



Monthly Current Affairs Magazine

Current X-press

One-Stop Solution for Current Affairs

Covers all the major sources including

- ✓ The Hindu
- ✓ Indian Express
- ✓ PIB
- ✓ Down To Earth
- ✓ The Scientist
- ✓ Drishti
- ✓ Insights
- ✓ Vision

50 Year of National Emergency



- Highly Exam-Oriented
- Crisp & Concise
- MCQ For Practice
- Proof Based Approach

JUNE 2025

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Current X-press - One Stop Solution For Current Affairs.....

How to Master Current Affairs with This Magazine (Read Carefully):

This magazine is designed as a one-stop solution for UPSC aspirants. It saves your time as it compiles everything at one place, reduces duplication, and builds exam-ready recall. Use the following framework to get the best results.

The S4 Formula (4 Steps to Mastery)

1. **Scan** - First quick reading for flow & understanding (Target Retention ~40–50%).
2. **Study** - First revision, underline & link with syllabus (Target Retention ~60–70%).
3. **Strengthen** - Second revision with active recall & integration with static topics (Target Retention ~75–80%).
4. **Secure** - Third revision, consolidate with Test Solutions & extra notes (Target Retention ~85%+).

Do's & Don'ts: (Expert Advice)**Do's:**

- Understand the structure (GS wise).
- Link every topic with the UPSC syllabus & PYQs.
- Highlight key facts, schemes, reports for Prelims & Mains.
- Integrate with static topics (e.g., climate report -- GS3, polity case – GS2).
- Practice answer writing using data/examples from the magazine.

- Revise regularly (at least 3 rounds) with below given tracker chart.

Don'ts:

- Don't make fresh notes – magazine is already compressed.
- Don't rely on one-time reading – retention curve drops fast.
- Don't follow multiple CA sources – stick to this base.
- Don't read passively – mark, annotate, self-test.

Usage Tips

- Treat this as your primary CA resource.
- Add additional notes/updates only in the provided space.
- Be selective – everything in CA is not equally important; focus on exam utility.

Current Affairs Mastery Tracker (Fill honestly every month):

Step (S4 Formula)	Target Retention	Date Completed	Retention % (Self-Eval)
Scan (1st Reading – overview & highlight)	~40–50%	<input type="checkbox"/> _____	_____ %
Study (1st Revision – GS linkage & slow revision)	~60–70%	<input type="checkbox"/> _____	_____ %
Strengthen (2nd Revision(fast) – active recall & static integration)	~75–80%	<input type="checkbox"/> _____	_____ %
Secure (3rd Revision- near exam – consolidation, content on tips)	~85%+	<input type="checkbox"/> _____	_____ %

Note:

To avoid FOMO, each subject's current affairs is sub-divided by sources for easy tracking.

Example: *Environment* includes inputs from The Hindu, Indian Express, Down to Earth, Vision, Drishti, Insights, PIB, etc.

All The Best !

Note :

For reader's ease & to avoid FOMO, every subject current affairs are sub-divided into their source too.

For Example: Environment will have the segments like The Hindu , Indian Express , Down To Earth , Vision monthly , Drishti Monthly , Insights Monthly, PIB etc.

**For all Months Magazine :****• Download from the app :**

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• Telegram channel : https://t.me/X_IAS

POLITY & GOVERNANCE

TOPICS COVERED –

- **Special Session of Parliament** – Article 85(1), procedural deviations, past examples.
- **Overseas Citizen of India (OCI) Crackdown** – Section 7D, eligibility, benefits, restrictions.
- **Right to Repair Movement in India** – Repairability Index, consumer rights, sectors, Nidhi Khare Committee.
- **Census of India 2027** – First digital census, caste enumeration, legal & historical context.
- **Civil Registration System (CRS)** – Digital birth/death registration, MHA & RGI role.
- **Registrar General of India (RGI)** – Census, CRS, SRS, NPR, advisory functions.
- **Delimitation Exercise** – Constitutional basis, past exercises, next delimitation post-2026.
- **Governor's Pardoning Powers** – Article 161, scope, limitations, judicial review.
- **Three Language Formula** – History, NEP 2020 flexibility, controversies.
- **NITI Aayog's Role** – Cooperative federalism, development indices, flagship programs, innovation hubs.
- **Waqf & Essential Religious Practices** – ERP doctrine, key cases, Articles 25 & 26.
- **Presidential Reference under Article 143** – Advisory opinions, precedents, SC role.
- **Strengthening Parliamentary Oversight Mechanism** – Tools, committee effectiveness, post-legislative scrutiny.
- **Election Commission – Voter Turnout Reporting (VTR) Upgrade** – ECINET App, real-time reporting.
- **Right to Digital Access under Article 21** – Inclusion, digital divide, SC directions.
- **Foreigners Tribunals & Detention in Assam** – NRC, Articles 21 & 22, indefinite detention issues.
- **Rohingyas & Deportation** – Legal status, Foreigners Act, Article 19(1)(e), non-refoulement.
- **Satellite Internet Service Rules – 2025** – Data localisation, security, NavIC integration, indigenisation.
- **50 Years of Emergency (1975–77)** – Causes, amendments (38th, 39th, 42nd, 44th), historical impact.
- **Personality Rights** – Definition, legal basis, right to publicity, AI threats, key judgments.
- **Constitutional Validity of Narco Tests** – Selvi v. Karnataka, involuntary vs voluntary tests, Articles 20 & 21.
- **Quality Council of India (QCI)** – Structure, PPP model, accreditation, Swachh Survekshan.
- **States Cannot Be Compelled to Adopt NEP** – Education in Concurrent List, SC ruling, state autonomy.
- **Safe Harbour under IT Act** – Section 79, intermediary liability, Digital India Act implications.
- **Adi Karmyogi Programme** – Tribal capacity building, grassroots transformation, training framework.
- **Trust-Based Regulation & Jan Vishwas Act, 2023** – Decriminalisation, ease of doing business, MSME focus.
- **Advancing SC/ST Welfare in India** – Legal protections, social challenges, implementation issues.
- **Goa as Fully Functionally Literate State** – ULLAS Programme, functional literacy definition, NEP alignment.

- **Regulation under Article 240 & Ladakh's 6th Schedule Demand** – Domicile-based quotas, cultural protections.
- **DPDP Act, 2023 & DPDP Rules, 2025** – Digital privacy, rights, obligations, cross-border transfers.
- **Zonal Councils** – Establishment, structure, objectives, Centre–State coordination.
- **Alcohol Regulation in India** – Consumption trends, health/economic impact, policy gaps, need for National Policy.
- **Reforming Subordinate Judiciary** – Vacancies, backlog, economic impact, recruitment, structure.
- **Promoting Foreign Universities in India** – NEP 2020 & UGC rules, benefits, challenges, global trend.
- **PM-WANI Scheme** – Public Wi-Fi, PDO/PDOA ecosystem, tariff caps, digital inclusion.
- **Bar Council of India Decision to Allow Foreign Lawyers** – International law practice, BCI amendments, implications.
- **Registered Unrecognised Political Parties (RUPPs)** – Delisting, definition, recognition criteria, reforms.
- **Inclusive Education for Children with Disabilities** – RPWD Act, MoU (DEPwD-NIOS-NCERT), challenges & initiatives.
- **Bureau of Civil Aviation Security (BCAS)** – Aviation security, legal powers, ICAO norms, airport expansion.



POLITY AND GOVERNANCE

SOURCE: THE HINDU
Special Session of Parliament

Recent Context

In June 2025, **Government announced a Special Session**, summoned by the President under **Article 85(1)**; Constitution omits term “special session”; **Question Hour, Zero Hour excluded.**

About

1. **Article 85(1)**: President summons Parliament; six months max gap between sessions.
2. Term “**special session**” is not in the Constitution—used administratively.
3. Summoning done by President **on advice of Council of Ministers.**
4. Procedural devices like **Question Hour, Zero Hour** may be excluded.
5. Special sessions are for urgent, commemorative, or specific agenda items.
6. Distinct from emergency sessions or regular budget/monsoon/winter sessions.
7. Past uses: 1962 war debate, 2017 GST launch, Independence commemorations.

Overseas Citizen of India (OCI) Crackdown

Recent Context :

Since **2014**, MHA cancelled **194 OCI registrations** (57 in 2024) under **Section 7D, Citizenship Act 1955**, citing grounds like **fraud, imprisonment, disaffection**, or ties with **enemy nations**.

About:

1. **OCI** → Immigration status for **foreign citizens of Indian origin.**
2. **Eligibility** → Citizens of India after **26 Jan 1950**, descendants, certain spouses.
3. **Not Eligible** → Nationals of **Pakistan, Bangladesh** & notified countries.
4. **Benefits** → **Visa-free entry, indefinite stay, NRI parity** (except for agriculture land & voting).
5. **Launched** → To address demand for **dual citizenship** by overseas Indians.
6. **Section 7D, Citizenship Act 1955** → Allows **cancellation** for fraud, crimes, anti-India acts.
7. **Restrictions** → Cannot **vote**, hold **constitutional posts**, or buy **agricultural land**.

Right to Repair Movement in India

Recent Context :

Department of Consumer Affairs introduced a framework for a **Repairability Index (RI)** for **electronics**, advancing the **Right to Repair** campaign to reduce costs, e-waste, and boost **consumer rights**.

About:

1. **Right to Repair** → Lets consumers **fix/modify products** without restrictions.
2. **Repairability Index (RI)** → Scores devices on **spare parts, repair cost, updates, manuals.**
3. **Sectors identified** → **Farming Equipment, Mobiles/Tablets, Consumer Durables, Automobiles.**
4. **Nidhi Khare Committee (2022)** → Set up for a **repair framework.**
5. **Right to Repair Portal (2022)** → Provides **manuals, authorised & third-party repairer details.**
6. **Consumer Rights** → Encourages **sustainability, affordability, circular economy.**
7. **Global Trend** → Similar initiatives in **EU, USA**, ensuring **longer product life.**

Census of India

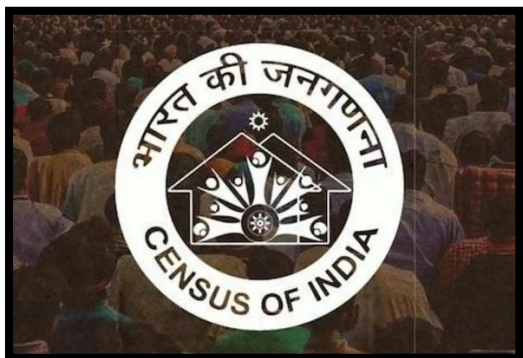
Recent Context

Government to conduct the delayed Census, concluding by **March 2027** — **first digital Census and first post-independence caste enumeration**; conducted by **Office of the Registrar General under Ministry of Home Affairs.**

About

1. **Nodal Agency**: Office of the Registrar General & Census Commissioner, under MHA.
2. **Reference Dates**:
 - **1 Oct 2026** – Ladakh, snowbound areas of J&K, Himachal Pradesh, Uttarakhand.
 - **1 Mar 2027** – Rest of India.
3. **Two Phases**: (i) House Listing & Housing Census, (ii) Population Enumeration, with a 6–8 month gap.

4. **Purpose:** Collects demographic, cultural, and economic data for planning at local, state, and national levels.



5. **Special Features (2027):** First fully digital enumeration + first caste data collection in independent India.
6. **Historical Background:**
- 1830 – First city census (Dacca, Henry Walter).
 - 1872 – First non-synchronous census (Lord Mayo).
 - 1881 – First synchronous census (W.C. Plowden).
7. **Legal/Constitutional Basis:** Union subject (Seventh Schedule, Article 246); Census Act, 1948 mandates enumeration every 10 years.

Civil Registration System (CRS)

Recent Context

Union Home Minister launched the CRS mobile app to modernise and integrate technology in birth and death registration; 23 States and 6 UTs have adopted the system.

About

1. **Meaning:** Continuous, permanent, and compulsory recording of vital events — births, deaths, and stillbirths.
2. **Nodal Ministry:** Ministry of Home Affairs (MHA).
3. **Legal Basis:** Registration of Births and Deaths (RBD) Act, 1969 — amended in 2023 for digital and real-time registration.
4. **National Coordination:** Registrar General of India (RGI) under MHA coordinates and unifies registration activities nationwide.

5. **Coverage:** As of 2025, implemented in 23 States and 6 UTs.
6. **Purpose:** Provides vital statistics for public health, population planning, and governance.
7. **Recent Development:** Mobile application launched to integrate technology, improve accessibility, and ensure real-time data entry.

Registrar General of India (RGI)

Recent Context

RGI, under MHA, issued a Gazette notification under Section 3 of the Census Act, 1948, initiating steps for the upcoming decennial Census and related enumeration activities.



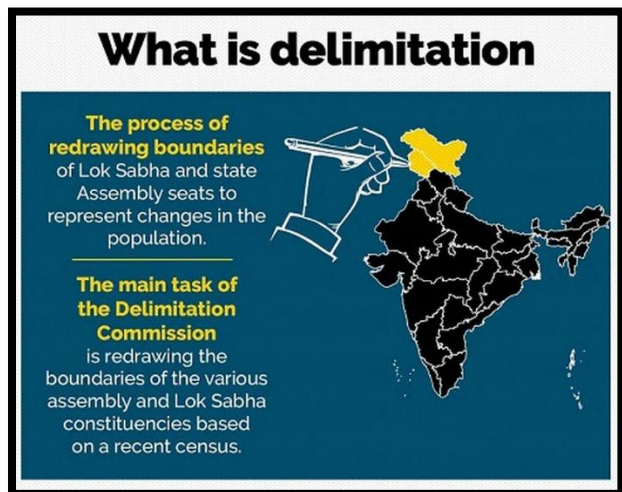
About

1. **Establishment:** Post formally created in 1961.
2. **Role:** Heads the Office of the Registrar General & Census Commissioner of India.
3. **Functions:**
 - Conducts decennial Census (Census Act, 1948).
 - Maintains Civil Registration System (births, deaths, stillbirths).
 - Oversees Housing & Population Census, Sample Registration System (SRS), National Population Register (NPR), Mother Tongue Survey of India.
4. **Advisory Role:** Principal advisor to GoI on registration of births, deaths, marriages.
5. **Data Use:** Collects and analyses demographic & socio-economic data for policy-making.
6. **Nodal Ministry:** Ministry of Home Affairs (MHA), Government of India.

Delimitation Exercise

Recent Context

The government indicated that the **next delimitation exercise** will be undertaken after the first Census post-2026, in accordance with constitutional provisions and the Delimitation Act.



About

- Meaning:** Process of fixing the number of seats and redrawing boundaries of Lok Sabha & State Legislative Assembly constituencies in each State.
- Authority:** Conducted by an independent **Delimitation Commission** set up under a Delimitation Act enacted by Parliament.
- Constitutional Basis:**
 - Article 82:** Parliament enacts Delimitation Act after every Census.
 - Article 170:** Division of State constituencies after every Census.
- Amendments:**
 - 42nd Amendment (1976):** Froze seat allocation & constituency boundaries at 1971 Census levels until 2000.
 - 87th Amendment (2003):** Allowed delimitation using 2001 Census data without changing total seats per State.
- Frequency:** Done 4 times — 1952, 1963, 1973, 2002 — under respective Delimitation Acts.
- Legal Finality:** Orders of Delimitation Commission are binding, not subject to court review; Legislatures cannot modify them; take effect from date notified by the President.

7. Notable Commissions:

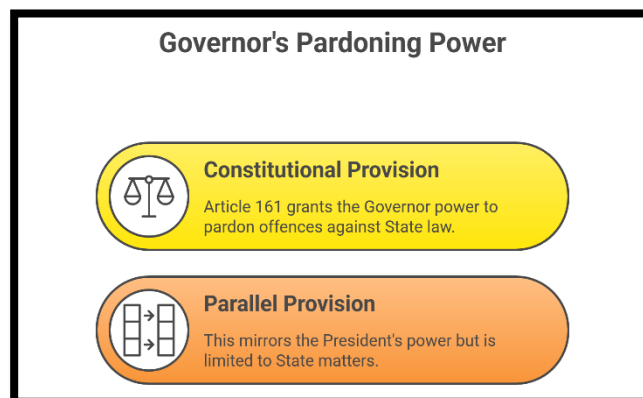
- 1st (1951 Census) — Justice N. Chandrasekhar Aiyar.
- 3rd (1971 Census) — Justice J.L. Kapur.

- Next Delimitation:** Will be based on the first Census after 2026.

