in India's cumulative installed electric power capacity is **51.93%** (surpassing NDC goal of 50%).

About CBD (Secretariat: Montreal, Canada)

- **Legally binding** treaty adopted at the UN's Conference on Environment and Development, Earth Summit, Rio de Janeiro, Brazil in **1992**.
 - It **entered into force in 1993** and operates under **United Nations Environment Programme**.
- **Governing Body:** Conference of Parties (CoP).
- **Objectives:** Conservation of biological diversity; sustainable use of its components; and fair and equitable sharing of the benefits
- **Protocols:** Cartagena protocol on biosafety and Nagoya protocol on access and benefit sharing.

Extension of Jal Jeevan Mission

Union Cabinet approves extension of Jal Jeevan Mission (JJM) up to 2028 There is a shift in approach under JJM from purely infrastructure creation to focusing on sustainable service delivery, institutional accountability, and local governance.



Other Key Changes in JJM

- **Sujalam Bharat:** A uniform national digital framework for precise digital mapping of the entire drinking water supply system from the source to the tap.
- **Jal Arpan:** Involvement of **Gram Panchayats** and **Village Water and Sanitation Committees** in the commissioning and formal handover of schemes.
- **Jal Utsav Initiative:** Promotion of annual community led events to reinforce collective responsibility for water security.

About Jal Jeevan Mission (JJM)

- **Launched:** In 2019.
- **Objective:** To provide a Functional Household Tap Connection (FHTC) delivering 55 litres per capita per day to every rural household.

Achievements of JJM

- **Massive Physical Expansion:** Tap water coverage has jumped from a baseline of 17% rural households in 2019 to 81.61% households.
- **Women Empowerment:** It has freed 9 crore women from the drudgery of fetching water and saved 5.5 crore hours of labour daily.
- **Health and Survival:** Improved access to water helps prevent up to 400,000 diarrheal deaths and saves 14 million Disability Adjusted Life Years (DALYs).
- **Economic Impact:** JJM has generated ~60 lakh direct and ~2 crore indirect person-years of employment.

Great Indian Bustard



Project GIB enters fourth year of its captive breeding programme with tally of 70 birds in captivity.

About GIB

- **Habitat:** Agro-grassland bird endemic to **Indian Subcontinent**, mainly **Rajasthan** with some population in Gujarat, Maharashtra, Karnataka, and Andhra Pradesh.
- **Characteristics:** Omnivorous; belongs to the family **Otididae**, exhibits **sexual dimorphism**; male possesses a conspicuous gular pouch that plays a vital role in **mating display**.
 - Known locally as **Godawan in Rajasthan**,
- **Threat:** Hunting, collision with high tension wires, etc.
- **Protection Status**
 - **IUCN:** Critically Endangered
 - **Wildlife (Protection) Act, 1972:** Schedule I
 - **CITES:** Appendix I
 - Under Species recovery programme of **Integrated Development of Wildlife Habitats**.

National Chambal Sanctuary



National Chambal Sanctuary

Supreme Court Takes Suo Motu Cognisance to Protect Gharials in National Chambal Sanctuary.

About National Chambal Sanctuary

- **Location & Area:** ~5,400 sq km riverine stretch along the **Chambal River** across **Madhya Pradesh, Rajasthan and Uttar Pradesh**.
 - It is the **first and only tri-state riverine protected area in India**.
- **Established:** **1979** for conservation of riverine biodiversity.
- **Significance:** Major habitat of the **critically endangered Gharial**.
 - Chambal remains one of **India's least-polluted perennial rivers** supporting rich aquatic biodiversity.
- **Other Fauna:** Ganges River Dolphin, Red-crowned Roofed Turtle, other freshwater turtles and migratory birds.

Megamalai Wildlife Sanctuary

Researchers discovered 9 new species at Megamalai Wildlife Sanctuary.

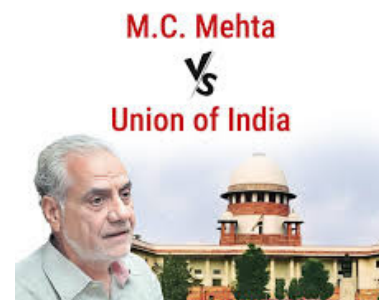


About Megamalai Wildlife Sanctuary

- **Location:** Megamalai, Theni district, Tamil Nadu.
 - Situated near **Tamil Nadu–Kerala border**, acts as a **buffer zone for Periyar Tiger Reserve**.
 - Also, an **Eco-sensitive Zone**
 - **Share boundaries with:** Srivilliputhur Grizzled Squirrel Sanctuary (TN) and Periyar Tiger Reserve (Kerala).
 - **Part of:** Srivilliputhur Megamalai Tiger Reserve (SMTR)
- **Rivers:** Vaigai, Suruliyaru, Shanmuganathi.
- **Fauna:** Elephants, tigers, leopards, Nilgiri tahr, sambar deer, Nilgiri langur, lion-tailed macaque, common langur, sloth bear, lying squirrel, etc.

MC Mehta Case

The Supreme Court formally disposed of the landmark 1985 PIL filed by environmentalist MC Mehta.



- In MC Mehta case, Supreme Court recognized the **principle of Absolute Liability** and applied **Doctrine of Public Trust** to natural resources.
 - It also led to **lead free petrol** in India, coastal management plans in states, shifting of stone crushers out of Delhi etc.

Other Landmark Environmental Cases

- **T.N. Godavarman Thirumulpad Case (1995)** - Expanded the definition of forest land to include all areas recorded as forests in government records, regardless of ownership.
- **Vellore Citizens Welfare Forum Case (1996)** - Recognized the Precautionary Principle and the Polluter Pays Principle as essential features of Indian environmental law.
- **S.P. Muthuraman Case (2025)**- SC declared post-facto or retrospective environmental clearances illegal.

Horticulture Crops

Ministry of Agriculture & Farmers Welfare released Final 2024-25 horticulture estimates.



Key Highlights

- Total horticulture crop **area grew** from 290.86 lakh hectares in 2023-24 to 301.36 lakh hectares in 2024-25.
- Total crop production climbed from 3547.44 lakh tonnes to 3707.38 lakh tonnes.
- **2024-25 fruit production** rose 4.13% (46.71 lakh tonnes) to 1176.49 lakh tonnes from 1129.78 lakh tonnes in 2023-24, driven by gains in banana, mango, mandarin, papaya, guava, watermelon and jackfruit.
- **Vegetable production** is estimated up 5.11% (105.89 lakh tonnes) to 2177.97 lakh tonnes from 2072.08 lakh tonnes, with rises in onion, potato, green chilli, cauliflower, cabbage, brinjal, etc.

Coconut



The Union Budget 2026-27 announced 'Coconut Promotion Scheme' aimed at rejuvenating old, non-productive coconut gardens and expanding cultivation along coastal areas.

About Coconut Production

- India is the world's largest producer of coconuts contributing to nearly 30% of the Global coconut production.
- **Ideal Conditions for Coconut Cultivation**
 - **Latitude:** 23 degrees North and South of Equator in tropical and hot climate.
 - **Altitude:** Grows from sea level up to 600 m.
 - **Temperature:** should be from 20 ° to 32°C.
 - **Rainfall:** 1000–2500 mm annually.
 - **Soil Type:** Well-drained sandy loam, laterite, coastal alluvial soils.
- **Major Producers:** Kerala, Tamil Nadu, Karnataka.

Section 12 of the Wild Life (Protection) Act, 1972



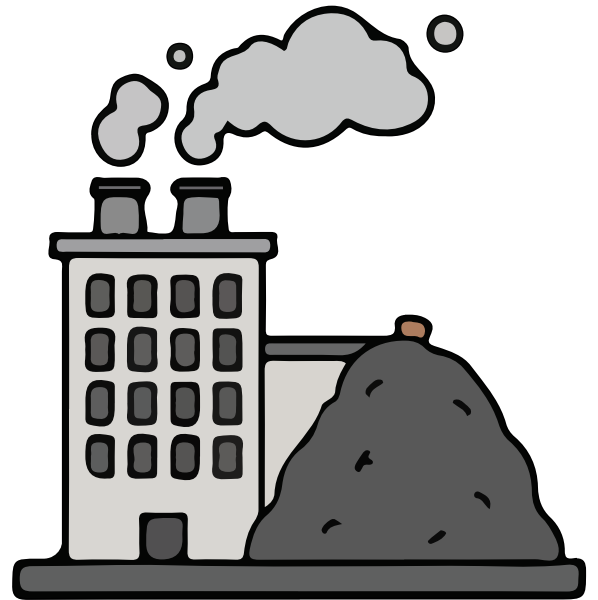
Maharashtra assembly passed the Wildlife Protection (Maharashtra Amendment) Bill, 2026 for better management of human-wildlife conflict.

- The proposed amendment will empower the state government to capture and relocate leopards from one area to another.
 - The bill will come into effect only after receiving the President's assent, as it proposes changes to a central law.
- The amendment pertains to provisions under **Section 12** of the **Wildlife Protection Act, 1972**

About Section 12 of WPA, 1972

- It empowers the **Chief Wildlife Warden** to grant permits allowing the hunting of wild animals for specific purposes such as **scientific research, scientific management**, etc.
 - Under scientific management, capture and relocation of any wild animal to an alternative suitable habitat can be allowed with prior permission from the central government.

Biocover and Landfills Methane Emissions



Reducing Methane Emissions from Landfills: The potential of biocover systems' Report Released This report released by the Climate and Clean Air Coalition (CCAC) highlights how simple, relatively affordable and locally adaptable solutions like methane mitigation oxidation covers (such as biocovers) can effectively mitigate landfill methane emissions while improving air quality and public health.

- A biocover is a microbial system which uses **naturally occurring bacteria to oxidize methane** into less harmful carbon dioxide and water.
 - It is capable of **mitigating up to 50% of the methane generation** over a 100-year period.