Governor's Pardoning Powers

Recent Context

Several states have sought Governor's intervention to remit sentences of convicts under Article 161, prompting discussions on limits of the Governor's powers compared to the President's under Article 72.



About

- Constitutional Provision:** Article 161 empowers the Governor to grant pardons, reprieves, respites, remissions, suspension, or commutation of sentences for offences against State law.
- Parallel Provision:** Mirrors Article 72 (President) but is limited to matters under the State's executive jurisdiction.
- Limitations:**
 - Cannot pardon a **death sentence** (can only suspend, remit, or commute it).
 - Cannot pardon sentences given by **court martial**.
- Nature:** Power is exercised **post-conviction only** (unlike US President).
- Aid & Advice:** Must act on the advice of the State Council of Ministers.
- Judicial Review:** Subject to review by courts to prevent arbitrariness or mala fide use.

7. **Purpose:** To correct judicial errors, show mercy in deserving cases, and provide a humanitarian check on the justice system.

Three Language Formula

Recent Context

Debates resurfaced after several States reiterated their stand on the NEP 2020's flexible three-language formula, emphasising regional autonomy in language choice and resisting any language imposition

About

- Origin:** First suggested by **Radhakrishnan Committee (1948–49)**; formalised by **Kothari Commission (1964–66)**.
- Adoption:** Incorporated in **National Policy on Education (1968)**; revised in 1992.
- Objective:** Promote multilingualism, foster national integration, and enhance administrative efficiency.
- Structure:**
 - Regional language (mother tongue)**
 - Hindi**
 - English**
 - In Hindi-speaking States: third language should be a modern Indian language (preferably from the south).
- NEP 2020 Changes:**
 - No imposition of any language on any State.
 - Choice of languages left to States, regions, and students.
 - At least **two of the three** must be native to India.
- Special Provision:** Sanskrit encouraged as an optional language under the formula.
- Controversy:** Implementation varies; some States resist compulsory Hindi or oppose inclusion of a non-regional language.

SOURCE-INDIAN EXPRESS

NITI Aayog's Role in Fostering Strong States, Strong Nation

Recent Context :

At the **10th Governing Council meeting (May 2025)**, **PM Modi emphasized Viksit Bharat @2047**, urging

every state, district, and village to become Viksit, with NITI Aayog driving cooperative federalism.

About:

- Constitution** – Formed in January 2015, replacing Planning Commission; functions as Government of India's premier policy think tank.
- Mandate** – Promotes cooperative & competitive federalism through partnership between Centre and States.
- Composition** – Governing Council includes PM (Chairman), CMs of States/UTs with legislature, Lt. Governors, Vice Chairman & members.
- Key Indices** – Health Outcomes Index, Composite Water Management Index, and SDG India Index to track development and foster competition.
- Flagship Programmes** – Aspirational Districts Programme (2018) & Aspirational Blocks Programme (2023) targeting regional disparities.
- Innovation Hub** – Atal Innovation Mission (2016) with ATIs, AICs, startups; AIM 2.0 (till 2028) expands innovation in 22 languages.
- Approach** – Bottom-up planning, real-time data-driven monitoring, stakeholder collaboration (States, civil society, private sector, technocrats).

Waqf is not an Essential Religious Practice

Recent Context :

Centre argued in **SC** that **Waqf** is **charitable**, not an **essential practice** under **Islam**. Defended **Waqf Amendment Act, 2025**, saying no **fundamental right** exists to claim **public land** via Waqf.

About:

- Waqf** → Permanent **dedication of property** for **religious/charitable** purposes in Islam.
- ERP Doctrine** → Only practices whose **absence alters religion's character** qualify.
- Acharya Jagadisharananda Case (2004)** → **Tandava dance** not ERP of **Ananda Marga**.
- Shayara Bano Case (2017)** → **Triple Talaq** not ERP under Islam.

5. **Karnataka HC (2022)** → Wearing **Hijab** not ERP in Islam.
6. **Article 25** → **Freedom of conscience; individual right**; subject to **public order, morality, health**.
7. **Article 26** → **Collective right of religious denominations** to manage **affairs & property**.



Presidential Reference under Article 143

Recent Context :

President referred **14 questions** to **SC** under **Article 143**, after its **2025 judgment** fixed **time limits** for **Governors/President** in granting **assent to bills** under **Articles 200 & 201**.

About:

1. **Article 143** → **President** may seek **SC's advisory opinion** on **law/public importance**.
2. **Article 145** → **Minimum 5 judges** hear reference.
3. **SC opinion** → **Not binding**, but has **persuasive value**.
4. **Delhi Laws Act Case (1951)** → **Limits on delegated legislation**.
5. **Berubari Case (1960)** → **Ceding territory** requires **constitutional amendment**.
6. **Third Judges Case (1998)** → **Collegium guidelines** for **judicial appointments**.
7. **Ram Janmabhoomi Case (1993)** → Only instance when **SC declined reference**.

Strengthening Parliamentary Oversight Mechanism

Recent Context :

Debate on **accountability** highlights **weakening oversight** in **Parliament**—erosion of **Question Hour**, underutilised **committees**, lack of **post-legislative scrutiny**—despite **Constitutional checks & balances** ensuring **executive accountability** in **governance**.

About:

1. **Oversight tools** → **Question Hour, Zero Hour, Committees, No-confidence motions**.
2. **Financial Committees** → **Estimates Committee, PAC, COPU**.
3. **Question Hour (17th LS)** → Functioned only **60%** in **Lok Sabha**, **52%** in **Rajya Sabha**.
4. **Committees** → **Lack research/technical staff**, leading to **weak scrutiny**.
5. **PAC** → Exposed **CWG 2010 irregularities**; **DRSC** shaped **Motor Vehicles Act, 2019**.
6. **Way forward** → **Post-legislative scrutiny** (UK model: review laws after **3–5 years**).
7. **Tech-enabled oversight** → Use **AI, data analytics, transparency dashboards** for **participatory democracy**.

SOURCE: PIB

Election Commission – Voter Turnout Reporting (VTR) Upgrade

Recent Context

Election Commission of India announced a major upgrade to its Voter Turnout Reporting mechanism via the **ECINET App** to ensure faster, more accurate, and transparent turnout data sharing before the upcoming Bihar elections.

About

1. **Objective:** Improve accuracy, speed, transparency in voter turnout data; counter misinformation; enhance public trust.
2. **ECINET App:** PROs enter turnout every 2 hours; final entry after polls close.
3. **VTR App Auto-Aggregation:** Real-time constituency-level compilation & public display.
4. **Offline Mode:** Enables remote station reporting; syncs when network returns.
5. **Old vs New:** Replaces manual calls/SMS (4–5 hr delays) with real-time updates.
6. **Legal Context:** Rule 49S (Form 17C to polling agents) unchanged; VTR non-statutory.
7. **Rollout Goal:** Fully operational before Bihar polls; nationwide adoption planned.

Right to Digital Access under Article 21

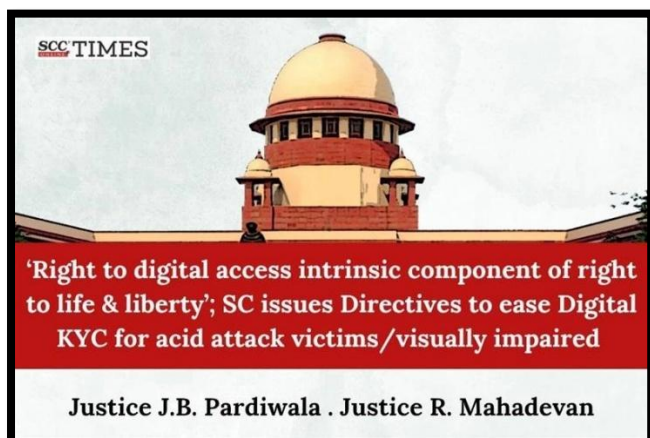
Recent Context

Supreme Court held that **digital access** is part of the

Right to Life & Liberty (Article 21), stressing inclusive and equitable **digital governance**, especially for **disabled, marginalised and underprivileged** groups.

About:

1. **Article 21** → Protects **Right to Life and Personal Liberty**.
2. **Right to Digital Access** → Declared as an **instinctive component** of Article 21.
3. **Substantive Equality Principle** → Digital shift must be **inclusive & equitable**.
4. **State Obligation** → Provide **accessible digital ecosystems** for vulnerable groups.
5. **KYC Accessibility Issue** → Triggered petition for **disabled persons** facing barriers.
6. **Digital Divide** → Unequal **infrastructure, skills, content** affects rural, poor, disabled, linguistic minorities.
7. **SC Directions** → Government must **redesign KYC processes** to ensure accessibility.



Foreigners Tribunals & Detention in Assam

Recent Context :

Concerns raised over **Assam's detention regime** where **Foreigners Tribunals** declare individuals as **illegal immigrants**, leading to **indefinite detention of stateless persons**, raising questions under **Articles 21 & 22** and **Rule of Law**.

About:

1. **Foreigners Tribunals** → Created under **Foreigners (Tribunals) Order, 1964**, backed by **Foreigners Act, 1946**.
2. **NRC 2019** → Excluded **19 lakh people**, many declared **foreigners**.
3. **Article 21** → Liberty can be curtailed only by **due legal process**.

4. **Article 22** → Allows **preventive detention** but with **safeguards**.
5. **Indefinite Detention** → Over **1.59 lakh declared foreigners**, but only **39 deported since 2017**.
6. **Rajubala Das Case (2020)** → Pending SC case on **arbitrary detention** of foreigners.
7. **Comparative Jurisprudence** → **Australia (2023)** held indefinite detention without deportation **unconstitutional**.

Rohingyas and Deportation

Recent Context :

Supreme Court observed that **Rohingyas**, if found to be **foreigners** under **Foreigners Act, 1946**, can be **deported**, since **Article 19(1)(e)** (residence/settlement) is limited to **citizens only**.

About:

1. **Article 21 & 14** → Apply to **all persons** (citizens + non-citizens).
2. **Article 19(1)(e)** → Right to reside/settle only for **citizens**.
3. **Foreigners Act, 1946** → Regulates **entry, stay, deportation** of foreigners.
4. **Passport Act, 1967** → Governs **issuance/regulation** of passports.
5. **India's Position** → Categorises **Rohingyas** as **illegal migrants**.
6. **Not a Signatory** → To **UN Refugee Convention, CAT, or Enforced Disappearance Convention**.
7. **Non-Refoulement Principle** → India not legally bound, though it is a **customary international law norm**.



Satellite Internet Service Rules – 2025

Recent Context :

The Department of Telecommunications (DoT) issued new satellite internet rules mandating localisation, security compliance, interception capability, NavIC integration, and phased indigenisation, to tighten control over satellite-based internet services in India.

About:

1. **DoT Guidelines (2025)** → Mandatory for satellite internet operators like Starlink, OneWeb, Jio Satellite, Amazon Kuiper.
2. **Data Localisation** → Network Control Centres & data centres must be within India.
3. **Traffic Rules** → User traffic cannot be routed outside India; DNS resolution must be local.
4. **Security Mandates** → Operators must provide real-time monitoring, interception of communications, and block banned websites.
5. **NavIC Integration** → All terminals must support India's satellite navigation system; terminals cannot work outside India.
6. **Indigenisation Plan** → Operators must manufacture 20% of ground systems in India within 5 years.
7. **Geo-fencing & Coverage** → Must prevent signal spillover into neighbouring countries using geo-fencing technology.

SOURCE – VISION MONTHLY

50 Years of Emergency (1975–77)

Recent Context

India marks 50 years since the declaration of the Internal Emergency on June 25, 1975, which lasted till March 21, 1977 — one of the most controversial periods in India's democratic history.

About- Reason for Emergency (1975): Declared due to political unrest (JP Movement), economic distress (inflation, unemployment), and a judicial verdict invalidating PM Indira Gandhi's election.

1. **38th Amendment (1975):** Made the President's satisfaction for declaring Emergency under Articles 352, 356, 360 final and beyond judicial review.
2. **39th Amendment (1975):** Removed judicial scrutiny over election disputes of President, Vice President, PM, and Lok Sabha Speaker.

3. **42nd Amendment (1976):** Gave primacy to Directive Principles over Fundamental Rights, curtailed judicial review, and extended Lok Sabha term from 5 to 6 years.



4. **44th Amendment (1978):** Emergency can now be declared only in case of "armed rebellion"; Fundamental Rights (Articles 20 & 21) cannot be suspended; Lok Sabha term restored to 5 years.
5. **National Emergency – Article 352:** Can be proclaimed for war, external aggression, or armed rebellion; requires President's proclamation and approval by special majority in Parliament within 1 month.

Personality Rights

Recent Context

The Delhi High Court protected the personality rights of Sadhguru Jaggi Vasudev, restraining websites and platforms from misusing his likeness and voice via AI tools, citing rising deepfake and voice-cloning threats.

About Personality Rights

1. **Definition:** Right to control commercial & non-commercial use of one's name, image, voice, likeness, and distinctive traits.
2. **Legal Basis:** Not codified; derived from Article 21 (Right to Privacy) & judicial precedents.
3. **Components:**
4. **Right to Publicity:** Prevents commercial exploitation without consent (partially under Trademarks Act, 1999 & Copyright Act, 1957).
5. **Right to Privacy:** Protects against unauthorised public representation (Justice K.S. Puttaswamy case, 2017).
6. **Posthumous Rights:** No statutory protection after death; exception under Emblems & Names Act,

1950; rights end with life (Deepa Jayakumar case, 2019).

- Key Judgements:** ICC Development (2003), Arun Jaitley (2011), Rajinikanth (2015) — upheld persona protection.
- Current Threats:** AI deepfakes & voice cloning harm privacy, reputation, and commercial value

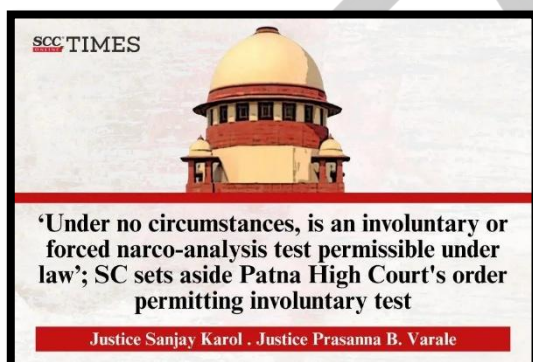
Constitutional Validity of Narco Tests

Recent Context

- The **Supreme Court** struck down a Patna High Court order that allowed narco-tests on all accused and witnesses, reaffirming limits set in *Selvi v. State of Karnataka* (2010) regarding the constitutional validity of such tests.

About Narco-Analysis Test

- Definition:** An interrogation technique where the subject is administered a psychoactive drug (commonly **Sodium Pentothal**) under controlled conditions to lower their self-control and reasoning ability.
- Purpose:** Used to elicit information that the person may consciously choose to withhold.
- Medical Use:** Sodium Pentothal is also used as a general anesthetic in surgeries (in higher doses).



Key Judicial Principles & Highlights of the Judgment

- Involuntary Narco-Test:** Unconstitutional; violates Articles 20(3) & 21; results inadmissible.
- Voluntary Narco-Test:** Allowed with consent; cannot be sole basis for conviction; derivative evidence may be admissible.
- Accused's Right:** No absolute right; can be permitted to lead evidence at trial stage.
- Key Cases:** *Selvi v. Karnataka* (2010) — constitutional limits; *Vinobhai v. Kerala & Manoj*

Kumar Soni v. MP — involuntary tests illegal, voluntary tests limited.

Quality Council of India (QCI)

Recent Context (2025)

- Minister of State for Commerce & Industry** inaugurated the new unified headquarters of the **QCI** at the **World Trade Centre, New Delhi**.

About QCI

- Genesis & Establishment:**
 - Established in **1996** as the **National body for Accreditation** in India.
 - Created to promote quality standards through a **nationwide quality movement**.
- Legal Status:**
 - Non-Profit Organization**
- Structure & Governance:**
 - Operates under a **Public-Private Partnership (PPP)** model.
 - Supported by **Government of India** and three key industry bodies:
 - ASSOCHAM**
 - CII**
 - FICCI**
 - DPIIT**, Ministry of Commerce, acts as the **nodal agency** for QCI-related matters.
 - Chairman** appointed by the **Prime Minister** on the recommendation of industry.
- Major Functions:**
 - Accreditation and quality promotion across industries, education, healthcare etc.
 - Implementing Agency for Swachh Survekshan** under *Swachh Bharat Mission*
- Global Role:**
 - Observes **World Accreditation Day** (June 9) — global initiative by **ILAC & IAF** to spread awareness about accreditation value.

States Cannot Be Compelled to Adopt NEP: SC

Recent Context :

Supreme Court dismissed a petition to implement **NEP 2020** in **Tamil Nadu, Kerala, West Bengal**, ruling it cannot **compel states**; under **Article 32**, SC intervenes only on **fundamental rights violations**.

About:

1. **Education** → in **Concurrent List** (42nd Amendment, 1976).
2. **NEP 2020** → Fourth education policy, after **1968, 1986, 1992**.
3. **Guiding pillars** → **Access, Equity, Quality, Affordability, Accountability**.
4. **Article 21A** → Makes **education a fundamental right** (ages 6–14).
5. **Right to Education Act (2009)** → Sets **minimum norms** for schools.
6. **Article 32** → Allows SC intervention only for **fundamental rights** enforcement.
7. **State Autonomy** → States not bound to adopt **central policies** like NEP.

Safe Harbour under IT Act

Recent Context :

The government is reconsidering **Safe Harbour** under **Section 79, IT Act 2000**, after controversies over **fake news, deepfakes**, and **slow action** by social media platforms; possible changes under **Digital India Act**.

About:

1. **Safe Harbour** → Protects **online intermediaries** from liability for **third-party content**.
2. **Section 79, IT Act 2000** → Grants **conditional immunity**.
3. **Actual Knowledge Rule** → Intermediary liable if content remains after **court order/government notice**.
4. **IT Rules 2021** → Added **grievance officer, compliance reports** obligations.
5. **2023 Amendment** → Attempted to strip Safe Harbour for **fake news** flagged by **PIB's Fact Check Unit**; struck down by **Bombay HC (2024)**.
6. **Significance** → Encourages **innovation & free expression** online.

7. **Digital India Act (DIA)** → Proposed law to **revamp intermediary liability**.

Adi Karmyogi Programme

Launched by:

- Ministry of Tribal Affairs

Aim:

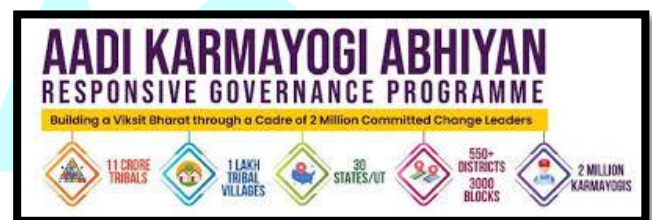
- To build a cadre of highly motivated officers and change makers focused on grassroots transformation.

Objectives:

- Capacity building for around **20 lakh field-level stakeholders**.
- Creation of a pool of **trainers and master trainers** at the State, district, and block levels.
- Foster a **fundamental shift in attitude and motivation** among field officials.
- Promote **citizen-centric ideation and service delivery**.

Target:

- Reach **1 lakh tribal villages and habitations** to ensure effective grassroots development.



SOURCE – DRISHTI IAS

Trust-Based Regulation & Jan Vishwas Act, 2023

Recent Context:

In **August 2023**, the **Jan Vishwas (Amendment of Provisions) Act, 2023** decriminalized **183 minor offenses** across **42 Central Acts** to promote **ease of doing business** through a **trust-based regulatory approach**.

About Jan Vishwas Act, 2023:

1. **Decriminalizes minor, non-malicious violations** by replacing **jail terms with fines**.
2. Covers laws under **19 ministries** including **Environment Protection Act, 1986** and **Corporate Affairs**.
3. Aims to reduce **fear, harassment**, and improve compliance, especially for **MSMEs** (Micro, Small & Medium Enterprises).

4. Promotes a **trust-based regulatory approach**, focusing on **voluntary compliance** and **partnership between government and businesses**.
5. Enforces **strict penalties only for serious violations** like fraud or safety risks.
6. Simplifies compliance by **reducing bureaucratic red tape** and encouraging **self-declaration and transparency**.
7. Aligns with **India's vision of minimum government, maximum governance** and supports the **Viksit Bharat 2047** mission.

Advancing SC/ST Welfare in India

Recent Context:

The Ministry of Social Justice and Empowerment held the **28th Coordination Committee meeting** focusing on strategies to curb **untouchability offences** and **atrocities against Scheduled Castes (SCs) and Scheduled Tribes (STs)**, emphasizing better implementation of the **Protection of Civil Rights Act, 1955** and **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989**.

About SCs and STs Welfare:

Constitutional Recognition: SCs – Art. 341; STs – Art. 342; defined under Art. 366 and notified by President.

Legal Protections:

- Protection of Civil Rights Act, 1955
- SC/ST (Prevention of Atrocities) Act, 1989 & 2015 (sexual offences included)
- Prohibition of Employment as Manual Scavengers Act, 2013

Fundamental Rights & DPSP: Arts. 14–17 (equality, no untouchability), Art. 46 (education/economic promotion), Art. 338 (National SC Commission)

Challenges:

- High poverty (34% SCs BPL)
- Social prejudice & regional concentration of atrocities
- Weak enforcement: limited special courts & police stations
- Poor implementation of welfare schemes (NAMASTE, PM Adi Adarsh Gram Yojana)

Political & Social Dynamics:

- Rise in SC political influence post **73rd and 74th CAA** has caused tension with dominant castes.
- Rejection of traditional roles historically performed by SCs has intensified conflicts.

Goa as fully functionally literate state

Recent Context :

Goa has been declared **fully functionally literate** under the Ministry of Education's **ULLAS–Nav Bharat Saaksharta Karyakram**, surpassing the **95% functional literacy benchmark**. Earlier, **Mizoram** and **Ladakh** achieved this milestone.

About Functional Literacy & ULLAS Programme (7 Points):

1. **Functional Literacy:** Ability to apply **reading, writing, and numeracy** skills in daily life for personal growth and community participation.
2. **ULLAS Scheme:** Centrally sponsored (2022–2027), aimed at adults **15+ years** who missed formal schooling; aligns with **NEP 2020** vision of *Education for All*.



3. **Target: Achieve Foundational Literacy & Numeracy (FLN) for 5 crore learners (1 crore/year) during FY 2022–27.**

4. **Five Components: Foundational Literacy & Numeracy, Critical Life Skills, Basic Education, Vocational Skills, Continuing Education.**
5. **Implementation: Volunteer-based** in hybrid (online & offline) mode; uses **DIKSHA platform & ULLAS portal in 22 Indian languages**; includes **FLNAT** twice a year for certification.
6. **Goa's Literacy: 93.60% literacy rate (PLFS 2023–24)**; state survey confirmed **>95% functional literacy.**
7. **Goa Facts:** Capital **Panaji**, liberated from Portugal in **1961** via *Operation Vijay*; **Goa Liberation Day** – 19 Dec; attained **statehood** – 30 May 1987.

Regulation under Article 240 & Ladakh's Demand for 6th Schedule

Recent Context :

The Centre issued regulations under Article 240 for



Ladakh, introducing domicile-based reservations and cultural protections, but **did not grant Sixth Schedule status** despite strong local demands post-Article 370 abrogation.

About :

1. **Article 240:** Empowers the **President** to make regulations for certain UTs (**Andaman & Nicobar, Lakshadweep, Dadra & Nagar Haveli & Daman & Diu, Chandigarh, Ladakh**), having the **force of Parliamentary law.**
2. **Ladakh's Demands:** Inclusion in the **Sixth Schedule**, **land ownership restrictions**, creation of a **Legislative Assembly**, and

cultural identity safeguards via Leh Apex Body & Kargil Democratic Alliance.

3. **Key Regulation – Domicile-Based Job Reservation:**
 - **15 years residency** or **7 years education + Class 10/12 from Ladakh** criteria.
 - **85% total quota** for SC, ST, OBC & socially backward classes; **10% EWS** remains.
4. **Education & Professional Seats:** Domicile rules extended to **medical and engineering colleges** for local student benefit.
5. **Language Preservation:** **English, Hindi, Urdu, Bhoti, Purgi** – official languages; **Shina, Brokskat, Balti, Ladakhi** – promoted for cultural preservation.
6. **Women's Representation:** **1/3rd reservation** in **Ladakh Autonomous Hill Development Councils (Leh & Kargil)** via amendment to **LAHDC Act, 1997.**
7. **Why 6th Schedule?:** Provides **constitutional protection, Autonomous District Councils** with powers over **land, forests, culture, education**, unlike Article 240 regulations that can be amended/revoked by the Centre.

DPDP Act, 2023 and DPDP Rules, 2025

Recent Context

The **Ministry of Electronics and IT** sought public feedback on **Draft DPDP Rules, 2025** to operationalize the **Digital Personal Data Protection Act, 2023**, India's **first comprehensive digital privacy law.**

About

1. **Enactment & Purpose – DPDP Act, 2023** protects **digital personal data**, balancing **individual privacy** and **lawful processing**, inspired by the **2017 Puttaswamy judgment** and global models like the **EU's GDPR.**
2. **Scope** – Applies to **digital personal data** processed in India or abroad for offering goods/services in India; excludes personal use or legally public data.
3. **Consent & Minors** – Requires **lawful consent** from Data Principals; **verifiable parental**

consent for those **under 18 years**; bans harmful processing and targeted ads to children.

4. **Rights & Duties** – Grants rights to **access, correct, delete** data and seek grievance redressal; imposes duties to avoid false information, with fines up to **₹10,000** for violations.
5. **Obligations on Entities** – Data Fiduciaries must ensure **accuracy, security**, breach reporting, and **data erasure** after purpose completion; **Significant Data Fiduciaries** face extra compliance like appointing a **Data Protection Officer**.
6. **Draft Rules 2025 Highlights** – Allow **certain cross-border transfers, 3-year retention limit, digital-first grievance redressal**, graded compliance for startups/MSMEs, and mandatory **₹2 crore net worth** for consent managers.

Zonal Councils

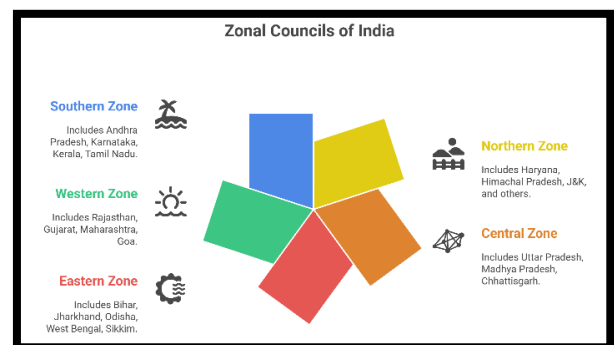
RECENT CONTEXT

The **25th Central Zonal Council** meeting, chaired by the **Union Home Minister**, was held in **Varanasi**, focusing on **Centre–State cooperation** and resolving inter-state issues under the **States Reorganisation Act, 1956**.

ABOUT

1. **Nature & Establishment** – **Statutory bodies** under **Sections 15–22 of the States Reorganisation Act, 1956**; proposed by **Jawaharlal Nehru** to promote **cooperative federalism** and address inter-state matters.
2. **Number & Coverage** – **Five Zonal Councils**:
 - **Northern** – Haryana, Himachal Pradesh, J&K, Punjab, Rajasthan, Delhi, Chandigarh
 - **Central** – Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Uttarakhand
 - **Eastern** – Bihar, Jharkhand, Odisha, West Bengal, Sikkim
 - **Western** – Rajasthan, Gujarat, Maharashtra, Goa, Dadra & Nagar Haveli, Daman & Diu

- **Southern** – Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Puducherry
3. **Special Case** – **North Eastern Council (NEC)** is separate, created under the **NEC Act, 1972**.
 4. **Organisational Structure** –
 - **Chairman**: Union Home Minister (also ex-officio NEC Chairman)
 - **Vice-Chairman**: Chief Minister of a member state (rotating annually)



- **Members**: CMs, LGs/Administrators, 2 ministers from each state (nominated by Governor)
 - **Advisors**: NITI Aayog nominee, Chief Secretaries, Development Commissioners
5. **Functioning Mechanism** – **Permanent Committee** of Chief Secretaries first discusses issues; unresolved matters go to the full council.
 6. **Objectives & Functions** – Serve as **high-level advisory forums** for inter-state and Centre–State coordination; discuss law & order, infrastructure, economic development, and social sector schemes.

Alcohol Regulation in India

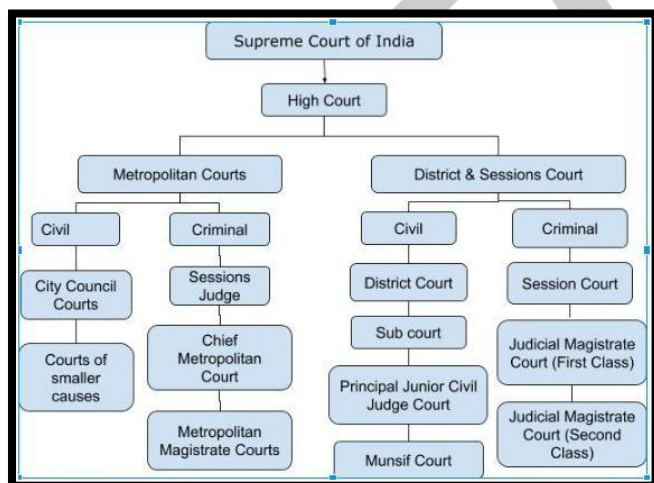
RECENT CONTEXT

India's **alcohol consumption** is rising, with **16 crore users** (NFHS-5), causing significant **health, social, and economic costs**, prompting calls for a **National Alcohol Control Policy** to unify fragmented State regulations.

ABOUT

- Prevalence & Impact:** 14.6% (age 10–75) consume alcohol; high heavy episodic drinking; societal cost ₹6.24 trillion (2021); 2.6M DALYs lost.
- High-Use States:** Chhattisgarh, Tripura, Punjab, Arunachal Pradesh, Goa; highest disorder prevalence (>10%) in Tripura, AP, Punjab, Chhattisgarh, Arunachal.
- Driving Factors:** Genetic predisposition, stress, peer pressure, media glamorisation, surrogate ads, influencer marketing, flavoured drinks, easy availability, policy gaps.
- State Regulation:** Alcohol in State List; prohibition in Bihar, Gujarat, Nagaland, Mizoram; legal age 18–25; online delivery emerging.
- National Regulation:** Article 47 DPSP; Excise Act 1944; Nasha Mukta Bharat Abhiyan; National Mental Health Policy 2014; National Health Policy 2017; National Suicide Prevention Strategy 2022.
- Challenges:** Fragmented policies, revenue dependency, regulatory evasion, illicit trade-political nexus, low health awareness.
- Policy Need:** Comprehensive **National Alcohol Control Policy** aligned with **WHO Global Alcohol Strategy**.

Reforming Subordinate Judiciary



RECENT CONTEXT -India's subordinate judiciary, handling 87.5% of cases, faces 5,388 vacancies, 4.5 crore pending cases, and outdated systems, causing 0.5% GDP loss annually and hurting investment, business confidence, and economic growth.

ABOUT

- Economic Impact of Backlogs** –
 - 4.5 crore pending cases in district courts cause ₹1.5 trillion (0.5% GDP) annual loss.
 - World Bank:** Cutting vacancies from 25% to 15% boosts business confidence.
 - IMF:** Efficient courts could raise GDP per capita growth by 0.28%.
- Business & Fiscal Costs** – Land and contract disputes lock resources, deter MSMEs, weaken tax compliance, and push businesses to the informal economy.
- Key Challenges** –
 - Judicial Vacancies** – Judges handle 746 cases/year vs global best of 200–300.
 - Outdated Systems** – Limited e-Court use, hybrid filing, poor rural accessibility.
 - Recruitment Flaws** – 3-year practice rule limits women's entry (only 15% lawyers are women).
 - Digital Divide** – Risks excluding rural & less-educated litigants.
- Constitutional Basis** –
 - Articles 233–237 (Part VI)** – Organisation & independence of subordinate courts.
 - Article 233** – District Judges appointed by Governor in consultation with High Court.
- Structure** –
 - District & Sessions Court** – Highest district-level authority, can award death penalty (needs HC confirmation).
 - Civil & Criminal Courts** – Pecuniary jurisdiction varies; CJM can give up to 7 years imprisonment.
 - Special Courts** – Metropolitan, small causes, and panchayat courts for local disputes.
- Recruitment & Eligibility** – District Judge: Must be advocate/pleader for 7 years, not in

govt service, recommended by High Court; lower judges appointed via **State PSC** & High Court consultation.