Landfill Emissions

- Landfills are one of the world's largest and fastest-growing sources of methane, responsible for about **11% of all human-made emissions**.
 - Methane is a **powerful greenhouse gas**, and has high global warming potential (28–84 times higher than carbon dioxide).
- **Long-Term Emissions:** Biodegradation of organic waste can typically take 2-3 decades, with methane emissions continuing for up to **100 years at landfill sites**.
- **Risks:** Methane becomes explosive at concentrations of 4.4%–16.5% in air which can trigger prolonged fire.
 - Landfill gas contains toxic trace components such as **VOCs, hydrogen sulphide, and solvents** that causes environmental and human health issues.

Climate and Clean Air Coalition (CCAC)

- It is a **voluntary partnership** of over 200 governments (including India), intergovernmental organizations, businesses, scientific institutions and civil society organizations.
- **Secretariat:** Hosted by UN Environment Programme in **Paris, France**.
- **Aim:** To protect the climate and improving air quality by reducing the short-lived super pollutants: methane, black carbon, tropospheric ozone and HFCs.
- **Targets:** Achieve **global reductions of at least 40% of methane by 2030 compared to 2010; up to 70% of black carbon by 2030 relative to 2010; and 99.5% of HFCs by 2050 compared to 2010.**

Mangroves in India



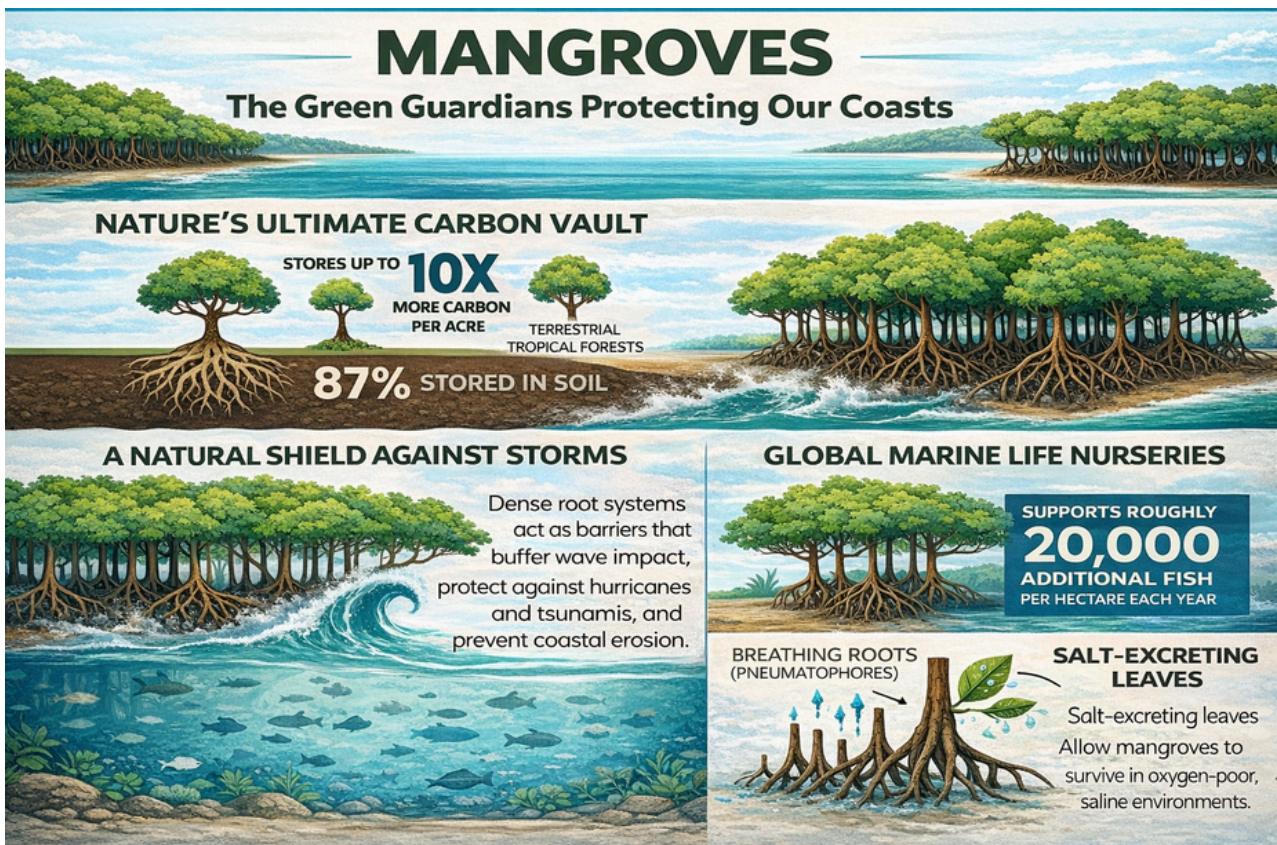
SC refuses to interfere with Bombay HC order on mangrove trees The CJI said while environment protection norms should be vigorously enforced, the HC had also spoken about the need for ensuring the delicate balance with development.

About Mangroves

- **Definition:** Mangroves are salt-tolerant plant communities that thrive in tropical and subtropical intertidal zones where land meets the sea.
- **Types:** Four main types: **Red, Black, White, and Buttonwood.**
- **Distribution in India:** Mangrove forests span a total of 4,991.68 sq. km across nine states and four Union Territories.
 - **West Bengal holds the largest share** at 42.45%, followed by Gujarat and Andaman & Nicobar Islands.
- **Threats:** Unchecked destruction for infrastructure and development.
 - Climate change and rising CO2 levels are causing "**hypercapnic hypoxia**" which is a state of depleted oxygen in mangrove waters that severely threatens their function as fish nurseries.

Way Forward

- Protecting these ecosystems requires a delicate balance between sustainable development and conservation.
- Strict enforcement of **Coastal Regulation Zone (CRZ) laws**, and mandated compensatory afforestation.
- Promotion of community-driven restoration programs like the **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI)** initiative are vital steps.



Water Governance in India

PM Highlighted the need for Water Conservation on World Water Day This underscores the critical role of water governance for sustainable use of water.



Need of efficient water governance

- **Manage Scarcity:** India supports ~18% of world's population but has only 4% of freshwater resources.
- **Economic Growth:** Inefficient water management could lead to a 6% loss in GDP by 2050. (NITI Aayog)
- **Climate resilience: Integrated Water Resource Management (IWRM)** is needed to maintain the eco-hydrological cycle and sustain biodiversity.

Challenges in water governance

- **Fragmented Governance: In silos** water management (e.g. Groundwater, surface water, irrigation, and domestic use) by institutions like CGWB, CWC, etc.
- **Over-Exploitation:** Severe depletion of groundwater aquifers due to subsidized power and lack of regulation.
- **Lack of Equitable Access:** Lack of access to sustainable water sources hinders development of vulnerable sections. E.g. Women and sanitation needs
- **Climate change:** impacts the hydrological cycle.

Way Forward

- **Integrated Water Resource Management:** Treating river basins as units and linking land, water, and ecosystems.
 - Promoting **Behavioural change, Community participation, Circular Water Economy and Gender-Responsive Water Governance.**
- o E.g **Jan Bhagidari-** empower Gram Panchayats and village committees to manage local water systems.

Water Governance in India

- **Constitutional status:** Water is a **State subject** under the 7th schedule while Regulation and development of **Inter-State rivers** is a **Union Subject**.
- o **Article 262:** Parliament can provide for adjudication inter-state river disputes.
- **Legal framework:**
- o **Inter-State River Water Disputes (ISRWD) Act,1956** (constitution of Tribunals)
- o **River Boards Act, 1956** (establishment of River Boards for regulating inter-state rivers)
- o **Water (Prevention and Control of Pollution) Act, 1974**

Initiatives for Ground water governance

- **Ministry of Jal Shakti (2019):** For Integrated approach and holistic planning.
- **Jal Jeevan Mission (JJM):** Functional household tap connections with Jal Samitis requiring at least 50% participation from local women.
- **Namami Gange:** An integrated conservation mission focused on river rejuvenation
- **Atal Bhujal Yojna:** Groundwater management through **community participation**

National Productivity Council



NPC signed an Agreement with Ministry of Environment, Forest and Climate Change to act as Environment Audit Designated Agency (EADA) under Environment Audit Rules, 2025.

- It entrusts NPC with overall management of environmental audit framework, including development of eligibility criteria, registration of auditors, performance monitoring, etc.

About NPC

- **Genesis:** 1958 to undertake research in productivity.
- **Ministry:** Autonomous organization under Department for Promotion of Industry & Internal Trade, Ministry of Commerce and Industry.

NPC is a constituent of Tokyo-based Asian Productivity Organisation (APO), an Inter-Governmental Body of which India is a founding member.

National Biodiversity Authority



NBA has constituted an Expert Committee on Invasive Alien Species under the Biological Diversity Act, 2002, as directed by NGT.

About NBA (HQ: Chennai)

- **Statutory body:** under Biological Diversity Act, 2002, it was formed in 2003.
- **Ministry:** Ministry of Environment, Forest and Climate Change
- **Composition:** o Chairperson appointed by central govt. o 10 ex-officio members and 5 non official experts.
- **Functions:** facilitative, regulatory and advisory function to achieve Conservation, sustainable use of biological resource and fair equitable sharing of benefits of use.
 - o Anyone seeking any kind of IPR based on an Indian biological resource must obtain prior approval from NBA

India's First Semiconductor Plant

PM Inaugurates India's First Semiconductor Plant at Sanand, Gujarat Developed by Micron, a US based private firm, the Plant will facilitate Assembly, Testing, Marking and Packaging (ATMP) of semiconductor chips.