Promoting Foreign Universities in India

Recent Context:

Encouraged by the *National Education Policy (NEP) 2020* and *UGC (FHEI) Regulations, 2023*, foreign universities are entering India, aiming to boost global academic integration while raising concerns over equity, affordability, and alignment with national priorities.

About:

- Regulatory Framework:** UGC (Setting up and Operation of Campuses of Foreign Higher Educational Institutions in India) Regulations, 2023 allow top foreign universities to establish campuses in India.
- National Education Policy 2020:** Recommends opening doors to world-class foreign institutions to promote global exposure and research collaborations.
- Eligibility Criteria:** Only universities ranked among the top 500 globally are permitted to set up campuses.
- Global Trend Drivers:** Declining domestic enrolments and funding in countries like UK, Australia, Canada push them to explore new markets like India.
- India's Demographic Advantage:** Over 50% population under 30, GER <30%, English proficiency, and rising aspirations for international education.
- Potential Benefits:** Reduced brain drain, forex savings, enhanced research output, better industry-linked courses, and positioning India as an education hub.
- Challenges:** Risk of high tuition fees, limited immediate GER impact, quality dilution without regulation, and need for cultural adaptation in curricula.

PM-WANI Scheme

Recent Context:

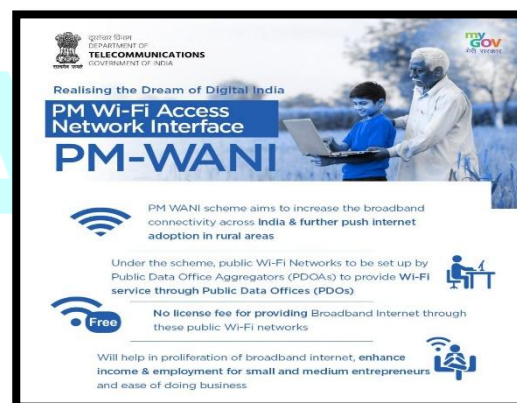
TRAI has capped tariffs charged by ISPs/TSPs to Public Data Offices (PDOs) under PM-WANI at no more than twice the retail broadband tariff (for plans up to 200 Mbps) to ensure affordable public Wi-Fi.

About:

- Full Form:** PM-WANI stands for *Prime Minister's Wi-Fi Access Network Interface*,

launched in 2020 by the Department of Telecommunications.

- Objective:** Expand affordable public Wi-Fi hotspots, especially in rural and underserved areas, to boost digital inclusion and entrepreneurship.
- Ecosystem Stakeholders:**
 - PDO:** Sets up Wi-Fi hotspots.
 - PDOA:** Handles authentication/accounting.
 - App Provider:** Lists hotspots for users.
 - Central Registry:** Managed by C-DoT.
- Access Mechanism:** Users connect via the PM-WANI app, select a hotspot, and pay digitally.
- Licensing Policy:** No licence or registration fee for PDOs, encouraging small vendors like shopkeepers and tea stall owners to participate.
- Key Benefits:** Reduces urban-rural digital divide, supports Digital India, generates local employment, and enables services in education, health, and governance.



- Supporting Initiatives:** Linked with *National Broadband Mission* and *Gati Shakti Sanchar Portal* for improved last-mile broadband infrastructure.

SOURCE – INSIGHTS

Bar Council of India Decision to Allow Foreign Lawyers

RECENT CONTEXT

CJI B.R. Gavai lauded the **Bar Council of India (BCI)** for amending its **2022 rules** to allow **foreign lawyers and firms** to practice **international law** and **arbitration** in India.

ABOUT - BCI Amendment (2024): Foreign lawyers/firms can practice foreign & international law

and arbitration in India; cannot appear in Indian courts or practice Indian law.

1. **Legal Basis:** Amendment of BCI Rules 2022 under Advocates Act, 1961; preserves ban on practicing Indian law.
2. **Rationale:** India 5th in global arbitration cases (ICC 2024); expanding MCIA, DIAC, IIAC; fills gaps in niche areas like climate, tech, and commercial law.
3. **Challenges:** Job protectionism for Indian lawyers, reciprocity issues abroad, foreign firms' resource advantage, need to monitor non-litigious compliance.
4. **Significance:** Positions India as global arbitration hub, promotes bilateral cooperation, adoption of global best practices & legal tech.
5. **Sovereignty Safeguards:** Indian law remains exclusive to Indian advocates; Advocates Act integrity maintained.
6. **Opportunities:** Indian lawyers can register abroad under reciprocity without losing Indian practice rights; fosters cross-border careers.

REGISTERED UNRECOGNISED POLITICAL PARTIES (RUPPS)

RECENT CONTEXT

The **Election Commission of India (ECI)** has begun delisting **345 Registered Unrecognised Political Parties (RUPPs)** under **Section 29A of RPA, 1951** for being inactive since 2019 and physically untraceable.

ABOUT

1. **Definition:** Registered under Sec 29A, RPA 1951; not recognised as State/National party.
2. **Privileges:** IT Act Sec 13A tax exemption; eligible for donations without contesting elections.
3. **Scale:** 2,800+ in 2025; doubled from 1,112 (2010) to 2,301 (2019); 97% of parties unrecognised.
4. **Recognition – State Party:** Any one—6% votes + 2 Assembly seats; 6% votes + 1 LS seat; 3% Assembly seats (min 3); 1 in 25 LS seats; 8% votes in state.
5. **Recognition – National Party:** Any one—6% votes in 4 states + 4 LS seats; 2% LS seats (min 11) from 3 states; recognised State Party in 4+ states.
6. **Issues:** Dormant since 2019, opaque funding (<5% filed donation reports 2013–16), tax misuse, no verifiable presence.

7. **Reforms:** Delist dormant parties, stricter registration & disclosures, PPRTMS tracking, regular audits with public reports on State CEO websites.

INCLUSIVE EDUCATION FOR CHILDREN WITH DISABILITIES

RECENT CONTEXT

The **Centre** signed a **tripartite MoU** between **DEPwD, NIOS, and NCERT (2025)** to strengthen **inclusive education** for children with disabilities through **curriculum reform, accessibility, and recognition of DDRS-run schools** as SAIEDs.

ABOUT

1. **Definition** – Inclusive education means **children with and without disabilities** learn together in the **same environment**, with adapted curricula & teaching methods — mandated under **RPWD Act, 2016**.
Key Data – Status: 1.7% children (0–19 yrs) disabled; 0.98% in primary schools; 21 lakh under *Samagra Shiksha*; 27,774 special teachers.
- **Need:** RTE (Art. 21A), CRPD 2007, SDG 4, NEP 2020; reduce stigma, build human capital.
- **Initiatives:** MoU (2025) DEPwD–NIOS–NCERT; NEP 2020 inclusion; *Samagra Shiksha* grants/stipends; NCERT *Barkha Series*.
- **Challenges:** Data gaps, poor infrastructure, teacher shortage, low enrolment, social stigma.
- **Significance:** Ensures equality, dignity & inclusive growth.

Bureau of Civil Aviation Security (BCAS)

RECENT CONTEXT

The **Bureau of Civil Aviation Security (BCAS)** cancelled **Celebi Aviation's** license citing **national security concerns**, following Turkey's support for Pakistan after **Operation Sindoor**, under **Aircraft Rules, 1937** and **Aircraft Security Rules, 2022**.

ABOUT

1. **BCAS:** National civil aviation security regulator, HQ Delhi, headed by DGP-rank officer; independent under MoCA since 1987.

2. **Legal Powers:** DG, BCAS can grant, suspend, or cancel security clearance under Aircraft Rules 1937 & Aircraft Security Rules 2022.
3. **Functions:** Sets security standards per ICAO Annex 17, conducts checks, drills, and oversees airport security training.
4. **ICAO & Chicago Convention (1944):** UN aviation regulator; defines airspace sovereignty, aircraft registration, 5 freedoms of the air; HQ Montreal; India a founding member.
5. **Key Aviation Initiatives:** National Civil Aviation Policy 2016, UDAN, 100% FDI in aviation sectors, Digi Yatra, NABH Nirman, green airports & carbon accreditation.
6. **India's Aviation Status (2024-25):** 3rd-largest domestic market, 69% of South Asia's traffic, 196.91M passengers, GDP contribution 1.5%, direct employment 3.69 lakh.
7. **Airport Expansion:** Operational airports 74 → 157 (2014–2024); target 350–400 by 2047

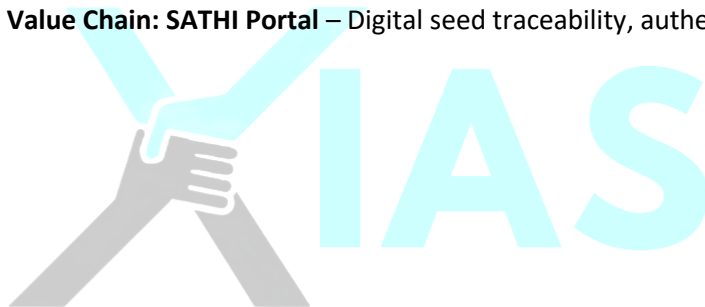




TOPICS COVERED-

- **Foreign Portfolio Investor (FPI)** – Investment by non-residents in Indian securities without management control.
- **Anti-Dumping Duty** – Tariff imposed on imports sold below fair market value to protect domestic industries.
- **World Wealth Report 2025** – Annual report highlighting global and Indian high-net-worth individuals (HNWIs) trends.
- **Monetary Policy Committee (MPC)** – RBI body that sets policy rates to achieve the inflation target.
- **Special Economic Zones (SEZs)** – Duty-free enclaves to promote exports and investment with eased regulations.
- **India's FDI Inflows (FY 2024–25)** – Foreign direct investment into India, highlighting top states and sectoral trends.
- **Financial Stability and Development Council (FSDC)** – Inter-regulatory body to maintain financial stability and coordination.
- **National Investment and Infrastructure Fund (NIIF)** – Sovereign-linked fund to enhance infrastructure financing in India.
- **SCORES Portal** – SEBI's online platform for investor grievance redressal and complaint tracking.
- **Front Running** – Illegal use of non-public information to trade securities ahead of large orders.
- **Reverse Flipping** – Process of foreign-domiciled startups shifting their legal base back to India.
- **Cotton Corporation of India (CCI)** – Government agency ensuring MSP procurement and cotton market stability.
- **India's Fiscal Balancing Amid Global Economic Uncertainties** – Efforts to manage fiscal deficit, debt, and expenditure sustainably.
- **RBI Transfers Surplus to Government** – RBI surplus dividend transfer under Economic Capital Framework supporting fiscal health.
- **India's WPI Inflation Falls to 13-Month Low** – Wholesale price inflation declining due to lower fuel and commodity prices.
- **First Monthly Periodic Labour Force Survey (PLFS)** – Detailed monthly labour and employment statistics including rural data.
- **India's Net FDI Drops by 96.5%** – Sharp fall in net foreign investment due to repatriation and IPO disinvestments.
- **World Investment Report 2025** – UNCTAD report highlighting global FDI trends and investment in digital and sustainable sectors.
- **India's Textile and Apparel Industry** – Overview of sector contribution, global trade share, and government support schemes.
- **Predatory Pricing** – Selling below production cost to eliminate competitors, regulated under Competition Act.
- **Microfinance in India** – Small loans to low-income households for financial inclusion and entrepreneurship.
- **Skills for the Future Report – India** – Highlights workforce skill gaps and recommendations for Industry 4.0 readiness.
- **Sustainable Development Report (SDR) 2025 – India** – India's SDG progress, ranking, and challenges globally.
- **Depot Darpan Portal, Anna Mitra App, and Anna Sahayata Platform** – Digital initiatives improving PDS transparency and grievance redressal.

- **World Energy Investment Report** – Global and India-specific investments in fossil fuels and clean energy.
- **19th Statistics Day & Contribution of P.C. Mahalanobis** – Celebration of statistics' role and Mahalanobis' contributions to planning and surveys.
- **Achieving Self-Sufficiency in Pulses** – India's efforts to boost domestic pulse production and reduce imports.
- **RoDTEP Scheme for Exporters Restored** – Refund scheme for embedded duties to improve export competitiveness.
- **Gaps in India's Irrigation System** – Issues in coverage, efficiency, and reliance on groundwater.
- **Agri Photovoltaics (APVs) to Boost Farmers' Income** – Combining solar energy and crop cultivation for dual income.
- **Rural India: The New Engine of India's Consumer Market** – Rising rural incomes and consumption driving economic growth.
- **Atal Mission for Rejuvenation and Urban Transformation (AMRUT)** – Urban infrastructure improvement scheme with focus on water and sewerage.
- **Modified Interest Subvention Scheme (MISS)** – Short-term affordable credit for farmers via Kisan Credit Card.
- **Kisan Credit Card (KCC)** – Credit facility for farmers' cultivation, allied activities, and household needs.
- **Wind Energy in India** – Expansion of wind power capacity to meet renewable energy targets.
- **India Meets Peak Power Demand of 241 GW** – Power sector milestone achieving surplus capacity and robust grid.
- **Centre Hikes Fair and Remunerative Price (FRP) for Sugarcane** – Minimum price for sugarcane to ensure timely farmer payments.
- **Digitalising India's Seed Value Chain: SATHI Portal** – Digital seed traceability, authentication, and subsidy linkage for farmers.



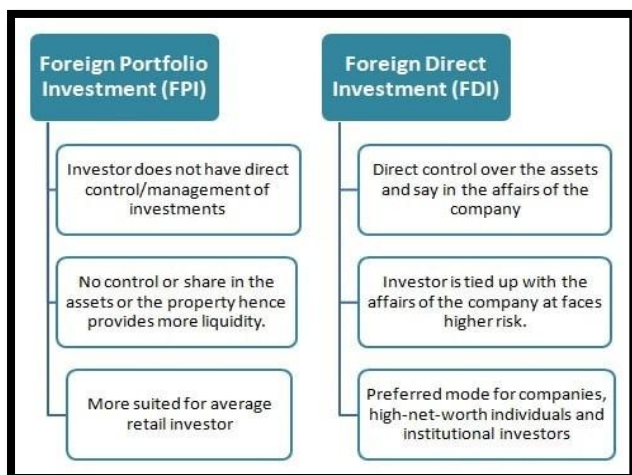
ECONOMY

SOURCE: THE HINDU

Foreign Portfolio Investor (FPI)

RECENT CONTEXT

In **2024**, the **RBI** issued a new operational framework for **reclassification of FPI to FDI**, guided by **FEMA Non-Debt Instruments Regulations, 2019**, to streamline compliance and reporting.



ABOUT

- Definition** – FPI refers to **investment by non-residents** in Indian securities without a controlling stake; includes **stocks, ADRs, GDRs, bonds, mutual funds, ETFs**.
- Nature** – Forms part of the **Capital Account** in the **Balance of Payments**; **more liquid, volatile, and riskier** than FDI; often termed **“Hot Money”**.
- Governance** – Primarily regulated by **SEBI**; must comply with **FEMA 1999** and the **Income-tax Act, 1961**.
- Categories** – Includes **Foreign Institutional Investors (FIIs)** and **Qualified Foreign Investors (QFIs)**, registered under **SEBI (FPI) Regulations, 2019**.
- Operational Framework (2024)** – RBI introduced rules for reclassification from FPI to FDI; based on **FEMA Mode of Payment & Reporting of Non-Debt Instruments Regulations, 2019**.
- Difference from FDI** –
 - FPI**: No control, short-term, portfolio-based.

- FDI**: Long-term, management influence, physical presence.

- Risk & Liquidity** – FPI inflows are highly sensitive to market sentiment, currency fluctuations, and global interest rate changes, making them **quick to enter and exit**.

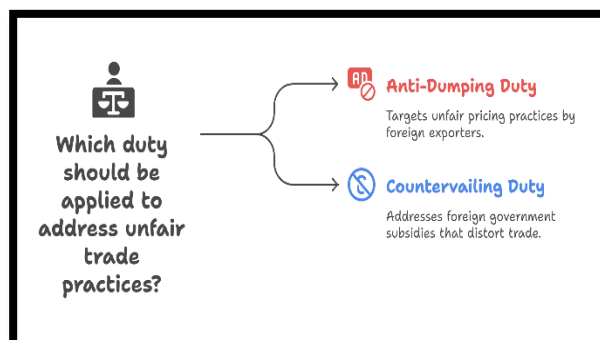
Anti-Dumping Duty

RECENT CONTEXT

India continues to impose **anti-dumping duties** on certain imported goods to protect domestic industries from unfair pricing practices by foreign exporters, with administration by the **DGTR**.

ABOUT

- Definition** – A **protectionist tariff** imposed on foreign imports priced **below fair market value**, aimed at safeguarding domestic industries from **unfair competition**.
- Dumping** – Occurs when a company exports goods at a **significantly lower price** than in its home market.
- Administering Authority in India** – **Directorate General of Trade Remedies (DGTR)** under the Ministry of Commerce.
- Legal Basis (Global)** – Permitted under **Article VI of the General Agreement on Tariffs and Trade (GATT) 1994**.
- WTO Rules** – Anti-dumping measures must follow the **WTO Anti-Dumping Agreement**, requiring proof of injury to domestic industry.
- Relation to MFN Principle** – Anti-dumping duties are **exceptions** to the **Most Favoured Nation (MFN) status** under WTO rules.



World Wealth Report 2025

RECENT CONTEXT

The **World Wealth Report 2025**, released by the **Capgemini Research Institute**, highlights a **2.6% rise**

in global high-net-worth individuals (HNWIs) in 2024, with **India's HNWI wealth** growing by **8.8%**.

ABOUT

1. **Publisher** – Released annually by the **Capgemini Research Institute**.
2. **Coverage** – Analyzes **71 countries**, representing **98% of global GNI** and **99% of world stock market capitalization**.
3. **Definition of HNWI** – Individuals with **investable assets of USD 1 million or more**, excluding primary residence, collectibles, consumables, and consumer durables.
4. **Global Trend 2024** – HNWI population grew by **2.6%**, reversing declines from previous years.
5. **India's Performance** – HNWI wealth in India rose by **8.8%**, driven by strong stock market performance and economic growth.
6. **Top Contributor** – **USA** added the largest number of millionaires in 2024.
7. **Significance** – Used by policymakers, financial institutions, and investors to assess **global wealth distribution, investment trends, and market potential**.

Monetary Policy Committee (MPC)

RECENT CONTEXT

The **Monetary Policy Committee** recently met under **Section 45ZB of the RBI Act, 1934** to decide the **policy repo rate** in line with India's inflation-targeting framework.

ABOUT

1. **Legal Basis** – Provided under **Section 45ZB** of the amended **RBI Act, 1934**.
2. **Composition** – **6 members**: 3 from RBI (including Governor) and 3 appointed by the Central Government.
3. **First Constitution** – The first MPC was set up in **2016**.
4. **Mandate** – Decides the **policy interest rate (repo rate)** to meet the **inflation target** set by the Government (currently $4\% \pm 2\%$).
5. **Meetings & Quorum** – Must meet **at least 4 times a year**; **quorum** is 4 members.

6. **Voting** – Each member has **one vote**; RBI Governor has a **casting vote** in case of a tie.
7. **Transparency** – MPC's resolution is **published after every meeting** as per the RBI Act.

Special Economic Zones (SEZs)

RECENT CONTEXT

The **Ministry of Commerce and Industry** notified the **Special Economic Zones (Amendment) Rules, 2025**, reducing the **minimum land requirement** for SEZs exclusively for **semiconductors/electronics** from **50 hectares** to **10 hectares**.

ABOUT

1. **Policy & Legal Framework** – SEZ Policy announced in **2000**, **SEZ Act** enacted in **2005**.
2. **Definition** – A **duty-free enclave** deemed to be **foreign territory** for trade operations, duties, and tariffs.
3. **Eligibility for Setup** – Can be established by **private, public, joint sector, or State Government agencies**.
4. **Global Presence** – Found in several countries including **China, India, Jordan, Poland, Kazakhstan, Philippines, Russia**.
5. **Types of Zones** – Includes **Export Processing Zones (EPZs), Free Zones (FZ), Industrial Estates (IE), Free Trade Zones (FTZ), Free Ports, and Urban Enterprise Zones**.
6. **Historical Fact** – Asia's first EPZ was set up in **1965 at Kandla, Gujarat**.
7. **2025 Amendment** – New rules specify **10 hectares** minimum for **semiconductor/electronics-only SEZs**.

India's FDI Inflows (FY 2024–25)

RECENT CONTEXT

Foreign Direct Investment (FDI) inflows into India grew **14%** in FY 2024–25 — the **highest in 3 years** — with **Maharashtra** topping the list at **\$19.6 billion** (31% share).

ABOUT

1. **Definition** – Cross-border investment where foreign entities **invest in and control** business operations in another country.

- Economic Role** – Acts as a **key non-debt financial resource** for India's economic development.
- Regulation** – Overseen by **DPIIT** under **automatic** and **government approval** routes.
- FY 2024–25 Growth** – **14% increase** in total inflows, marking the highest growth in **three years**.
- Top State** – **Maharashtra** led with **\$19.6 billion (31%** of total FDI).
- Other Major States** – **Karnataka** at **\$6.62 billion (20%)**, **Gujarat** share rose from **6% to 11%**, **Tamil Nadu** fell from **11% to 7%**.
- Delhi's Decline** – Share dropped from **32% in 2015–16** to **12% in 2024–25**.

Financial Stability and Development Council (FSDC)

RECENT CONTEXT

The **Finance Minister** recently chaired the **29th meeting** of the **Financial Stability and Development Council (FSDC)** to review the country's financial sector health and coordination among regulators.

ABOUT

- Establishment** – Constituted in **2010** based on recommendations of the **Raghuram Rajan Committee (2008)** on financial sector reforms.
- Legal Status** – **Not a statutory body**.
- Objective** – Maintain **financial stability**, enhance **inter-regulatory coordination**, and promote **financial sector development**.
- Funding** – No separate budgetary allocation; functions within existing institutional frameworks.
- Composition** – Chaired by the **Union Finance Minister**, members include **RBI Governor**, **Finance Secretary**, **Secretary of Financial Services**, **Chief Economic Adviser**, and Chairpersons of **SEBI**, **IRDAI**, **PFRDA**.
- Sub-Committee** – Headed by the **RBI Governor** to deal with operational issues.
- Additional Provision** – Can invite **experts** to its meetings when required.

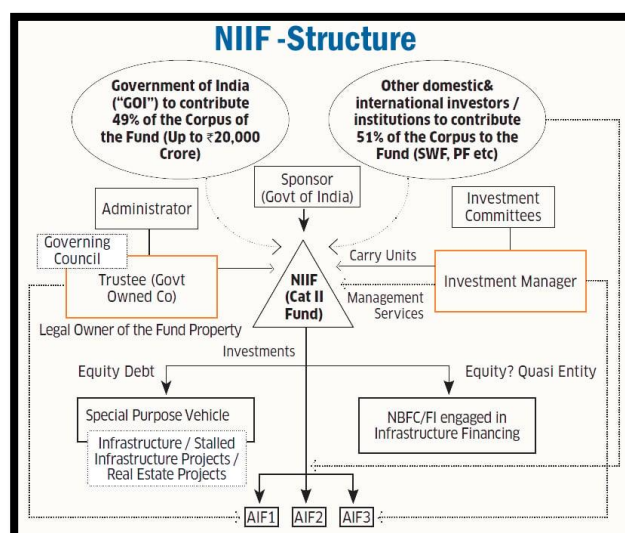
National Investment and Infrastructure Fund (NIIF)

RECENT CONTEXT

The **Union Finance Minister** recently chaired the **6th meeting** of the **Governing Council** of the **National Investment and Infrastructure Fund (NIIF)** to review infrastructure investment strategies.

ABOUT

- Establishment** – Set up in **2015** as **India's first-ever sovereign wealth fund (SWF)**.
- Structure** – A **Sovereign-linked Alternative Asset Manager** with the **Government of India holding 49%** equity.
- Objective** – Invest mainly in **equity and equity-linked instruments** to enhance infrastructure financing.
- Investment Scope** – Targets **greenfield (new)**, **brownfield (existing)**, and **stalled projects**.
- Collaborative Platform** – Anchored by **GoI**; brings together **international and Indian investors** for large-scale projects.
- Funds under NIIF** –
 - Master Fund** (core infrastructure)
 - Fund of Funds** (invests in other funds)
 - Strategic Opportunities Fund** (growth equity investments).
- Regulation** – Funds are registered as **Alternative Investment Funds (AIF)** with **SEBI**.



SCORES Portal

RECENT CONTEXT

The **Securities and Exchange Board of India (SEBI)** recently upgraded the **SCORES Portal** to **SCORES 2.0**,

introducing **automatic complaint forwarding** and a **21-day Action Taken Report (ATR) deadline**.

ABOUT

1. **Launch** – Introduced in **2011** by **SEBI** as an **online grievance redressal platform**.
2. **Objective** – To enable **investors** to **file and track complaints** against **listed entities** and **SEBI-registered market intermediaries**.
3. **Coverage** – Complaints can be lodged under the **SEBI Act, Securities Contract Regulation Act, Depositories Act**, and relevant provisions of the **Companies Act, 2013**.
4. **Functionality** – Allows market intermediaries and listed companies to **receive, resolve, and report** complaints entirely **online**.
5. **Upgraded Version** – **SCORES 2.0** automatically forwards complaints to concerned entities.
6. **Timeline for Resolution** – Entities must submit an **Action Taken Report (ATR)** within **21 days**.
7. **Transparency** – Complainants can **track the status** of their grievance in **real time** through the portal.

Front Running

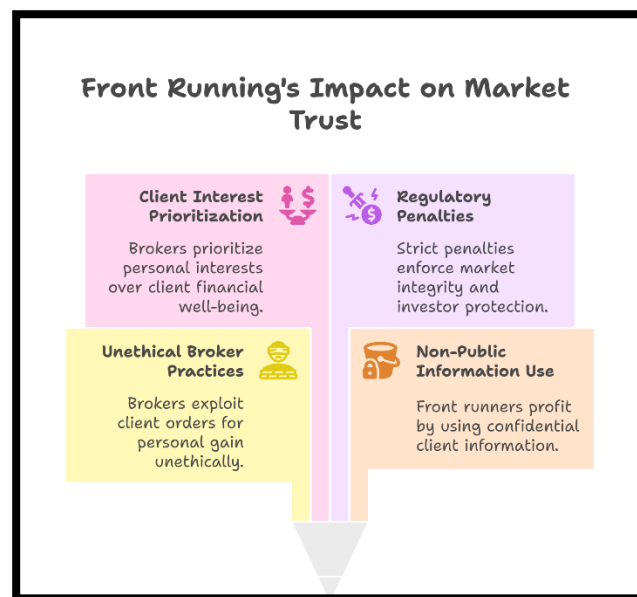
RECENT CONTEXT

The **Securities and Exchange Board of India (SEBI)** continues strict enforcement against **front running**, with regulatory amendments in **2022** to **SEBI (Mutual Funds) Regulations, 1996** to counter such practices.

ABOUT

1. **Definition** – Use of **non-public information** to buy/sell securities or enter derivatives **before a substantial order** is executed.
2. **Regulation** – Governed and prohibited under **SEBI** regulations.
3. **Legality** – **Illegal** in India.
4. **Scope** – Includes **options, futures, and equity trades** executed with advance knowledge.
5. **Impact** – Leads to **market manipulation** and **unfair advantage** over ordinary investors.
6. **Amendment (2022)** – **SEBI (Mutual Funds) Regulations, 1996** updated to include specific anti-front running provisions.

7. **Penalty** – Violations can attract **monetary penalties** and **market bans**.



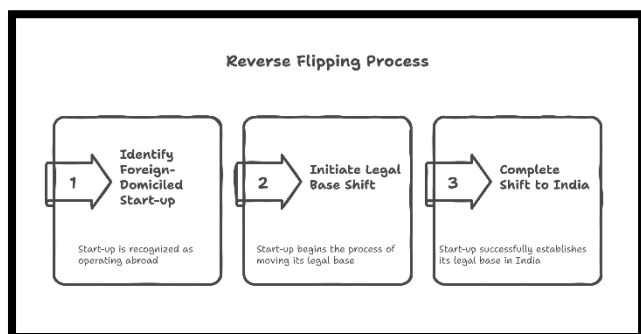
Reverse Flipping

RECENT CONTEXT

SEBI announced measures to **ease compliance** for companies in the **stock market ecosystem**, indirectly encouraging **reverse flipping** for foreign-domiciled start-ups.

ABOUT

1. **Definition** – Process of **foreign-domiciled start-ups** shifting their **legal base back to India**.
2. **Opposite of Flipping** – Flipping transfers Indian company ownership to a **foreign-incorporated entity**; reverse flipping does the opposite.
3. **Reasons** – To align with **domestic regulations**, **access Indian capital markets**, and reduce **tax complexities**.
4. **Structure 1 – Inbound Merger** – Foreign entity merges into its **Indian counterpart**.
5. **Structure 2 – Share Swap** – Foreign shareholders receive **shares in the Indian company** in exchange for their holdings.
6. **Benefits** – Better access to **domestic investors**, improved **regulatory environment**, and potential **valuation gains**.
7. **Trend** – Growing interest due to **India's expanding start-up ecosystem** and **government incentives**.



Cotton Corporation of India (CCI)

RECENT CONTEXT

Recently, CCI initiated large-scale **Minimum Support Price (MSP)** procurement operations due to a fall in **kapas** prices below MSP in several cotton-growing states.

ABOUT

- Establishment** – Set up in **1970** as a **Public Sector Undertaking** under the **Ministry of Textiles, Government of India**.
- Legal Status** – A Government of India **corporate agency** under the **Companies Act, 1956**.
- Governance** – Functions under the **Textile Policy, 1985** issued by the Ministry of Textiles.
- Core Role** – Undertakes **price support operations** without quantitative limits when **market prices** of kapas fall below **MSP**.
- Commercial Operations** – Purchases cotton to meet **raw material requirements** of the domestic textile industry, especially in the **lean season**.
- Trade & Export** – Engaged in **procurement, trading, and export** of cotton to ensure market stability.
- Related Institution** – **Central Institute for Cotton Research** established in **1976** under **ICAR**, HQ in **Nagpur, Maharashtra**.

SOURCE – INDIAN EXPRESS

India's Fiscal Balancing Amid Global Economic Uncertainties

Recent Context :

In Union Budget 2025, Centre announced lower market borrowings (₹14.13 lakh crore vs FY24 target)

due to buoyant GST collections, reflecting efforts to balance growth, welfare, and debt sustainability.

About:

- Fiscal Deficit** – Occurs when total expenditure > total revenue (excluding borrowings). Indicates government's dependence on borrowing.
- Debt-to-GDP Ratio** – Sustainability depends on whether GDP grows faster than debt accumulation.
- Revenue Sources** – Direct taxes (income, corporate), indirect taxes (GST, excise, customs), non-tax revenues (PSU profits, royalties, fees).
- Expenditure** – Salaries, pensions, subsidies, healthcare, infrastructure, and interest payments on borrowings.
- Borrowings FY25** – ₹14.13 lakh crore gross borrowings projected; reduction attributed to higher GST inflows.
- Risks of High Borrowing** – Crowding out private investment, higher interest costs, inflationary pressures, lower credit ratings.
- Productive Fiscal Deficit** – Spending on infrastructure, welfare, and emergencies can stimulate growth if within sustainable limits.

RBI Transfers Surplus to Government

Recent Context :

The **RBI** will transfer a record **₹2.68 lakh crore dividend** to the Union government for 2024–25 under the **Economic Capital Framework (ECF)**, raising the **Contingent Risk Buffer (CRB)** to 7.5%.

About:

- Economic Capital Framework (ECF)** – Decides RBI's **risk provisioning & surplus transfer**.
- Dividend Transfer (2025)** – ₹2.68 lakh crore, **27% higher** than 2023–24.
- Contingent Risk Buffer (CRB)** – Raised to **7.5%**, acts as RBI's **rainy-day fund**.
- Sources of RBI income** – Govt securities, forex assets, LAF operations, seigniorage, gold valuation.
- Bimal Jalan Committee (2019)** – Suggested CRB of **5.5–6.5%** of balance sheet.

6. **Surplus transfer** – Key part of **non-tax revenue** for government, helps fiscal deficit management.
7. **Impact** – Boosts **liquidity** and provides fiscal support to government.

India's WPI Inflation Falls to 13-Month Low

Recent Context :

India's **WPI inflation** fell to **0.85% in April 2025**, a **13-month low**, mainly due to a sharp decline in **fuel & power** and **primary articles** prices.

About:

1. **Wholesale Price Index (WPI)** – Tracks **inflation at wholesale level**; base year **2011–12**.
2. **Compiled by** – **Office of Economic Adviser**, Ministry of Commerce & Industry.
3. **WPI basket** – **Primary articles, fuel & power, manufactured products**.
4. **WPI Food Index** – Combines food items from **primary & manufactured products**.
5. **Comparison with CPI** – **WPI excludes services & indirect taxes**; **CPI includes both**.
6. **CPI targeted by RBI** – Inflation target **4% ± 2%** under **Monetary Policy Framework**.
7. **High weightage** – In WPI, **manufactured products** have the highest weight; in CPI, **food** has the highest.