Significance for India

- **Supply Chain Self-Reliance:** Reduces heavy import dependence on chips (esp. from China) and enhances resilience against global disruptions (such as trade wars).
- **Strategic Importance:** Critical for defence, telecom (5G/6G), AI, space and digital infrastructure, strengthening national security.
- **Economic & Export Growth:** Boosts electronics manufacturing and attracts FDI, helping India capture a substantial share of **\$1 trillion semiconductor by 2030**.
- **Other:** generates high-skilled employment and supports *Atmanirbhar Bharat*.

Initiatives taken in India for Semiconductor Industry

- **India Semiconductor Mission (ISM) 1.0 & 2.0:** Umbrella programme to build a comprehensive semiconductor ecosystem.
 - **ISM 2.0 (Budget 2026–27)** focuses on strengthening equipment, materials, full-stack Indian IP design, supply chain resilience and skill development.
- **Semiconductor & Display Fabs Schemes:** Fiscal support for establishing semiconductor wafer fabrication and display manufacturing units in India.
- **Compound Semiconductors & ATMP/OSAT Scheme:** Support for chip assembly, testing, packaging and specialised semiconductor segments to strengthen the domestic value chain.
- **Design Linked Incentive (DLI) Scheme:** Incentives for startups and MSMEs to promote indigenous chip design and innovation.
- **Global Partnerships & Skilling Initiatives:** India–U.S. iCET collaboration, Semicon India platform, and programmes like C2S and VLSI curriculum reforms to build skilled manpower and attract investment.

Challenges to Overcome

- **High Investment & Long Gestation:** Semiconductor manufacturing is **capital-intensive** with long payback periods and high operational risks.
- **Technology Dependence:** Limited access to **advanced fabrication technology** and reliance on foreign firms for **critical equipment and intellectual property**.
- **Skilling & Ecosystem Gaps:** Shortage of specialised workforce and underdeveloped domestic supply chain for materials, components and supporting infrastructure.

Ethics of AI in Modern Warfare

The United States President has designated AI company Anthropic as a 'supply chain risk' and ordered the Department of Defense (Pentagon) to terminate all military contracts with the firm.



- Anthropic has refused to allow use of its AI model Claude for unethical mass surveillance or autonomous weapons by the Pentagon, citing concerns over national defense applications.

Role of AI in Modern Warfare and Defense

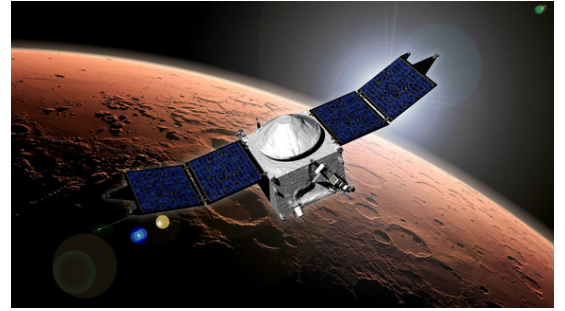
- **Autonomous weapons systems:** AI-enabled drones and robotic systems are capable of identifying and attacking targets with minimal human intervention.
 - **Precision strikes:** AI-powered targeting improves accuracy and reduces operational time.
- **Intelligence, Surveillance, and Reconnaissance (ISR):** AI processes large volumes of battlefield, satellites, drones, and sensors data to predict enemy movement and optimize strategy.
 - E.g. the US military took assistance of Claude AI to attack Iran.
- **Electronic warfare and cyber operations:** AI helps detect signals, disrupt enemy communications, and defend networks.
- **Logistics support:** AI assists in supply chain management, predictive maintenance, and battlefield decision-making.

Key Ethical Concerns

- **Autonomous lethal decision-making:** AI systems may make life-and-death decisions without meaningful human control, violating the **Right to Life**.
 - **Accountability Gap:** It becomes difficult to determine responsibility when AI-driven systems cause harm.
- **Misuse of Personal Data:** AI-powered facial recognition and data analytics can enable large-scale monitoring of populations by governments, manipulating the public choices and violate their privacy and civil liberties.
- **AI arms race:** Competition among states could accelerate the development of increasingly autonomous and lethal systems.

MAVEN Mission

Researcher detected a lightning-like “whistler” radio signal, providing the first evidence of such electromagnetic activity in the Martian ionosphere with the help of data obtained by NASA’s Mars Atmosphere and Volatile Evolution (MAVEN).

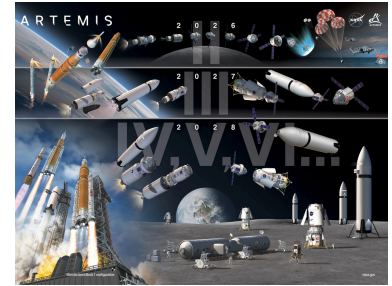


About MAVEN Mission

- It is the **first mission devoted to understanding the Martian upper atmosphere.**
- It will determine **how much of the Martian atmosphere has been lost over time.**
- It will do so by **measuring the current rate of escape to space** and gathering enough information about the relevant processes to **allow extrapolation backward in time.**

Artemis mission

NASA is restructuring the Artemis lunar program due to repeated delays.



About Artemis

- Under it, NASA will send astronauts on increasingly difficult missions to explore more of the Moon for scientific discovery, economic benefits, and to build on our foundation for the first **crewed missions to Mars.**
- **Artemis I** was launched in 2022.
- Artemis II, III and IV are planned to be launched.

Gypsum

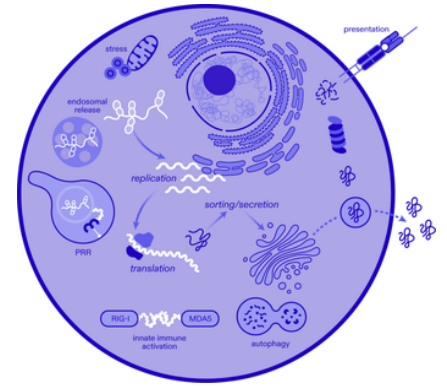
Scientists are studying gypsum deposits in the Salar de Pajonales (Atacama Desert, Chile) because the region closely resembles the harsh environmental conditions of Mars



Gypsum

- **Nature:** Non-metallic mineral – Calcium sulphate dihydrate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$).
- **Formation:** Formed mainly in arid and semi-arid regions through evaporation of seawater or saline lakes.
- **Properties:** Very soft mineral, Crystals are vitreous (glass-like) to pearly
- **Application:** Used in cement (setting regulator), manufacture of Plaster of Paris, fertiliser production, and as a soil conditioner for reclamation of alkaline/sodic soils.
- In India, Rajasthan holds the largest share of gypsum reserves

Self-replicating RNA



Researchers claims to have developed a self-replicating RNA molecule named of QT45.

- **Self-replicating RNA** has ability to copy both itself and the information encoded in its complementary strand, i.e. its template.
- It supports the “**RNA World Hypothesis**”, which proposes that early life was based on self-replicating RNA before DNA and proteins evolved.

About Ribonucleic Acid (RNA)

- RNA is a nucleic acid present in all living.
 - Unlike DNA, RNA is most often single-stranded.
 - Each sugar molecule is linked to one of four nitrogenous bases: **adenine (A)**, **uracil (U)**, **cytosine (C)**, or **guanine (G)**.
- Major types of RNA exist in cells: messenger RNA (mRNA), ribosomal RNA (rRNA), transfer RNA (tRNA), microRNA

Nucleic Acid Test

The Supreme Court has decided to look into whether blood banks should compulsorily conduct the Nucleic Acid Test (NAT) for identification of diseases.



About NAT

- **NAT** is a highly sensitive molecular technique that detects the genetic material for viruses such as HIV, Hepatitis in the blood.
- It is based on amplification of targeted regions of **viral ribonucleic acid or deoxyribonucleic acid (DNA)**.
- It can be an alternative to commonly used **Enzyme-Linked Immunosorbent Assay (ELISA) test**.

Minuteman III

The United States conducted a test launch of Minuteman III.

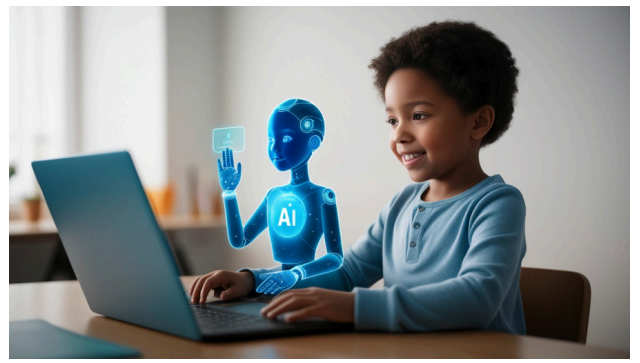
About Minuteman III

- It is an **intercontinental ballistic missile** part of the US' nuclear triad.
- It is the **nuclear missile land-based weapon** under the control of US Air Force Global Strike Command.
- It has **three solid-propellant rocket motors** with speed of approximately **Mach 23** at burnout.
- **Range:** 6,000-plus miles (5,218 nautical miles).



AI for Education

Artificial Intelligence (AI), key to solving Educational Challenges in India



Importance of AI in Education

- **For Students:** Offers **personalised Learning Paths and Remediation** assessing a student's level in real-time to adjust difficulty, format, or pace of content. E.g., MindCraft, platform for rural students offers tailored content.
- **For Teachers:** NCERT study (2024) revealed that **teachers who receive pre-service with AI-assisted lesson planning tools** were better able to identify student needs.
- **Assessments:** AI-enabled assessments can prove to be **formative and ongoing**, offering students real-time feedback and providing teachers with actionable insights.
- **Governance and System Monitoring:** Through **predictive analytics and AI-powered dashboards**.
- **Inclusive Education:** Support learners with disabilities via assistive AI tools, offering multilingual/dialectical support.