First Monthly Periodic Labour Force Survey (PLFS)

Recent Context :

The **MoSPI** released India's **first monthly PLFS report (April 2025)**, providing **granular, rural-inclusive employment data**. **Unemployment rate** stood at **5.1%**, with urban UR higher than rural UR.

About:

1. **PLFS** – Launched **2017** by **NSO (MoSPI)**; replaced **NSSO's Employment–Unemployment Survey**.
2. **Reference Periods** – **Usual Status (365 days) & Current Weekly Status (7 days)**.
3. **First Monthly Release (April 2025)** – **Unemployment rate 5.1%**; urban higher than rural.
4. **LFPR** – **55.6%** (rural higher than urban).

5. **WPR** – **52.8%** overall (rural > urban).
6. **CWS Methodology** – A person is employed if worked **≥1 hour in last 7 days**.
7. **Significance** – Provides **frequent, dynamic labour market trends** for policymaking.

India's Net FDI Drops by 96.5%

Recent Context :

India's **net FDI** dropped by **96.5%** to **\$353 million in FY25**, lowest since 2014, due to high **repatriation, IPO disinvestments, and overseas investments** by Indian firms.

About:

1. **Net FDI** = (Gross inflows – Repatriation) – **FDI outflows abroad**.
2. **FY25 Net FDI** – Only **\$353 million** vs **\$10 billion in FY24**.
3. **Gross FDI inflows** – Concentrated in **manufacturing, financial services, energy, communications (>60%)**.
4. **Repatriation** – Foreign investors pulling profits back → reduces net inflows.
5. **Disinvestment via IPOs** – Major reason for outflow.
6. **FDI Outflows** – Indian companies investing abroad increased.
7. **Importance** – Net FDI decline impacts **BoP stability & foreign reserves management**.

SOURCE – INSIGHTS

World Investment Report 2025

Recent Context

Released by **UNCTAD**, the 2025 report shows **11% fall in global FDI**, strong **digital sector growth**, but **sharp decline in SDG investments** with uneven regional gains and losses.

7 Key Facts for UPSC Prelims

1. **Publisher** – **UNCTAD**; tracks global **FDI** and sustainable investment patterns.
2. **Global FDI** – Fell **11%** to **\$1.5 trillion** in 2024 (second consecutive decline).
3. **Digital Economy** – AI, data centres, semiconductors saw **FDI doubling**.
4. **SDG Investment Crisis** – Renewable energy, water, sanitation **FDI down 25–33%**.

- Regional Trends** – Africa (+75%), ASEAN (+10%); China (-29%), South America (-18%).
- India's Position** – \$28B inflows; in **top 5 greenfield hubs**; strong in EVs, semiconductors, digital infra.
- Key Recommendation** – Invest in **digital infrastructure**, expand **SDG financing**, and use **blended finance** for developing markets.

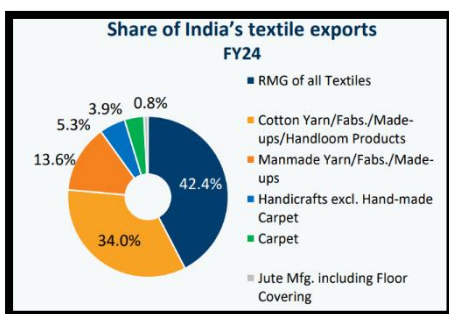
India's Textile and Apparel Industry

Recent Context

India's global apparel trade share remains stagnant at **3%**, prompting calls for policy innovation to meet the **\$40 billion export target by 2030**.

7 Key Facts for UPSC Prelims

- Contribution** – Employs **45 million**; contributes **2.3% of GDP** and **12% of manufacturing employment**.
- Global Share** – **4.2%** in total textile & apparel trade; **3%** in apparel alone.
- MSME Dominance** – Over **80%** of apparel units are small, fragmented, and lack global integration.
- Govt Schemes (Textiles)** – **PM MITRA Parks**, **Amended TUFs** for modernization.
- Govt Schemes (Apparel)** – **RoSCTL**, **SAMARTH**, **PLI Scheme** for MMF & technical textiles.
- Key Bottlenecks** – High capital costs (~9% interest), rigid labour laws, fragmented supply chain.
- Women-Centric Employment** – ~**70%** workforce in apparel hubs are women, aiding inclusive growth.



Predatory Pricing

Recent Context

On **May 6, 2025**, the CCI replaced 2009 cost rules with **ATC-based norms** to curb predatory pricing and

strengthen anti-monopoly enforcement under the **Competition Act, 2002**.

7 Key Facts for Prelims

- Definition** – Selling below production cost to drive out competitors and gain monopoly power.
- Example** – **NSE vs MCX case**: low-cost tactics used to push out rivals in stock exchange services.
- Core Features** – Prices below cost, short-term consumer benefit, long-term monopoly harm.
- Types** – Direct predation, cross-subsidisation, discriminatory pricing.
- Legal Provision** – Covered under **Section 4** of the Competition Act (abuse of dominant position).
- 2025 Reform** – **Average Total Cost (ATC)** as benchmark; ends vague “market value” metric; mandates expert involvement.
- Transparency & Monitoring** – CCI must record reasons for deviating from AVC; adds real-time market monitoring tools.

Microfinance in India

Recent Context

RBI Deputy Governor warned of a microfinance crisis as **gross loan portfolio fell 13.9%** and NPAs surged to **₹55,000 crore**, driven by defaults, over-indebtedness, and rising borrower distress.

7 Key Facts for Prelims

- Definition** – Small-ticket loans, savings, insurance for low-income households excluded from formal banking.
- Objective** – Financial inclusion, poverty alleviation, and entrepreneurship without collateral.
- History** – 1974: SEWA Bank (India's first MFI); 1976: Grameen Bank concept; 2010: Malegam Committee norms.
- Regulator** – **Reserve Bank of India** (NBFC-MFI regulations under RBI Act, 1934).
- crore; average loan size: ₹53,897; sharp fall in disbursals (-34% YoY).

- Key Challenges** – Over-indebtedness, high interest rates, coercive recoveries, weak credit appraisal, state policy uncertainty.
- Way Forward** – Risk profiling, regulated recovery code, interest rate ceiling, developmental finance focus, tech-based monitoring.

Skills for the Future Report – India

Recent Context

Union Minister launched the report highlighting **India's workforce crisis**: 88% in low-skill jobs, severe skill mismatch, low TVET penetration, regional disparities, and urgent need for Industry 4.0-ready talent.

Key Facts for Prelims

- Demographic & Economic Importance** – India's young population; 1% rise in tertiary GER → 0.511% GDP growth.
- Workforce Skill Distribution** – 88% in Skill Levels 1–2; only 10–12% in high-skill roles; 52.4% have primary education.
- Severe Skill Mismatch** – Only 8.25% graduates in matching roles; over 50% in lower-skill jobs.
- TVET Challenges** – Only 4.5% workforce formally trained; mostly limited to Skill Level 2; weak industry alignment.
- Income Inequality by Skill** – Skill 1 avg ₹98,835; Skill 4 avg ₹3.94 lakh; 46% earn <₹1 lakh/year.
- Regional & Sectoral Gaps** – Bihar/Assam: 95% low-skill; top sectors for vocational enrolment: Electronics, IT/ITeS, Textiles, Healthcare, Beauty.
- Recommendations** – Skill gap surveys, Central Skill Data Repository, TVET-curriculum overhaul, higher education expansion, inclusive & sector-specific skilling programs.

Sustainable Development Report (SDR) 2025 – India

Recent Context

India ranked **99th globally** in SDR 2025, entering the **top 100 for the first time**. The report focuses on **financing SDGs by 2030** and reforming the **Global Financial Architecture (GFA)**.

Key Highlights – Global

- Top Rankers**: Finland (1), Sweden (2), Denmark (3).
- Global Commitment**: 190/193 UN members submitted Voluntary National Reviews.
- Regional Leaders**: East & South Asia show fastest SDG progress.
- Top Improvers**: Nepal (+11.1), Benin (+14.5), UAE (+9.9), Peru (+8.7).
- Europe Dominates**: 19 of top 20 SDG performers are European nations.
- Global Lag**: Only 17% of SDG targets progressing; no SDG fully on track.
- Fiscal Gaps**: ~50% countries lack capacity to fund SDGs.
- Multilateralism Ranking**: Barbados 1st, USA 193rd.

India's Performance

- Rank & Score**: 99th, SDG Index 67.0 points.
- Regional Standing**: Behind China (49), ahead of Bangladesh (114) & Pakistan (140).
- Progress Areas**: SDG 3 (healthcare), SDG 7 (electricity access), SDG 9 (digital infrastructure).
- Challenges**: Rising obesity (SDG 2), climate action (SDG 13), press freedom (SDG 16).

SOURCE- DRISHTI MONTHLY

Depot Darpan Portal, Anna Mitra App, and Anna Sahayata Platform

Recent Context :

The Union Minister launched **Depot Darpan Portal, Anna Mitra App, and Anna Sahayata Platform** to improve **transparency, efficiency, and grievance redressal** in India's Public Distribution System benefiting 81+ crore people.

Key Points for Prelims

- Depot Darpan Portal** – Self-assessment & monitoring portal for FCI & CWC depots; uses **IoT, CCTV, live analytics**, and composite ratings; aims to optimize storage and save ₹275 crore.
- Anna Mitra App** – Mobile app for **FPS dealers, DFSOs, and Inspectors**; tracks stock, sales, grievances, and inspections; enhances

transparency and accountability; piloted in Assam, Uttarakhand, Tripura, Punjab.

3. **Anna Sahayata Platform – Grievance redressal system** for NFSA & PMGKAY beneficiaries; accessible via **WhatsApp, IVRS, ASR**; improves accountability and efficiency.
4. **Public Distribution System (PDS)** – Food security program under **NFSA, 2013**; provides **subsidized wheat, rice, sugar, kerosene** to vulnerable populations; covers ~2/3 population.
5. **Implementation – Centre:** FCI handles procurement, storage, transport; **States/UTs:** distribute food, issue ration cards, operate FPS.
6. **Other Digital Initiatives – Anna Chakra** (reduces transport, saves ₹250 crore), **SCAN** (streamlined subsidy claims), **ONORC** (One Nation One Ration Card).
7. **Technology Integration in PDS – SMART-PDS (2023–26)**, **computerized FPS with POS machines, Aadhaar linkage & DBT, GPS tracking** and SMS alerts for grain delivery.

World Energy Investment Report

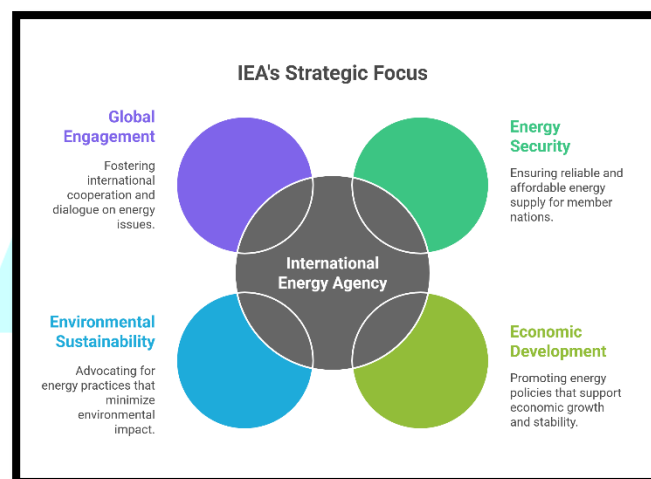
Recent Context

The IEA released the **10th World Energy Investment Report 2025**, highlighting record **global energy investment of USD 3.3 trillion**, with a major shift toward **clean energy technologies**.

Key Points for Prelims

1. **Global Energy Investment 2025** – Projected at **USD 3.3 trillion**, with **USD 2.2 trillion** in clean energy and **USD 1.1 trillion** in fossil fuels.
2. **Clean Energy Investments** – Led by **solar PV (USD 450 billion)**, **battery storage (>USD 65 billion)**, and **nuclear power (USD 75 billion)**; low-emission power generation spending nearly doubled in five years.
3. **India's Energy Investment** – Renewable power investment rose from **USD 13B (2015) → USD 37B (2025)**; fossil fuels from **USD 41B → 49B**; nuclear & other clean sources from **USD 1B → 6B**; grid & storage fell **USD 31B → 25B**.

4. **Regional Patterns – China:** >25% of global energy investment, equals US+EU combined; **Africa:** only 2% of global clean energy investment despite 20% of world population.
5. **Fossil Fuel Trends** – Oil exploration investment ↓6%, LNG investment rising (US, Qatar, Canada), coal remains strong (China starting 100 GW new coal in 2024).
6. **Grid Investment Gap** – Generation investment **USD 1 trillion**, grid only **USD 400 billion**; rising material costs nearly doubled in five years.
7. **International Energy Agency (IEA)** – Paris-based intergovernmental body (est. 1974), 32 members + 13 associations including India; focuses on **energy security, economic development, environmental sustainability, global engagement**.



19th Statistics Day & Contribution of P.C. Mahalanobis

Recent Context:

On 29th June 2025, India celebrated the 19th **Statistics Day** marking the 132nd birth anniversary of P.C. Mahalanobis, with the theme “75 Years of *National Sample Survey*”. The event saw the launch of the GoStat app, the 2025 Prof. C.R. Rao Award to Dr. Prajmitra Bhuyan, and release of the SDG National Indicator Framework Progress Report.

About:

1. **National Statistics Day:** Observed annually on 29th June since 2007 to honour P.C.

Mahalanobis and highlight the role of statistics in governance and development.

2. **P.C. Mahalanobis:** Eminent statistician (1893–1972), founder of the Indian Statistical Institute (1931) and statistical journal *Sankhya* (1933).
3. **Mahalanobis Distance:** A statistical measure to determine how far a point lies from the mean in multidimensional space; used in pattern recognition and data analysis.
4. **Economic Planning:** Architect of the *Mahalanobis Model* in the Second Five-Year Plan (1956–61), focusing on heavy industrialisation for long-term self-reliance.
5. **National Sample Survey (NSS):** Initiated in 1950 on Mahalanobis' recommendation; conducts nationwide household and industrial surveys for policy data.
6. **MoSPI:** Ministry of Statistics and Programme Implementation (est. 1999) oversees NSO, Programme Implementation Wing, National Statistical Commission, and ISI.
7. **Global Impact:** Feldman-Mahalanobis Model influenced economic strategies of developing nations by prioritising capital goods sector investment.

Achieving Self-Sufficiency in Pulses

Recent Context:

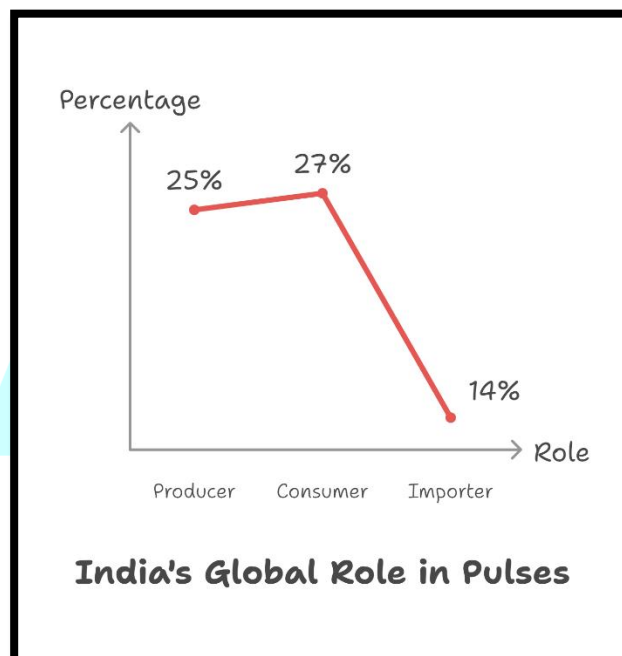
In 2024–25, India's pulses imports hit a record 7.3 million tonnes worth USD 5.5 billion due to drought-induced production drop. Farmers face low procurement despite MSP, leading to distress sales.

About:

1. **Definition:** Pulses are dry edible seeds of leguminous plants (family *Fabaceae*), rich in protein, fiber, and micronutrients, and improve soil fertility via nitrogen fixation.
2. **Climatic Needs:** Thrive at 20–27°C, 25–60 cm rainfall, sandy-loam soils; grown as Rabi (e.g., gram, masoor) and Kharif (e.g., moong, urad, arhar) crops.
3. **India's Status:** Largest producer (25%), consumer (27%), and importer (14%) globally;

key states—Madhya Pradesh, Maharashtra, Rajasthan, UP, Karnataka.

4. **Production Share:** Cover 20% of food grain area but contribute only 7–10% of production; gram is the dominant pulse (40%).
5. **Challenges:** MSP bias towards rice/wheat, climate vulnerability, low yields (660 kg/ha vs world avg. 909 kg/ha), fragmented holdings, and pest/disease susceptibility.
6. **Import Sources:** Canada, Russia, Australia, Mozambique, Tanzania, Myanmar, USA.
7. **Government Schemes:** NFSM-Pulses, PM-AASHA, National Mission on Sustainable Agriculture, Rashtriya Krishi Vikas Yojana, High Yielding Seeds Programme.



RoDTEP Scheme for Exporters Restored

Recent Context :

The government restored RoDTEP for Advance Authorisation, EOUs, and SEZs after its expiry in Feb 2025, aiming to refund embedded duties and boost export competitiveness.

ABOUT:

1. **RoDTEP** – Remission of **Duties & Taxes on Exported Products**; replaced MEIS (2021).
2. **Eligibility** – All sectors including **textiles, pharma, chemicals, iron & steel**; includes SEZ & EOU units.
3. **Exports via e-commerce/courier** – Eligible for refunds.

4. **Refund mechanism** – Transferrable e-scrips to pay **Basic Customs Duty**, not direct cash.
5. **Duties refunded** – Central/State excise on fuel, coal cess, mandi tax, tolls, stamp duty, VAT.
6. **Domestic Tariff Units (DTAs)** – Scheme valid till **Sep 30, 2025**.
7. **Objective** – Enhance **export competitiveness**, support **MSMEs** facing thin margins.

Gaps in India's Irrigation System

Recent Context:

Despite **52% irrigation coverage**, India faces **water scarcity**, over-reliance on groundwater, low irrigation efficiency (**38%**) and delayed projects, prompting **policy reforms and micro-irrigation adoption**.

ABOUT:

1. **Agriculture water use** – ~80% of total water withdrawal; 688 bcm annually.
2. **Irrigation coverage** – 73 mha out of 141 mha sown area (52%).
3. **Irrigation Potential Utilised (IPU)** – 80 mha vs Potential Created (IPC) 109 mha.
4. **Efficiency** – India 38%; developed countries ~55%.
5. **Challenges** – Uneven rainfall, outdated infrastructure, groundwater overuse, misaligned cropping patterns, weak regulations.
6. **Legal aspect** – Easement Act 1882 allows unrestricted water extraction by landowners.
7. **Way forward** – Micro-irrigation, participatory management, cropping pattern rationalisation, groundwater regulation, water harvesting.

Agri Photovoltaics (APVs) to Boost Farmers' Income

Recent Context :

APVs combine **solar energy generation with crop cultivation**, enabling dual income, efficient land use, and improved microclimate, supporting India's **renewable energy targets and Net Zero 2070 commitment**.

ABOUT:

1. **APV definition** – Solar panels installed above farmland; crops grow beneath.
2. **Designs** – Rows between panels or panels elevated ~2m above crops.
3. **Benefits** – Dual revenue: **crop + solar energy**, land-use efficiency, improved microclimate.
4. **Energy security** – Supports **India's Solar Mission**, rural electrification, and **Net Zero 2070**.
5. **Capital cost** – 11% higher than ground-mounted solar plants; ~₹3 crore/5-acre MW plant.
6. **Challenges** – Lack of standardised guidelines, low Feed-in Tariff, small landholdings.
7. **Policy support** – PM-KUSUM scheme; FIT ₹3.04/unit in Rajasthan; long payback discourages investors.

SOURCE – VISION MONTHLY

RURAL INDIA: THE NEW ENGINE OF INDIA'S CONSUMER MARKET

Recent Context :

Rural India's consumer market is **growing faster than urban markets**, driven by rising incomes, declining poverty, digital and physical infrastructure, and government schemes, positioning it as a new engine of consumption-led growth.

Key Points for Prelims

1. **Rural Demand Growth:** MPCE in rural India rose 9.2% (2023-24), higher than urban 8.3%; rural-urban MPCE gap fell to 69.7%.
2. **Urbanization of Rural Spending:** Non-food items (communication, education, healthcare) dominate rural consumption.
3. **Growth Drivers:** Rising incomes (non-farm, remittances), poverty decline (<5%), DBT & PM-KISAN, infrastructure (PMGSY, BharatNet), financial inclusion (UPI, Jan Dhan).
4. **Concerns:** Intra-rural inequality, infrastructure gaps, digital divide, climate vulnerabilities affecting farm income.
5. **Government Recommendations:** Focus on aspirational districts, converge skilling & entrepreneurship schemes, develop roads, internet, warehousing.
6. **Private Sector Role:** Localize products, promote rural micro-entrepreneurship, leverage low-cost tech (IVR, vernacular AI, WhatsApp commerce).

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

Why in the News:

- AMRUT has completed **10 years** since launch, aimed at improving urban infrastructure in India.



Ministry: Ministry of Housing and Urban Affairs (MoHUA)

Type: Centrally Sponsored Scheme

Coverage: Initially **500 cities and towns**.

AMRUT 2.0 (2021): Focuses on **water and sewerage only**, aiming for:

- Tap water for all households in statutory towns
- Improved sewerage management

Major Components of AMRUT 2.0

- Pey Jal Survekshan:** Assessment of service level benchmarks for water supply, reuse, sewerage, and water body conservation.
- Behaviour Change Communication:** Promotes water conservation and efficiency.
- Technology Sub-Mission:** Supports start-ups and private entrepreneurship via pilot projects.
- Public Private Partnership (PPP):** Mandatory in cities with population >1 million.
- Outcome-Based Funding:** Cities submit a roadmap to achieve targets.
- Community Participation:** Emphasis on women's self-help groups.
- Circular Economy of Water:** Focus on recycling treated sewage, water body rejuvenation, and conservation.

Modified Interest Subvention Scheme (MISS)

Why in the News:

- Union Cabinet approved the continuation of the **Interest Subvention (IS)** component under MISS for **2025-26**.

Type: Central Sector Scheme

Ministry: Ministry of Agriculture & Farmers Welfare

Implemented by: RBI and NABARD

Objective

- Ensure **short-term credit availability to farmers** at an **affordable interest rate** through Kisan Credit Card (KCC).

Key Features

- Variant of Interest Subvention Scheme (2006-07):** KCC loans at **7% interest**.
- Short-term Loans:** Up to **₹3 lakh** at subsidized interest of 7%.
 - 1.5% interest subvention** given to lending institutions.
- Prompt Repayment Incentive (PRI):**
 - Up to **3% interest reduction**, effectively lowering KCC loan rate to **4%** for timely repayment.
- Loans for Animal Husbandry/Fisheries:** Interest benefit applicable **up to ₹2 lakh**.

Kisan Credit Card (KCC)

Objective: Provide farmers credit for **agriculture inputs and production needs**.

History:

- Introduced in **1998**; expanded in **2019** to include **animal husbandry, dairying, and fisheries**.

Eligibility:

- Owner cultivators, tenant farmers, oral lessees, sharecroppers, Self-Help Groups (SHGs), and Joint Lending Groups.

Activities Supported:

- Cultivation & post-harvest operations
- Marketing loans
- Household consumption needs
- Working capital for farm assets
- Investment credit for allied activities (animal husbandry, dairying, fisheries)

Credit Limit:

- Calculated based on **cropping patterns and purpose**.

Issuing Institutions:

- Public & Private Sector Banks
- Small Finance Banks
- PACS (linked with SCBs)
- Regional Rural Banks & Rural Cooperative Banks

Duration:

- **5 years**, subject to periodic review

Digital Initiative:

- **Kisan Rin Portal (KRP)** enhances **transparency and efficiency** in loan management.



SOURCE – PIB
Wind Energy in India

Recent Context:

- **Global Wind Day:** 15th June
- **Location:** Bengaluru
- **Organized by:** Ministry of New and Renewable Energy (MNRE)

India’s Wind Energy Vision

- **Central to renewable energy policy.**
- **Targets:**
 - 50% power capacity from **non-fossil sources by 2030**
 - **Net-zero emissions by 2070**
- Supports **Atmanirbhar Bharat** in energy sector.

Prime Minister’s Vision:

- Renewable energy powers **manufacturing**, conventional energy for **households**.
- Positions India as a **green energy manufacturing hub**.

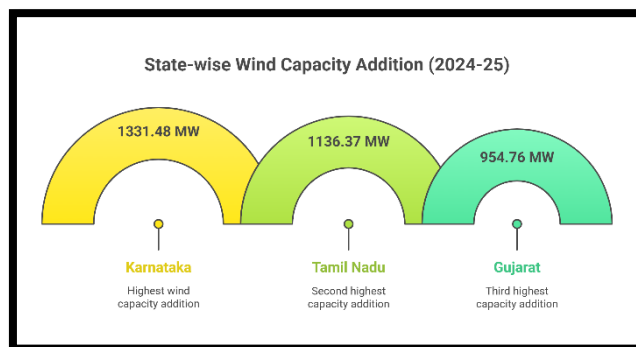
Global Standing

- **4th largest** installed wind power capacity globally

- **3rd largest** renewable energy producer
- Domestic wind turbine manufacturing: **225 kW to 5.2 MW**, 14 companies, 33 models
- Competitive in **global markets**

Five National Priorities

1. **Expand into new states:** Madhya Pradesh, Telangana, Odisha
2. **Offshore wind:** 4 GW leasing areas in Gujarat & Tamil Nadu
3. **Firm green power strategies:** Storage-linked models for reliability
4. **Modern grid:** AI-based forecasting to manage intermittency
5. **Boost domestic manufacturing:** Full value chain – turbines, blades, components



India Meets Peak Power Demand of 241 GW

Context:

- India achieved **historic transformation** in power sector: record capacity, robust grid, renewable integration.
- **Union Minister Shri Manohar Lal** highlighted India’s emergence as a **power-surplus nation**.
- **Relevance:** GS 3 – Energy

Key Highlights

1. **Peak Power Demand Met:** 9 June 2025, 241 GW peak, 0 GW shortage → India now power-surplus.
2. **Capacity Addition (FY 2024-25):** 34 GW added (29.5 GW renewables); total installed 472.5 GW (2014: 249 GW).
3. **Battery Storage Push:** Rs 5,400 Cr VGF for 30 GWh BESS; private investment Rs 33,000 Cr; target 2028.
4. **ISTS Waiver for Storage:** Extended to 30 June 2028; covers PSPs & BESS to reduce costs.
5. **Ultra High Voltage AC (UHVAC) by 2034:** 9×1100 kV lines, 10 substations; Rs 53,000 Cr investment; CPRI for modernization.

6. **Transmission Reforms:** Land compensation 85→200%, Right of Way 15→30%; faster project execution & private participation.
7. **Key Projects:** Tehri PSP 250 MW adds grid flexibility; energy shortage April 2025 just 0.1% vs 4.2% in 2013–14.

Centre Hikes Fair and Remunerative Price (FRP) for Sugarcane

Recent Context :

CCEA approved FRP of ₹355/quintal for sugarcane for the 2025-26 season, ensuring timely payments to farmers while states can provide higher SAP for local support.

Prelims Points:

1. **FRP definition** – Minimum price sugar mills must pay under Sugarcane (Control) Order, 1966.
2. **Fixing authority** – Cabinet Committee on Economic Affairs (CCEA) on CACP recommendations.
3. **Purpose** – Guarantees timely payment, irrespective of mills' profits/losses.
4. **SAP (State Advised Price)** – States may set higher price to support farmers.
5. **Frequency** – Announced annually before sugar season (Oct–Sep).
6. **Legal framework** – Ensures mills' compliance with procurement obligations.
7. **Economic significance** – Protects farmers' income, stabilises sugar sector, affects inflation and sugar exports.

Digitalising India's Seed Value Chain: SATHI Portal

Recent Context :

SATHI Portal has integrated 24 states as of mid-2025 to digitalise seed traceability, authentication, and inventory, prevent spurious seeds, and link farmers with subsidies via DBT.

Prelims Points:

1. **SATHI full form** – Seed Traceability, Authentication and Holistic Inventory.
2. **Developed by** – Ministry of Agriculture & Farmers' Welfare in partnership with NIC.

3. **Scope** – Tracks entire seed supply chain: producers → distributors → dealers → retailers → farmers.
4. **QR code** – Each certified seed packet carries QR to access origin, grower, certifying agency.
5. **DBT integration** – Subsidy for seeds goes directly into farmers' bank accounts.
6. **Current status** – Uploading seed data optional, proposal to amend Seeds Act, 1966 to make mandatory.
7. **Objective** – Ensure quality seeds, prevent spurious/substandard seed circulation, improve transparency.



TOPICS COVERED-

- **Polar Research Vessel (PRV)** – India’s first indigenous vessel for deep-sea, polar research, enhancing scientific and strategic capabilities.
- **Civil Defence Mock Drills** – Nationwide drills simulating air raids and emergencies under the Civil Defence Act, 1968.
- **Kartarpur Corridor Closure** – India suspends visa-free Sikh pilgrimage corridor to Pakistan due to security concerns.
- **National Security Doctrine (NSD)** – Proposed framework to coordinate India’s response to traditional, non-traditional, and hybrid threats.
- **Indo-Saudi Strategic Partnership** – Cooperation in defense, climate, culture, and trade advanced during PM Modi’s 2025 visit.
- **FATF Greylisting Pakistan** – India seeks action against Pakistan for terror financing under FATF monitoring framework.
- **IMF Loans to Pakistan** – \$2.4B funding approved; India abstains citing cross-border terrorism risk.
- **Bangladeshi Export Restrictions** – India blocks land exports via north-east ports in retaliation to Bangladesh’s trade limits.
- **Article 51 UN Charter** – India invokes self-defense against Pakistan-based terrorists under “unwilling or unable” doctrine.
- **India-SCO Engagement** – India refuses SCO draft statement over terrorism double standards while engaging strategically.
- **China-Pakistan-Bangladesh Nexus** – Regional connectivity meeting challenging India’s influence; strategic partnerships counter required.
- **Israel-US-Iran Conflict** – Operation Rising Lion & associated US strikes impact regional security, energy, and Indian interests.
- **WTO Reforms** – India calls for multilateral trade reform addressing NTBs, SDT, and dispute resolution.
- **UNSC Membership & Reforms** – Five new non-permanent members elected; India monitors equity, regional representation, and counter-terrorism committees.
- **US Withdrawal from GAVI** – Impacts funding for vaccines, global health governance, and opens leadership gaps.
- **IOMed Formation** – China-led international mediation organization offering alternative dispute resolution.
- **India-Kyrgyzstan BIT** – Updated treaty ensuring investment protection, local remedies, and policy-space exceptions.
- **E-Passport & Passport Seva 2.0** – Digital passports with biometric security improving travel authenticity and border control.
- **WESP 2025** – UN economic outlook revises India’s GDP at 6.3%; highlights global slowdown and food insecurity.
- **India-Maldives Treasury Support** – USD 50M rollover under G2G framework; strengthens trade, currency, and defense ties.
- **G7 Summit** – India participates as outreach country; emphasizes critical minerals, supply chains, and climate coordination.
- **Operation Sindhu (Iran)** – Evacuation of Indians via Armenia amid rising Israel-US-Iran tensions.
- **India-Japan Maritime Cooperation** – Collaboration on ports, shipbuilding, smart islands, seafarers, and green shipping technology.
- **India-Central Asia Dialogue** – Strengthening regional security, trade, connectivity, counter-terrorism, and critical minerals.