Key Initiatives taken for Extending AI to Education

- **National Education Policy (NEP) 2020:** Acknowledges role of **AI, big data and machine learning** in driving transformation.
- **School Education:** Integration of AI into school curricula through CBSE and NCERT, under NEP 2020 and National Curriculum Framework (NCF) 2023.
- **AI-Courses for Students and Educators:** **DIKSHA** (Digital Infrastructure for Knowledge Sharing), **SOAR (Skilling for AI Readiness)** to build AI awareness and skills for classes 6–12 students and educators; **SWAYAM (Study Webs of Active Learning for Young Aspiring Minds)** platform offers free AI courses from IITs and IISc, etc.
- **Higher Education:** **University Grants Commission (UGC), 2022** undergraduate curriculum includes AI, 3D machining, big data analysis, machine learning, etc.
- **Research and Development:** National Research Foundation, One Nation One Subscription, etc.

Gravity Bombs

US said that it would deploy precision gravity bombs in war against Iran.

About Gravity Bombs

- It historically known as a “free-fall” bomb.
- It is an **unpowered munition** that, unlike cruise missiles, does not have an internal engine.
- Once released, its trajectory is **dictated entirely by gravity**, aerodynamics and the speed and altitude of the dropping aircraft.
- It can have both **conventional as well as nuclear explosives**.



Advanced Light Helicopter Mk-III and Shtil missile

Ministry of Defence signed contracts for acquisition of six ALH Mk-III (Maritime Role) for Indian Coast Guard and Vertical Launch - Shtil missiles for Indian Navy.

About ALH Mk-III (MR)

- **Twin-engine helicopters** with state-of-the-art features superior to the **currently operated airborne platforms**.
- Capable of undertaking a wide spectrum of **maritime security missions** from **shore-based airfields as well as from ships at sea**.
- **Signed with Hindustan Aeronautics Limited, Bengaluru** under Buy (Indian-Indigenously Designed Developed and Manufactured) category.

About Shtil missile

- **Surface-to-Air** missile, providing rapid-reaction, all-weather engagement capability and improved survivability in contested maritime environments.
- **Contract signed** with JSC Rosoboronexport, Russian Federation.

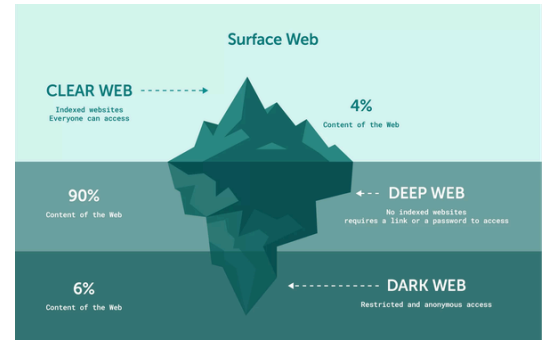


Darknet

NCB has busted a pan-India darknet drug network called 'Team Kalki'.

About Darknet (Deep web)

- The internet depends on **three types of web**: the surface, the deep, and the dark web.
- Surface web is a part that we can access through a normal browser.
- **Deep web and the dark web**, are not accessible through search engines like Google.
 - It operates on **overlay networks**, requiring **specific software or configurations** to access. Ex.Tor (The Onion Router).
- Only about **10% of the internet is the surface web**, while the remaining **90% of it constitutes the deep web and the dark web**.



THAAD

The U.S.-developed Terminal High Altitude Area Defense (THAAD) missile defence system is being operationally used during the ongoing U.S.–Israel conflict with Iran.



About THAAD

- Advanced missile defence system designed to **intercept short, medium and intermediate-range ballistic missiles**.
- **Developer: Lockheed Martin Corporation (USA)**.
- **Technology:** Uses “**hit-to-kill**” **kinetic interception**, destroying targets inside and outside the Earth’s atmosphere.
- **Components:** A THAAD battery includes ~95 personnel, truck-mounted launchers, interceptor missiles, AN/TPY-2 radar and fire-control system.

Note: India operates the **S-400 Triumph** air defence missile system procured from Russia.

Dark Oxygen

Scientists have reported the discovery of “dark oxygen” production nearly 4,000 m deep in the Pacific Ocean.

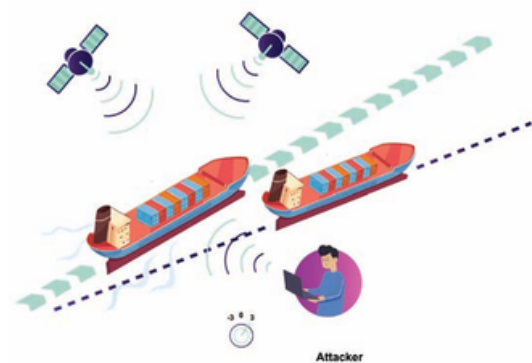


About Dark Oxygen

- Oxygen produced in the deep ocean without sunlight, unlike photosynthesis-based oxygen production.
- **Source:** Linked to **electrochemical reactions involving polymetallic nodules** on the ocean floor.
- **Significance:** Challenges the belief that **photosynthesis is the only major natural source of oxygen** on Earth.

GPS Jamming/ spoofing

Global Positioning System (GPS) jamming and GPS spoofing are being allegedly used in the US-Iran war.



- These are two deliberate types of **cyberattacks** on **Global Navigation Satellite Systems (GNSS)** signals to disrupt or trick the navigation systems of vehicles.

About GPS Jamming

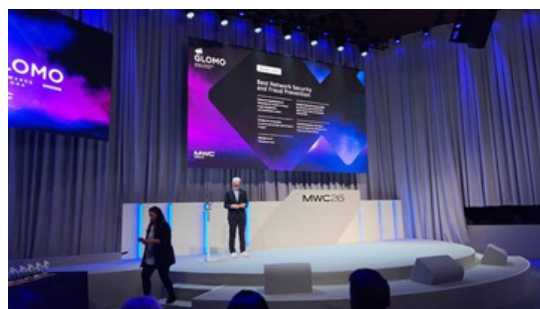
- It involves the use of a device called a **jammer to disrupts and blocks authentic GNSS signals**.
- It overpowers weaker signals with 'noise' on the same frequency.

About GPS Spoofing

- It refers to the practice of **manipulating or tricking a GPS receiver by broadcasting false GPS signals**.
- It misleads the GPS receiver into believing it is located somewhere it is not, resulting in the device **providing inaccurate location data**.

FraudPro

The Centre for Development of Telematics (C-DOT), has received global recognition at the Mobile World Congress 2026 for "FraudPro".

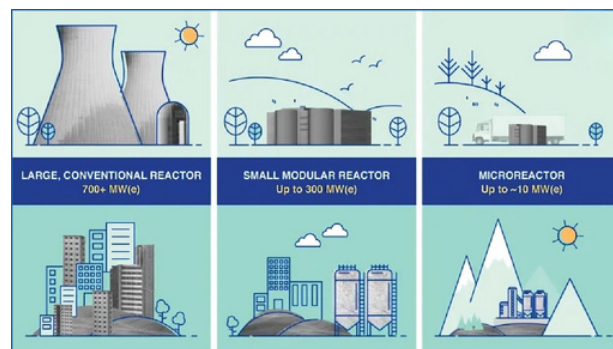


About FraudPro

- **Overview:** It is an **advanced Artificial Intelligence (AI) and Machine Learning (ML) driven fraud detection platform** aimed at securing telecom ecosystems against identity-based fraud.
- **Applications:** Enables telecom operators to **proactively detect fraudulent mobile connections** in the network and prevent misuse of telecom resources.
- It is deployed by the Department of Telecommunication in India as part of **Digital Intelligence Platform and Sancharsaathi portal**.

Small Modular Reactors

India developing three different types of Small Modular Reactors (SMRs): Union Minister. SMRs are miniaturised versions of large nuclear power plants, producing nuclear energy up to 300 MWe per module, about one-third of traditional nuclear power reactors (IAEA).



SMRs of India

- While SMRs are an entirely new concept, **Bharat Small Reactors (BSRs)** are based on **India's existing PHWR (Pressurized Heavy Water Reactor) technology**.
- **3 SMRs models being developed by Department of Atomic Energy (DAE):**
 - **Bharat Small Modular Reactor (BSMR) 200MWe:** Indigenously developed by **Bhabha Atomic Research Centre (BARC)** (unit of DAE and **Nuclear Power Corporation of India Limited (NPCIL)**).
 - Based on **PWR technology**; slated to utilise **Slightly Enriched Uranium (SEU)** as fuel to be constructed at **Tarapur Atomic Power station site, Maharashtra**.
 - **SMR-55MWe:** Also modelled on PWR technology, featuring a block-type, highly modular design to be constructed at **Tarapur**.
 - **Up to 5 MWth High temperature gas cooled reactor:** Meant for **hydrogen generation** to be constructed at **BARC Vizag, Andhra Pradesh**.

Significance of SMRs for India

- **Modular:** Can be manufactured in **factory parts and assembled at designated site** reducing gestation period and **bringing economies of scale**.
- **Scalability:** Deployed **Incrementally** as per increased energy demand.
- **Safer:** **Inherent and passive safety features** entailing no human intervention to shut down the system.
- **Others:** **Low carbon energy; cater to higher energy demand** in the wake of rise Artificial Intelligence, etc.

India's Nuclear Push

- **Nuclear Energy Mission:** Announced in **Union Budget 2025–26** focused on research and development (R&D) of **SMRs** aiming to develop **at least five indigenously designed and operational SMRs by 2033**.
- **Nuclear Energy Target: 100 GW nuclear power capacity by 2047.**
- **SHANTI Act, 2025:** Consolidating and modernising India's nuclear legal framework.

National Geospatial Policy 2022



Union Minister highlighted that National Geospatial Policy 2022 democratized access to geospatial data. National Geospatial Policy 2022 aims to position India as a global leader in the geospatial sector.

About Geospatial Technology

- Geospatial technology is an umbrella term for a **range of modern tools and systems used to collect datasets** to map the Earth's surface, understand societies and conduct spatial analysis.
 - The word "geospatial" refers to anything relating to a location, specifically data and information regarding features on the Earth's surface.
- **Types of Geospatial Technologies:** Remote Sensing, Geographic Information Systems (GIS), LiDAR (Light Detection and Ranging), Global Positioning System (GPS), Internet Mapping Technologies (Google Earth, Microsoft Virtual Earth).

National Geospatial Policy 2022

- **Key Goals:**
 - Establish high-resolution topographical survey and mapping system and develop a highly accurate **Digital Elevation Model (DEM)** for entire country by 2030.
 - Establish a **Geospatial Knowledge Infrastructure (GKI)** underpinned by an Integrated Data and Information Framework by 2030.
 - Generate **high-resolution bathymetric geospatial data** for inland waters and deep-sea topography and develop a **National Digital Twin for major urban centers** by 2035.
- **Institutional Framework:** Establishes the Geospatial Data Promotion and Development Committee (GDPDC) as the apex national body to drive the ecosystem.
- **Data Infrastructure:** Mandates the creation of the National Geospatial Data Registry (NGDR) and a Unified Geospatial Interface (UGI) to ensure seamless data access and sharing.

Government Initiatives for Geospatial Technologies

- **National Geospatial Mission (NGM):** Launched in 2025-26 to develop foundational geospatial infrastructure and data.
- **Operation Dronagiri:** A pilot initiative to demonstrate real-world applications of geospatial technologies.
- **Continuously Operating Reference Stations (CORS) Network:** Launched by Survey of India for high-accuracy location data.
- **BISAG-N (Bhaskaracharya National Institute for Space Applications and Geo-informatics):** Provides specialized services and solutions in implementing map-based GIS.

CE20 Cryogenic Engine

ISRO successfully conducted CE20 cryogenic engine's ground test. CE20 is an advanced cryogenic rocket engine, indigenously developed by the Indian Space Research Organisation (ISRO).



- Only 6 countries possess this technology i.e. USA, Russia, Japan, France, China and India.
- **Significance:** Used in third stage of LVM3 launch vehicle; for enhancing future payload capacities (e.g. Gaganyaan Programme); and becoming self-reliant.

About Cryogenic Engines

- **Definition:** A cryogenic engine is a type of rocket engine that utilizes liquefied gases for its fuel and oxidizers.
 - The term "cryogenic" signifies that these liquefied gases must be kept at extremely low temperatures (below -150°C).
- **Types of Propellants Used:** Cryogenic engines typically employ Liquid Oxygen (LOX) and Liquid Hydrogen (LH2).
- **Principle of Operation:** A cryogenic engine is a reaction engine which generates thrust by expelling high-speed exhaust gases in one direction, producing an equal and opposite reaction that pushes the rocket forward.

Advantages of Cryogenic Engines

- **Increased Efficiency:** They generate more force per kilogram of propellant compared to conventional engines.
- **Environmental Benefits:** They are more environmentally friendly, non-toxic and non-corrosive.
- **Safety Benefits:** They are non-hypergolic (do not ignite spontaneously), which makes ground operations safer.
- **Cost-Effective:** Their efficiency can ultimately reduce the cost of launch operations

Disadvantages

- **Complex Storage Requirements:** Safely storing liquids at such extreme temperatures requires complex equipment for storage and functioning.
- **Ignition Challenges:** Needs highly specialized ignition systems to start the engines.

Herpes Simplex Virus

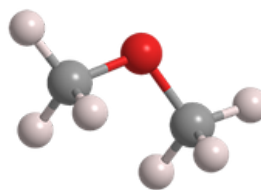
Seven dead, 92 inmates infected with herpes virus at overcrowded Jalpaiguri correctional home in West Bengal.



About Herpes Simplex Virus (HSV)

- Also known as **Herpes**, HSV is a common **viral infection** causing **painful blisters or ulcers on the mouth or genitals**.
- **Treatable but not curable** as the virus remains in the body lifelong.
- **Types of HSV**
 - **HSV type 1:** Mainly causes **oral herpes (cold sores)** around the mouth, spread through oral contact, saliva, or skin contact and can also cause **genital herpes** via oral-genital contact.
 - **HSV type 2:** Primarily causes **genital herpes**, spread through sexual contact with infected skin, sores, or fluids.
 - **Rare Transmission: Mother to baby during childbirth (neonatal herpes).**

Dimethyl Ether (DME)



Council of Scientific and Industrial Research- National Chemical Laboratory (CSIR-NCL) has developed a **Dimethyl Ether (DME) production process technology**.

- DME can be considered as a ‘Second Generation fuel/bio-fuel’ and used as a sustainable alternative to LPG.

About Dimethyl Ether (DME)

- **Nature:** Colourless gas, slight ethereal odour, liquefies under pressure
- **Properties:** Inert, non-corrosive, non-carcinogenic, low toxicity, does not form peroxides by prolonged exposure to air
- **Applications:** Fuel, aerosol propellant, solvent, and refrigerant.
- **Advantages as a fuel:** Clean burning with minimal **SO_x**, **NO_x**, **soot**, **particulate matter**; comparable calorific value and thermal efficiency to traditional fuels; can be blended with LPG (up to 20%); can be produced from Indian coal, methanol, or captured CO₂, etc.

Atomic Clock aboard IRNSS



Atomic Clock aboard the ISRO's IRNSS-1F stopped functioning IRNSS-1F, launched in 2016, is the sixth navigation satellite of the seven satellites constituting the Indian Regional Navigation Satellite System (IRNSS) space segment.

- Its payload included highly accurate **Rubidium Atomic Clock**, a critical component for providing navigation service.

About Atomic clock

- An atomic clock is an ultra-precise, space-hardened timekeeping device that measures time by **monitoring the resonant frequency of atomic transitions in elements** such as cesium, rubidium, or hydrogen.
- It works like a conventional clock but the time-base of the clock is based on the **properties of atoms when transitioning between different energy states**.
 - An atom, when excited by an external energy source, goes to a higher energy state and then, it returns to a lower energy state. In this transition, the atom releases energy at a very precise frequency which is used as an input for measuring time.
- Atomic Clocks are said to **gain or lose only one second every 100 million years**, as compared to one second in a few days for conventional clocks like those that are based on quartz.
- They have a **lifespan of 10—15 years**, roughly commensurate with the average operational life of a satellite.

About IRNSS – Navigation with Indian Constellation (NavIC)

- It is an independent **regional navigation satellite system** being developed by ISRO.
- **Satellite Constellation:** Consists of 7 satellites and a network of ground stations.
 - **3 satellites** in Geostationary orbit (GEO) and **4 satellites** in Geosynchronous (GSO) orbits.
- It is designed to provide **accurate position information service** to users in India as well as **regions extending up to 1500 km** from its boundary, which is its **primary service area**.
- **Key services:** Standard Position Service (SPS) for civilian users and Restricted Service (RS) for strategic users.

Report on IndiaAI Mission

Parliamentary Standing Committee Report Analyses Performance of IndiaAI Mission Report analyses Demand for Grants for 2026-27 for Ministry of Electronics and Information Technology (MeitY), focusing on performance, financial allocations, and execution of IndiaAI Mission.



Key Issues	Recommendations
Low Utilization of Funds: Only about 32% of the Revised Estimates (RE) for FY 2025–26 were used (till Dec 2025). As a result, the Budget Estimates (BE) for 2026–27 were reduced to nearly half of the originally projected needs.	Improved Financial Management: The committee advised MeitY to ensure better fiscal discipline, speed up execution across mission components, and make spending more efficient.
Infrastructure Challenges: Even with efforts to build GPU clusters, constraints such as expensive hardware, disruptions in global supply chains, and policy-related tax issues continue to hinder progress.	Wider Stakeholder Engagement: MeitY should engage with industry and other stakeholders to address procurement hurdles and manage supply-side constraints effectively.
Ecological Concerns: Large-scale digital infrastructure, particularly data centres, require significant amounts of electricity and water, raising sustainability concerns.	Environmental Safeguards: It is recommended that MeitY work closely with environmental experts to minimize ecological impacts while establishing domestic data infrastructure.
R&D and Inclusivity Gaps: Developing an indigenous AI model faces technical and institutional challenges. Moreover, research funding is concentrated in top institutions like IITs and national labs, restricting wider participation.	Expanding Research Access: MeitY should evaluate the effectiveness of initiatives such as the Anusandhan National Research Foundation and the Research Development and Innovation Fund to promote broader and more inclusive research participation.

About IndiaAI Mission

- **Launched:** 2024 by the MeitY
- **Aim:** To foster AI innovation by democratizing computing access, enhancing data quality, and developing indigenous AI capabilities.
- **Implementing agency:** IndiaAI, an Independent Business Division (IBD), under MeitY.
- **7 pillars:** IndiaAI Innovation Centre, IndiaAI compute capacity, IndiaAI FutureSkills etc.
- **Duration:** 5 years

White and Brown Fat

Recently in news, fat cells (both white fat and brown fat) can become a promising target for future weight-loss therapies as they burn energy to make heat.



About White Fat and Brown Fat

- **White Fat** is the most abundant fat in adults and **Brown Fat** is mainly found in neck and upper chest.
- **Primary Function: White Fat** stores energy in the form of triglycerides.
 - **Brown Fat** burns energy and dissipates calories; converts chemical energy into heat.
- **White Fat** acts as a powerful endocrine organ, releasing hormones like leptin (to reduce appetite) and adiponectin (to regulate insulin and blood sugar).
 - **Brown Fat** is naturally triggered by the brain upon exposure to cold temperatures to **generate heat**.

National Quantum Mission

The government has cleared 23 institutions to set up 'quantum labs' under the National Quantum Mission.



About National Quantum Mission (NQM):

- **Overview:** NQM was launched by the **Department of Science & Technology (DST)** for the period of **2023-2031** to make India a global leader in quantum technologies.
- **Aim:** To seed, nurture and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology (QT).
- **Mission objectives:**
 - Establishing a **secure and high-bandwidth communication infrastructure** spanning 2,000 kilometers.
 - Developing **quantum computers with a processing capacity of 500 to 1,000 qubits**, unlocking immense computational capabilities, etc.

Patriot Missile Defense System



NATO is deploying U.S. Patriot missile defence system to the southern province of Adana in Turkey.

About Patriot Missile Defence System

- **PATRIOT** is an acronym for Phased Array Tracking Radar to Intercept on Target,
- It is a ground-based, **mobile missile defense interceptor** developed in the United States.
- It **detects, tracks, and engages** Unmanned Aerial Vehicle (UAV) cruise missiles, and short-range or tactical ballistic missiles.

Antimicrobial Resistance

Researchers from the CSIR-Centre for Cellular and Molecular Biology (CCMB), Hyderabad have published the first comprehensive AMR map in Indian urban wastewater.



- Study shows **bacteria become resistant through genes** that **strengthen cell walls** against antibiotics, **neutralize or expel** antibiotic molecules, and can **spread to both offspring and neighbouring microbes**.

About Antimicrobial Resistance (AMR)

- AMR occurs when **bacteria, viruses, fungi and parasites** become **resistant** to antimicrobial medicines.
 - Antimicrobials (**antibiotics, antivirals, etc.**) are medicines used to prevent and treat **infectious diseases** in humans, animals and plants.
- **Causes:**
 - The **misuse and overuse** of antimicrobials
 - Lack of access to clean **water, sanitation and hygiene (WASH)**
 - Poor infection and disease **prevention and control**
 - Poor access to **quality and affordable vaccines, diagnostics and medicines**

Astronauts Re-entry and Safe Landing



Returning home from space is a complex technical challenge that requires precise calculations regarding speed and entry angles.

Key Stages in Re-entry Process

- **Re-entry into Earth's Atmosphere (De-orbit Burn process):** Spacecraft fires engines in reverse to slow down, allowing Earth's gravity to pull it into the atmosphere.
 - Capsule uses a heat shield to withstand extreme temperatures during re-entry.
- **Deploying Parachutes:** This plays a natural role as a brake that allows the capsule to float gently downward.
 - After this, the capsule lands either on land or in the ocean (splashdown).

Major Challenges during Atmospheric Re-entry

- **Hitting the exact re-entry angle:** Calculating the precise angle and speed of descent is crucial for the crew's survival.
 - If the angle is too steep, the friction will cause the spacecraft to completely burn up on re-entry, killing everyone on board.
- **Surviving immense heat:** Air rushing past it creates intense friction. Temperatures can easily exceed 1600°C—which is hot enough to melt steel—and can even rise to almost 4000°C.
- **Slowing down from extreme speeds:** Before re-entry, spacecraft travel much faster than the speed of sound, reaching speeds between 17,500 mph and 25,000 mph.
- **Communication blackout:** Extreme heat ionises air into a plasma sheath around the capsule. This acts like a metallic barrier that blocks radio signals, causing a temporary communication blackout until.

ISRO's re-entry Capabilities

- ISRO first proved its ability to safely return an orbiting craft to Earth with the **Space Capsule Recovery Experiment (SRE)** in 2007.
 - This was significantly advanced by the **2014 Crew Module Atmospheric Re-entry Experiment (CARE)**.
- Also, ISRO is developing a **winged Orbital Re-entry Vehicle (ORV)** that will be launched into orbit and then autonomously re-enter Earth's atmosphere to land on a runway like an aircraft.

Nalgonda technique

Centre commissioned research project to evaluate technologies to remove fluoride from water amid concerns that existing standards, based on Nalgonda technique, have not kept up with technological advancements or field realities.



About Nalgonda technique

- In this **three chemicals**, namely **aluminium salts, lime and bleaching powder** are used and added to **raw or fluoridated water** followed by **rapid mixing, flocculation, sedimentation, filtration, and disinfection** processes.
- **Simple and cost effective** developed by **National Environmental Engineering Research Institute (NEERI)**.
- Recommended by **Government of India** for its application to remove excess fluorine from drinking water.

Agnite Engine

Indian private space startup **Agnikul Cosmos** has reached a major milestone by successfully **test-firing Agnite Engine**.



About Agnite Engine

- Agnite is the **world's largest single-piece 3D-printed booster engine**.
- **Agnite and Agnilet** are Agnikul's 3D-printed semi-cryogenic engines.
- It is made using **Inconel**.
 - Inconel is a **high-performance alloy** specifically designed to endure extreme temperatures.
- The Agnite engines are built to power the booster stage of **Agnikul's Agnibaan launch vehicle**.

Large Hadron Collider



Large Hadron Collider discovers a new particle Previously, LHC has discovered key particles such as Higgs Boson(2012), Exotic hadrons (Particles composed of four or five quarks), Rare B- meson decay, etc.

- Previously, LHC has discovered key particles such as **Higgs Boson(2012)**, **Exotic hadrons (Particles composed of four or five quarks)**, **Rare B- meson decay**, etc.

About the New Particle Xi-cc-plus

- It is made up of **two charm quarks** and **one down quark**, similar to proton (made up of **two up quarks** and **one down quark**).
 - Quarks are **fundamental building blocks of matter** and come in six flavours: **up, down, charm, strange, top and bottom**.
 - Quarks are always found in combination and **never occur in a free state**.
- The replacement of **charm quarks** with **up quarks** makes its mass **four times heavier than proton**.

About Large Hadron Collider (LHC)

- LHC is the **world's largest and most powerful particle accelerator** which operates in a tunnel 100 meters underground at CERN, the European Organization for Nuclear Research.
- **Structure:** It consists of a **27-kilometre ring of superconducting magnets** with a number of accelerating structures to boost the energy of the particles along the way.
- **Functioning:** Inside the accelerator, **two high-energy particle beams of protons or ions** travel at close to the **speed of light** before they are made to collide.
 - These collisions produce particles and fields necessary for **fundamental understanding of nature such as mass, unification of forces, dark energy and dark matter**, etc.

About CERN (European Organization for Nuclear Research)

- **Located** on Franco-Swiss border **near Geneva**, it is the world's largest centres for scientific research in fundamental physics using advanced particle accelerators.
- **Founded:** in 1954.
- **Members:** **25 member states (India is an associate member)**.

Tuberculosis (TB)

New cases of tuberculosis emerging yearly in India dipped by 21% from 2015-2024; mortality due to TB dropped by 25% during the same period.

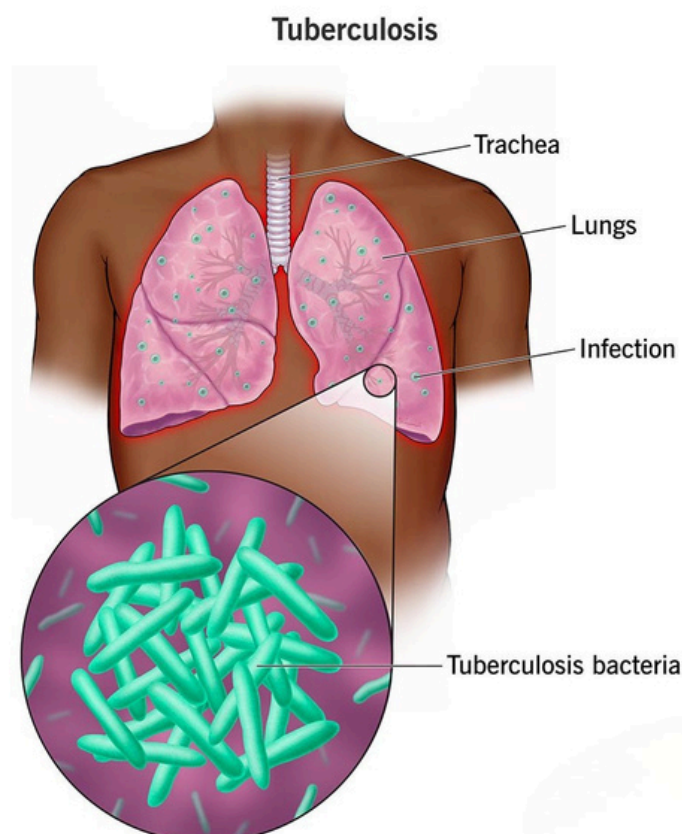
- As per, **World TB Report 2025**, India carries the highest burden of tuberculosis in the world (25% TB patients).

Initiative helped in Reducing TB Burden

- **PM TB Mukht Bharat Abhiyaan:** A mass movement with focus on **early detection, community participation, and patient support.**
- **Nikshay Poshan Yojana:** It provides **Direct Benefit Transfer to TB patients**, improving treatment adherence.
- **Ni-kshay Mitra:** It promotes **community-driven support through volunteers** providing nutritional and social assistance to TB patients.
- **TB-Free Urban Ward Initiative:** It aims to **replicate successful TB-free Gram Panchayat models** in urban areas.
- **BPaLM Treatment Regimen:** A new shorter drug regimen introduced for drug-resistant TB to reduce treatment duration to around 6 months improving outcomes.
- **AI-Led Initiatives:** E.g., **DeepCXR (Chest X-ray), Automated reading of digital X-rays** to identify nodules/cavities for presumptive TB cases.

About Tuberculosis (TB)

- It is a **contagious airborne disease** caused by a bacterium called **Mycobacterium tuberculosis**, which is preventable and curable.
- It primarily affects the **lungs**, but can also impact other organs such as the **brain** and **kidneys**.
- **Transmission:** It spreads through air via **coughs, sneezes, or close contact with an infected person.**
- India has **reaffirmed its commitment** to eliminate TB by 2025 in line with the global **SDG target 3.3.**



Kurds

The U.S. is increasingly seeking support from Kurdish groups in its conflict with Iran.



About Kurds

- Kurds are one of the world's largest **stateless ethnic groups** with a population between 30 and 40 million worldwide.
- **Region:** They live mostly amid the peaks and valleys straddling the borders of **Armenia, Iraq, Iran, Syria and Turkey.**
- **Culture:** The Kurds have a distinct culture, including a Persian-related language with many dialects, traditional dress, music, cuisine, and identity.
- **Demand for Separate State:** Their nationalism emerged in the late 19th century, but aspirations for a homeland have repeatedly been thwarted.

Santiniketan

Spring festival (Basant Utsav) was recently celebrated in Bengal, a tradition first started by Nobel Laureate Rabindranath Tagore at Visva-Bharati, Santiniketan.



About Santiniketan

- Established in **1901** by **Rabindranath Tagore** located in West Bengal.
 - The site was established as an ashram and given its name in **1863** by **Tagore's father, Debendranath Tagore.**
- It was a **residential school** and **centre for art** based on ancient Indian traditions.
- In 1921, a **'world university'** was established at Santiniketan, later recognised as **'Visva Bharati'**.
- It was recognized by UNESCO as **India's 41st World Heritage Site** in 2023.
 - **Recent World Heritage Sites in India:** Moidams – Mound-Burial System of the Ahom Dynasty (2024); Maratha Military Landscapes (2025).

Kurumba Painting

The Kurumba art tradition faces the threat of extinction.



Kurumba Painting

- **Origin:** A 3,000-year-old tribal folk painting of the Kurumba tribe found in Tamil Nadu, Kerala, and Karnataka.
 - The Kurumba tribe is classified as a **Particularly Vulnerable Tribal Group (PVTG).**
- **Themes:** Depicts rituals, spiritual beliefs, festivals, nature, animals and community life.
- **Materials:** Uses natural pigments from forest sources like tree resin and crushed leaves.
- **Style:** Characterised by simple linear motifs, dots, lines and geometric patterns.
- **Cultural Role:** Traditionally painted on walls and temples, preserving tribal traditions and visual storytelling.

Kuki and Hmar Communities



Assam government signed memorandums of settlement with Kuki and Hmar militant groups.

- It includes groups such as the United Kukigam Defence Army and the Kuki Revolutionary Army, among others.

About Kukis

- The Kukis belong to the **Tibeto-Burman ethnic group**.
- **Spread:** Mainly resides in the Lushai Hills of Manipur but also found in all north eastern states (except Arunachal Pradesh), Myanmar, and Bangladesh.
- Traditional Kuki society is centred around the village hereditary chief, known as the '**Haosa**'.

About Hmar tribe

- Hmar (meaning north) are a specific ethnic group within the larger Kuki-Zo umbrella.
- **Spread:** They live mostly in the hills of south Manipur, Mizoram, Assam, Meghalaya, Tripura and also found in Myanmar and Bangladesh.

Carnatic music

Recently, a Carnatic musician is named for Sangita Kalanidhi award 2026.



- **Sangita Kalanidhi award** conferred by the Music Academy, Chennai, is considered the highest accolade in the field of Carnatic music.

About Carnatic music

- It is the **classical music tradition** of South India and one of the two main systems of Indian classical music, the other being **Hindustani music**.
- It is primarily **devotional** in nature.
- **Instruments:** Veena, violin, flute, nadaswaram, mridangam, ghatam, kanjira and morsing.
- **Compositions:** kriti, keertanam, varnam, padam, jaavali etc.
 - **kriti** is the most important of the melodic group of compositions.
- **Tyagaraja, Muthuswami Dikshitar** and Shyama Shastri are known as the trinity of carnatic music

Tribes Art Fest 2026



Recently Tribes Art Fest 2026, was organized in Delhi for preservation and commercialization of India's various tribal arts.

Key Tribal Arts Displayed

- **Warli Painting (Maharashtra)**
 - It has a **GI tag** and uses geometric shapes and **rice paste** on mud walls
 - **Themes:** Nature, farming, rituals (Tarpa dance)
- **Rabha & Tamang Masks (Assam, Bengal, Himalayan region)**
 - Used in ritual dances and folk theatre
 - Made from wood, bamboo, clay, gourds
 - **Themes:** Deities, spirits, mythological beings
- **Gond Painting (Madhya Pradesh)**
 - It is GI-tagged and known for **intricate dots and line patterns**.
 - **Themes:** Animals, folklore, ecology
- **Bhil Painting (Central India)**
 - Characterised by **thousands of dots (pointillism style)**
 - **Themes:** Nature, deities, daily life

Gajapati Dynasty

15th Century Odisha rulers' inscriptions were found in Guntur Temple of Gajapati ruler.



About Suryavamsi Gajapati Dynasty (Odisha)

- **Succeeded:** Eastern Ganga dynasty (weakened by mid-14th century political instability).
 - Rulers of this dynasty claimed descent from **Suryavamsa (Solar dynasty)** of Lord Rama for legitimacy.
 - The Title **Gajapati ("Lord of Elephants")** was earned due to the large elephant corps in their army.
- **Founder:** **Kapilendradeva (1435–1467 CE)**, overthrew the last Ganga king Bhanu Deva IV.
- **Prominent Rulers:** Purusottamadeva, Prataprudradeva, etc.
- **Capital:** Cuttack (Abhinava Varanasi Kataka)
- **Ministerial Council:** Amatyas – Ministers; Sandhivigrahi – War & Peace; Sena-narendra – Army Chief; Rautaraya – Army Captain; Pariksha – Treasury Secretary; others for seals, temple accounts, etc.

Mahad Satyagraha

Convention held to mark the centenary year of the Mahad Satyagraha.



About Mahad Satyagraha

- **Date & Place:** Started on **20 March 1927** at Chavdar Tale (Tank), Mahad (Maharashtra).
- It was a **non-violent protest led by Dr. B. R. Ambedkar**, aimed to secure the **right of untouchables to access public drinking water**, which was denied due to **caste discrimination**.
- **Symbolic acts** like **drinking water from the public tanks** and **burning of the Manusmriti** were performed, **rejecting the caste system**.
- **Key leaders:** **Anandrao Chitre, Bapu Sahastrabuddhe, Sambhaji Gaikwad, Ramchandra More.**
- After a **decade of litigation**, in **1937 the Bombay High Court** upheld the right of untouchables to use the public tank.

World Obesity Atlas 2026

Atlas provides global, regional and national estimates of rising obesity among children and adolescents.



- Obesity is classified by the **World Health Organization (WHO)** as a chronic, relapsing disease characterising abnormal or excessive fat accumulation that presents a risk to health.
 - Its diagnosis is made by measuring people's weight and height and by calculating the **Body Mass Index (BMI): weight (kg)/height² (m²)**.
 - For school-age children (aged 5-19 years), obesity is greater than 2 standard deviations above the WHO Growth Reference median.

Key Highlights of the Report

Global Scenario

- **Obesity:** Prevalence of obesity among school-age children (aged 5-19 years) has increased from 4% in 1975 to nearly 20% in 2022.
 - The majority resides in middle-income countries.
- **Implications:** Obesity in childhood frequently persists into adulthood, increasing the risk of Non-Communicable Diseases (NCDs) such as diabetes, heart disease, and certain cancers.
- **High Burden Countries:** Ten countries (with highest burden in China, India, and US) alone account for over 200 million school-age children with high Body Mass Index (BMI).

Indian Scenario

- **High Burden:** India ranks second globally for children who are overweight and living with obesity.
 - **41 million** school-age children in India have high BMI.
- **High chronic disease indicators:** In 2025, about 8.39 million children had BMI-attributed metabolic dysfunction-associated liver disease (MASLD), while 2.98 million suffered from BMI-attributed hypertension.

About CBD (Secretariat: Montreal, Canada)

- **Legally binding** treaty adopted at the UN's Conference on Environment and Development, Earth Summit, Rio de Janeiro, Brazil in 1992.
 - It entered into force in 1993 and operates under **United Nations Environment Programme**.
- **Governing Body:** Conference of Parties (CoP).
- **Objectives:** Conservation of biological diversity; sustainable use of its components; and fair and equitable sharing of the benefits
- **Protocols:** Cartagena protocol on biosafety and Nagoya protocol on access and benefit sharing.

International Women's Day



International Women's Day and India's focus on Women-led Development

International Women's Day

Theme for International Women's Day 2026: "Rights. Justice. Action For ALL Women and Girls."

- India's development approach has evolved from **development for women** to **women-led development**, recognising women as drivers of economic and social progress.

Steps taken for Women Led Development in India:

- **Gender-responsive public investment:** FY26 features India's highest-ever gender budget at ₹5.01 lakh crore (9.37% of the Union Budget).
- **Women building rural economies:**
 - **Lakhpati Didi:** Over 3 crore rural women are actively progressing toward building sustainable, high-income livelihoods
 - **NaMo Drone Didi Yojana:** Provides agricultural drones to 15,000 SHGs with an 80% subsidy, integrating women into the tech ecosystem.
- **Finance fuelling entrepreneurship**
 - **Financial Inclusion:** Women comprise **68% of the PM MUDRA loan** beneficiaries and hold **56% of all Jan Dhan accounts**.
 - **Stand-Up India:** Supported over **2 lakh women entrepreneurs** in launching greenfield enterprises.
 - **Start-Up India:** Has supported over **75,000 women-led startups**.
- **Skills, Innovation, & Leadership**
 - **Skilling Programs:** Women make up nearly **45% of Pradhan Mantri Kaushal Vikas Yojana** trainees.
- **Social Justice & Empowerment:** Abolition of **Triple Talaq** criminalizes instant divorce, ensuring dignity, equality for Muslim women.

Sahitya Akademi



Sahitya Akademi announced its annual Sahitya Akademi Awards.

- **Sahitya Akademi Awards** are presented to most outstanding books of literary merit in **24 Indian languages** recognised by it.
 - **Established:** 1954; **First awarded-** 1955
 - The author must be of **Indian nationality**.

About Sahitya Akademi

- **Sahitya Akademi** is India's **National Academy of Letters** that promotes literary activities across **24 Indian languages (22 Scheduled Languages and English and Rajasthani)**.
- **Nature:** Autonomous organization under **Ministry of Culture**
- **Established:** **1954** (registered as a Society under the **Societies Registration Act, 1860**.)

Empowering Women in Agriculture



International Women's Day 2026, themed "Rights. Justice. Action.", coincides with the International Year of the Woman Farmer, highlighting the significance of empowerment of women farmers.

- 11.72% of total operated area in India was operated by female operational holders. (Agriculture Census 2015-16)

Key issues faced by Women in Agriculture

- **Lack of Land Ownership:** Despite legal inheritance, women own only 11% of agricultural land (World Bank).
- **Limited Access to Institutional Support:** Lack of land titles restricts women's access to credit, crop insurance, irrigation schemes, extension services, and government agricultural programmes.
- **Feminisation of Agriculture:** Male migration has increased women's agricultural responsibilities without a corresponding rise in resources, decision-making power, or benefits.

Way forward for Women Empowerment

- **Recognise women as farmers:** By defining farmers based on agricultural activities (not land ownership) and collecting gender-disaggregated data.
- **Strengthen land and resource rights:** Through equal inheritance laws, joint land titles, incentives for property in women's names, and gender-sensitive land administration.
- **Improve access to technology and services:** By providing labour-saving tools, inclusive extension services, market information, and climate-resilient farming knowledge.

Immunisation for All

India is moving towards universal immunization of its population through vaccination under the Universal Immunisation Programme (UIP).



About Universal Immunisation Programme (UIP)

- **Launched:** in 1985 by the Ministry of Health and Family Welfare.
- **Objectives:** To rapidly increase **immunization coverage**, establish a **reliable cold chain system**, achieve **self-sufficiency in vaccine production**.
- **Disease Coverage:** provides protection **against 12 life-threatening diseases**, including Diphtheria, Polio, Tetanus, Tuberculosis, Hepatitis B, Measles-Rubella, etc.
- **Mission Indradhanush:** **launched in 2015** to reach **children and pregnant women** who are unvaccinated or partially vaccinated, following it with **Intensified Mission Indradhanush Missions** (with a greater focus on urban areas).
 - These missions aim to **achieve over 90% full immunisation coverage** under the UIP by strengthening routine immunisation services and targeting hard-to-reach populations.
- **Digital Backbone:**
 - **U-Win:** It is a **digital app** to help people **find vaccination centres** near their residence, manage vaccination appointments at health facilities and maintain vaccination records.
 - **Electronic Vaccine Intelligence Network (eVIN):** a state-of-the-art software platform that **tracks vaccine stock levels and storage temperatures** in real time at multiple locations across the country.

Achievements under UIP

- **Disease Eradication:** India has successfully eradicated smallpox, yaws, maternal & neonatal tetanus, and polio.
- **Full immunisation coverage:** Increased from **62% in 2015 to 98.4%** (as of January 2026).
- **Drop in Zero-Dose Children:** from 0.11% in 2023 to **0.06% in 2024**.
 - **Zero-dose children** are defined as those that lack access to or are never reached by routine immunization services.
- **Global Supplier:** India is the **world's largest vaccine producer**, supplying approximately **60% of the world's vaccines**.

Bharat Audyogik Vikas Yojna



BHAVYA offers new era of Plug-and-Play Industrial Development towards world-class industrial infrastructure.

Key Features of BHAVYA

- **Objective:** Developing **100 plug-and-play industrial parks** across India with an allocation of **Rs.33,660 crore**.
 - Industrial park is a **planned tract of land with/without ready-built factories, and supported by shared facilities for multiple industries.**
- **Eligibility:** Industrial parks ranging from **100 (25 acres for NE & hilly regions) to 1000 acres** would be chosen.
- **Duration:** **6 years (FY 2026–27 to 2031–32).**
- **Financial Support:** Up to **Rs. One crore per acre** for:
 - **Core infrastructure** (internal roads, underground utilities, drainage, common treatment facilities, ICT and administrative systems).
 - **Value-added infrastructure** (ready-built factory sheds, built-to-suit units, testing labs, warehousing).
 - **Social infrastructure** (worker housing and support amenities).
 - Support for **external infrastructure** up to **25%** of project cost would also be provided.
- **Beneficiaries:**
 - **Primary:** Manufacturing units, MSMEs, startups, and global investors seeking ready-to-use industrial infrastructure.
 - **Secondary:** Workers, logistics providers, service sector enterprises, and local communities.
- **Implementation:** By **National Industrial Corridor Development Corporation (NICDC)**, under Department for Promotion of Industry and Internal Trade, and in partnership with **State and Private Sector.**

Plug and Play Industrial Parks in India

- **Ready-to-use ecosystems** where land, utilities, approvals, and infrastructure are pre-developed, enabling industries to **start operations quickly without delays.**
- **Union Budget 2025-26 allocated Rs. 2,500 crores** for their development.
- There are **306 plug-and-play industrial parks in India**, with additional 20 plug-and-play industrial parks and smart cities being developed under NICDC (December 2025).

Significance of BHAVYA

Cluster-Oriented Development

Bringing industries, suppliers, and service providers together in a shared location.

Forward-Looking Approach

Designed in line with PM Gati Shakti framework to establish modern standards.

Business-Friendly Environment

Simplified approval processes, single-window clearances, and policies supportive of investors.

Efficient Resource Management

Use of underground utility networks to promote a seamless, no-dig infrastructure system.

UNIGME Report 2025



The Levels and Trends in Child Mortality Report 2025 highlights that India has achieved a significant decline in its child mortality.

- The report is released by the **UN Inter-agency Group for Child Mortality Estimation (UNIGME)**.

Key Findings related to India

- **Under-five mortality** rate reduced to 26.6 in 2024 from 127 in 1990, registering a sharp 79 % decline.
- **Neonatal mortality** rate had fallen to 17 in 2024.
- **Infant mortality** fell to 23.3.
- This progress is achieved due to
 - **Targeted**, demand-driven initiatives such as **Janani Suraksha Yojana** and **Janani Shishu Suraksha Karyakram**.
 - **Universal Immunisation Programme**, facility-based newborn care, and Integrated Management of Neonatal and Childhood Illnesses **etc.**

KAVACH system



Indian Railways approved extension of **KAVACH** system across multiple zones.

About KAVACH (Automated Train Protection (ATP) system)

- It is a **Train Collision Avoidance System (TCAS)** that prevents collisions by automatically applying brakes if 2 trains are on a collision course.
- **Developed by:** Research Designs & Standards Organization (RDSO) of Indian Railways.
- **Key features**
 - Continuous real-time updates to the locomotive.
 - Prevention of all types of train collisions: head-on, rear-end, and side-on. (loco to loco communications)
 - Prevents Signal Passing at Danger
 - **Others:** Repeats line-side signal for foggy weather, Automatic horn activation, Emergency Stop-on-Sight (SoS) messages

India as Drone Hub



India must emerge as global hub for indigenous drone manufacturing: Defence Minister Defence Minister highlighted the pivotal role of drones and counter-drone technologies in future warfare and there is an urgent need to build a drone production ecosystem to ensure strategic autonomy and enhance defence preparedness.

Role of Drones in Warfare

- **Surveillance:** Drones provide real-time, high-definition surveillance, enabling military personnel to monitor enemy positions and movements without putting troops at risk.
- **Suppression of Defences:** Russia's drone campaign, for instance, makes use of Shahed drones to saturate Ukrainian air defences.
- **Low-cost Warfare:** Ukraine's **Operation Spider Web** demonstrated that low-cost UAVs combined with accessible technologies can have strategic impact deep into enemy lines.
- **Electronic Warfare:** Some drones are designed with electronic warfare features, allowing them to jam or spoof enemy radar and communication systems.

Initiatives for Augmenting Drone Production Ecosystem

- **Production Linked Incentive (PLI) Scheme for Drone and Drone Components:** Aims to promote high-value domestic manufacturing by encouraging local production.
- **Import Policy:** Government announced import ban on drones in CBU (Completely Built-Up), SKD (Semi-Knocked Down), and CKD (Completely Knocked Down) units.
- **Tax Rationalisation:** GST on drones was reduced to a uniform 5% in September 2025.
- **Promotion Platforms:** Platform such as **Bharat Drone Shakti, Bharat Drone Mahotsav and the Drone International Expo** promote Drone-as-a-Service (DaaS) start-ups and new business models.
- **SwaYaan:** Capacity Building programme for Human Resource Development in Unmanned Aircraft Systems

Achievements under UIP

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- **Global Supplier:** India is the world's largest vaccine producer, supplying approximately 60% of the world's vaccines.

Category of Drone	Description (Rephrased)	Examples in India
Surveillance & Reconnaissance Drones (ISR)	Mainly deployed for collecting strategic information, real-time monitoring, and situational assessment over specific areas.	<ul style="list-style-type: none"> • TAPAS-BH-201 – Advanced aerial surveillance platform • Rustom – Developed by DRDO • Heron – Acquired from Israel
Armed / Combat Drones (UCAVs)	These are unmanned aerial systems built for strike missions, equipped to carry and deploy precision weapons.	<ul style="list-style-type: none"> • Ghatak – Indigenous UCAV under development by DRDO • Heron TP – Imported combat drone from Israel
Loitering Munitions	Designed to stay airborne over a region for extended periods and engage targets once identified.	<ul style="list-style-type: none"> • Nagastra – Developed by Solar Industries & ZMotion • Warmate – Originates from Poland
Swarm Drones	Multiple drones operate as a coordinated unit, executing tasks collectively to achieve higher efficiency and tactical advantage.	<ul style="list-style-type: none"> • Under development by DRDO and private sector firms in India