- **CRVS Bangkok Conference** – Asia-Pacific commitment to universal birth/death registration by 2030.
- **Gaza Humanitarian Foundation (GHF)** – US-Israel backed NGO providing aid in Gaza crisis outside UN framework.
- **West Bank** – Palestinian territory under partial Israeli occupation; central to peace negotiations.
- **Netzarim Corridor** – Militarized zone in Gaza for Israeli monitoring and movement control.
- **Operation ATALANTA (EU NAVFOR)** – EU anti-piracy mission in Western Indian Ocean collaborating with India.
- **MERCOSUR Expansion** – Bolivia joins; promotes trade integration in South America; India holds PTA.
- **IMEC Corridor** – Multi-modal India-Middle East-Europe trade route reducing Suez dependency.
- **Northern Sea Route (NSR)** – Arctic maritime route reducing Europe-Asia transit by ~50%; India explores feasibility.
- **BRICS Parliamentary Forum** – Legislative cooperation among BRICS nations; India chairs in 2026.
- **Hodeidah Port & IALA** – Yemen port critical for aid; IALA standardizes maritime navigation; India is member & host.
- **Congo Fever (CCHF)** – Tick-borne viral hemorrhagic fever; high-risk human-livestock infection; supportive care only.
- **Operation Midnight Hammer** – US precision strike on Iran’s nuclear facilities using B-2 bombers and MOP bombs.



INTERNATIONAL RELATIONS

SOURCE – PIB

India to Build First-Ever Polar Research Vessel (PRV)

Recent Context :

India's GRSE signed an MoU with Norway's Kongsberg to build the first indigenously developed Polar Research Vessel, enhancing oceanographic research, climate studies, and India's maritime strategic and scientific capabilities.

ABOUT:

1. **First Indigenous PRV:** Enhances polar and deep-sea research capabilities; aligned with NCOPR requirements.
2. **Make in India:** High-tech vessel built domestically, boosting shipbuilding sector.
3. **Scientific Capabilities:** Equipped for oceanographic, climatological, and polar ecosystem studies.
4. **Strategic Significance:** Supports Antarctica policy, climate research, and maritime presence.
5. **MAHASAGAR Vision:** Expands SAGAR initiative; focuses on maritime cooperation, security, and environmental sustainability.
6. **India-Norway Cooperation:** Strengthens shipbuilding, logistics, green shipping, and seafarer supply partnerships.
7. **Global Maritime Role:** Positions India as an emerging maritime power with innovation-driven, sustainable ocean trade leadership.

Civil Defence Mock Drills in India

Recent Context :

Amid India-Pakistan tensions after Pahalgam attack, civil defence mock drills ('Operation Shield') conducted nationwide to assess preparedness of authorities and public under Civil Defence Act, 1968.

ABOUT:

1. **Legal framework – Civil Defence Act, 1968** empowers government to manage emergencies.
2. **Powers under Act** – Restrict movement, impose curfews, control transport, requisition property, censor communications.

3. **Purpose of drills** – Simulate air raid, blackout, and emergency response scenarios.
4. **Target areas** – Sensitive districts near LoC and International Border.
5. **Last major drills** – During 1971 war build-up.
6. **Objective** – Evaluate civil authority, emergency services, and local population readiness.
7. **Significance** – Enhances national security preparedness for potential external threats.

India Shuts Kartarpur Corridor

Recent Context :

Kartarpur Corridor closed indefinitely after the Pahalgam attack; it connects Gurudwara Dera Baba Nanak (India) to Darbar Sahib (Pakistan) for visa-free Sikh pilgrimage.

ABOUT:

1. **Location** – Punjab, India → Kartarpur, Pakistan; 4.7 km cross-border corridor.
2. **Purpose** – Visa-free religious pilgrimage for up to 5000 devotees daily.
3. **Historical proposal** – Proposed in 1999 by Atal Bihari Vajpayee.
4. **Completion** – Inaugurated for Guru Nanak Dev 550th birth anniversary, 2019.
5. **Gurdwaras connected** – Dera Baba Nanak & Darbar Sahib.
6. **Closure reason** – Security concerns after terrorist attacks in India.
7. **Significance** – Important for India-Pakistan religious diplomacy and Sikh community access.

India Needs National Security Doctrine (NSD)

Recent Context :

Recent events like Pahalgam attack highlight India's lack of a comprehensive National Security Doctrine for coordinated responses to traditional, non-traditional, and hybrid threats.

ABOUT:

1. **NSD definition** – Framework outlining national interest, security objectives, threats, and agency accountability.

2. **India's status** – No explicit **National Security Doctrine** currently exists.
3. **Challenges addressed** – Internal (terrorism, insurgency), external (border disputes, BRI), non-traditional (climate change, cyber threats).
4. **Committees recommending NSD** – Naresh Chandra Task Force (2012), Parliamentary Standing Committee on Defence (2021).
5. **Significance** – Ensures **strategic guidance, integrated defense planning, SOP standardisation**.
6. **Outcome** – Reduces **ad-hoc decision-making**, enhances **coordination among ministries, intelligence, armed forces**.
7. **Global role** – Positions India as **net security provider**, e.g., **Mission Sagar** humanitarian missions

SOURCE – INDIAN EXPRESS

PM Modi's Visit Imparts New Momentum to Indo-Saudi Strategic Partnership

Recent Context :

PM Modi visited Saudi Arabia (April 2025), meeting Crown Prince MBS; despite being cut short due to the Pahalgam terror attack, the visit advanced strategic ties in unconventional sectors beyond energy and trade.

About:

1. **Strategic Partnership Council (SPC)** – Apex body (headed by PM & MBS) now expanded with new Ministerial Committees on Defense Cooperation & Tourism-Culture.
2. **Environment & Food Security** – Cooperation on agriculture, food supply chains, green hydrogen, solar energy, and sustainable use of resources.
3. **Climate Change Collaboration** – Joint work under UNFCCC & Paris Agreement; India's ISA, CDRI, LiFE, Green Credit; Saudi's Green Initiative & circular carbon economy.
4. **Defense & Counter-Terrorism** – Military exercises, training, cybersecurity, drone/missile control; joint condemnation of

cross-border terrorism (veiled reference to Pakistan).

5. **Cultural Cooperation** – Committee on Tourism & Cultural Cooperation; synergy with Saudi Vision 2030 (NEOM, Al-Ula, Red Sea Film Festival); promoting tourism, films, and exchanges.
6. **Indian Diaspora** – 2.5 million Indians in Saudi Arabia remain a strong bridge in bilateral relations.
7. **Geostrategic Significance** – Indo-Saudi cooperation linked to IMEC, regional maritime security, sustainable development, and multipolar global order.

India Plans to Push Pakistan on FATF Grey List

Recent Context :

India seeks **FATF grey-listing for Pakistan**, citing **Operation Sindoor evidence** on destroyed terror bases and ongoing **terror infrastructure** in Pakistan to curb cross-border terrorism financing.

ABOUT:

1. **FATF** – Intergovernmental body combating **money laundering & terrorist financing**; HQ: **Paris, France**, established 1989.
2. **Members** – 39 members (37 jurisdictions + 2 regional bodies); **India, China, Israel, UK, USA** included.
3. **Standards** – **40+9 Recommendations**: 40 AML + 9 CFT standards.
4. **Lists** – **Black List** (Non-cooperative countries: Iran, North Korea), **Grey List** (strategic deficiencies, action plan required).
5. **Pakistan's status** – Greylisted multiple times: 2008, 2012–15, 2018–2022; removed with conditional monitoring.
6. **Greylisting effect** – Limits access to **international loans** and foreign investment.
7. **India's role** – Plans to submit **latest evidence on Pakistan-based terrorism** to FATF to push for re-listing.

IMF's Loan to Pakistan

Recent Context :

IMF approved **\$1B under Extended Fund Facility (EFF)**

and **\$1.4B under Resilience & Sustainability Facility (RSF)** to Pakistan; **India abstained**, citing risk of misuse for cross-border terrorism.

ABOUT:

1. **EFF purpose** – Assists countries with **medium-term balance of payments problems** due to structural weaknesses.
2. **Structural weaknesses** – Poor infrastructure, underdeveloped banking, inadequate capital, lack of skilled workforce.
3. **Conditionality** – **Structural reforms**, policy commitments, periodic **tranche-based review** by IMF Board.
4. **Duration & repayment** – Typically **3–4 years**; repayment over **4.5–10 years**, in **semiannual installments**.
5. **RSF purpose** – Affordable **long-term financing** for low/middle-income countries; focuses on **macro-critical reforms**, climate and pandemic resilience.
6. **Duration & repayment** – Minimum 18 months, max 20-year repayment with **10.5-year grace period**.
7. **India's response** – **Abstained from voting**, citing Pakistan's **misuse of IMF funds** for cross-border terrorism; 28 IMF programs in 35 years.

India Restricts Bangladeshi Exports via Land Ports

Recent Context :

India blocks **Bangladesh's land-based exports** (ready-made garments, plastic, cotton yarn) via north-eastern **LCS/ICP ports**, responding to **Bangladesh restrictions on Indian yarn and rice exports**.

ABOUT:

1. **Affected ports** – Tripura, Assam, Meghalaya, Mizoram; Kolkata & Mumbai ports allowed with inspections.
2. **Affected items** – Ready-made garments, plastic, wooden furniture, juices, carbonated drinks, cotton yarn, bakery items, dyes.
3. **Bilateral trade context** – Bangladesh largest South Asian trade partner (~\$18B in FY23).

4. **Previous arrangements** – India allowed **Transshipment Facility** since 2020; now terminated.
5. **Bangladesh's counter** – Imposed restrictions on **Indian yarn exports via land ports**.
6. **Strategic impact** – Protects **India's north-east manufacturing sector**; counters unfair trade practices.
7. **Geopolitical context** – Reflects **rising India-Bangladesh tensions**, with Bangladesh increasing **ties with China**.

Article 51 of UN Charter: Self-Defence Clause

Recent Context :

India justified **Operation Sindoor** against **Pakistan-based terrorists** under **Article 51 UN Charter**, invoking '**unwilling or unable**' doctrine while following **necessity and proportionality principles**.

ABOUT:

1. **Article 51** – Permits **use of force in self-defence** after an armed attack; exception to **Article 2(4)**.
2. **Principles** – **Necessity** (only option left) and **Proportionality** (response proportional to attack).
3. **Procedural duty** – **Report military measures to UNSC** immediately.
4. '**Unwilling or unable**' doctrine – Targets **non-state actors** in another country if host state fails to act.
5. **Traditional use** – Between **sovereign states**; post-9/11 extended to **terrorist organisations**.
6. **ICJ stance** – Self-defence valid **only with state attribution**, exceptional cases if state supports terrorists.
7. **Significance** – Provides **legal basis for counter-terror operations** while adhering to **international law** norms.

SOURCE – VISION MONTHLY

INDIA AND SHANGHAI COOPERATION ORGANIZATION (SCO)

Recent Context :

India refused to sign the SCO Defence Ministers' joint declaration in Qingdao over double standards on terrorism, emphasizing principled stance while

engaging strategically with Central Asia, China, and Pakistan.

ABOUT :

1. **India's SCO Membership:** Observer in 2005; full member since 2017.
2. **Refusal Reason:** Joint declaration ignored Pahalgam attack but mentioned Balochistan; India insists on consistent anti-terror stance.
3. **Strategic Opportunities:** Engagement with Central Asian Republics, energy cooperation (e.g., Kazakhstan uranium), and regional connectivity (INSTC).
4. **Geopolitical Concerns:** China's dominance, BRI promotion, expansion beyond Central Asia, and perceived anti-Western tilt.
5. **Selective Participation:** India engages in SCO selectively, e.g., Regional Anti-Terrorist Structure (RATS) and development-focused sub-groups.
6. **Balancing Autonomy:** Prioritizes national interests over Chinese/Pakistan agenda, maintaining strategic autonomy.
7. **Global Role of SCO:** Covers 80% of Eurasia, 42% of global population, ~25% global GDP; addresses Afghanistan security vacuum.



CHINA-LED TRILATERAL NEXUS

Recent Context :

China, Pakistan, and Bangladesh held their first trilateral meeting to promote BRI and regional connectivity, challenging India's influence; India must counter through strategic partnerships and regional engagement.

ABOUT:

1. **Trilateral Engagement:** First meeting under China-South Asia Cooperation Forum; follows China-Pakistan-Afghanistan initiative.
2. **Strategic Nexus:** Links China, Turkey, and Pakistan; coordinated responses observed during Pahalgam crisis.
3. **China's Role:** Expanding geopolitical footprint, infrastructure diplomacy, and asserting influence to counter India.
4. **Regional Concerns for India:** Potential geostrategic encirclement, undermining India-led platforms (BIMSTEC, BBIN), and diminished influence in Bangladesh (Teesta River project).
5. **Connectivity Competition:** China promotes BRI; India promotes BBIN and India-Middle East-Europe Corridor (IMEC).
6. **Indian Strategy:** Strengthen partnerships with US, Japan (QUAD), implement development projects, and utilize multilateral/regional frameworks.
7. **China's Regional Influence:** Evident in Pakistan (defence dependence), Maldives (infrastructure), Nepal (airports), Sri Lanka (Hambantota Port), Bangladesh (defence supplier).

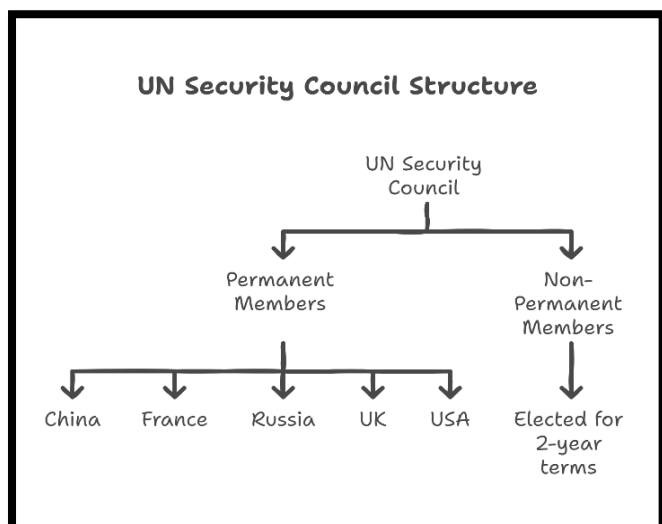
ISRAEL-US-IRAN CONFLICT

Recent Context :

Israel launched "Operation Rising Lion" against Iran's nuclear sites; the US joined with precision strikes. Rising tensions threaten energy security, undersea cables, and India's strategic, trade, and connectivity interests.

ABOUT:

1. **Military Operations:** Israel's Operation Rising Lion; Iran's retaliation Operation True Promise 3; US Operation Midnight Hammer using GBU-57 MOP.
2. **Israel's Defence:** 'Barak Magen' (Lightning Shield) protects navy from drones, missiles; complements Iron Dome, David's Sling, Arrow systems.



3. **Nuclear Tensions:** Iran may withdraw from NPT; undermines global non-proliferation norms.
4. **Energy & Trade Risk:** Strait of Hormuz closure threat; 35% global seaborne oil, 20% LNG pass through it.
5. **Undersea Cable Vulnerability:** Cables like EIG, FLAG risk disruption in Red Sea, Gulf of Oman, affecting Africa, Gulf, South Asia.
6. **Impact on India:** Decline in trade with Iran (\$1.4B) and Israel (\$3.75B); projects like Chabahar Port, INSTC affected.
7. **Indian Nationals & Diplomacy:** Operation Sindhu evacuates Indians; careful balancing of relations with Israel (defence, tech) and Iran (energy, Eurasian connectivity).

WORLD TRADE ORGANIZATION (WTO) REFORMS

Why in the News?

India recently called for reforms to the WTO during a high-level mini-ministerial meeting in Paris, ahead of the 14th Ministerial Conference in Cameroon, 2026.

About WTO

1. **Genesis:** Est. 1995 (Marrakesh Agreement), successor to GATT; outcome of Uruguay Round (1986–94); 166 members (~98% global trade); HQ: Geneva; India member since 1995.
2. **Functions:** Administers trade pacts, forum for negotiations, dispute settlement, trade policy review, capacity building.
3. **Structure:** Ministerial Conference (biennial, top body); decisions by consensus; Secretariat in Geneva.

4. **India's Reform Demands:** Address NTBs, curb distortions by non-market economies (e.g., China), restore dispute settlement system.
5. **Key Priorities:** Resist JSIs/plurilaterals in multilateral system; permanent solution on public food stockholding; flexibility in fisheries pact obligations.
6. **Contentious Issues:** Development status & Special and Differential Treatment (SDT); U.S. vs China on "developing" claims.
7. **Emerging Concerns:** CBAM, trade protectionism, digital economy rules, climate-trade linkages.

UN SECURITY COUNCIL (UNSC)

Recent Developments:

Five countries—**Bahrain, Colombia, Democratic Republic of Congo, Latvia, and Liberia**—were elected as non-permanent members of the UNSC.

About UNSC:

- **Genesis:** Established in 1945 via the UN Charter as one of the six principal organs of the UN.
- **Purpose:** Maintain international peace and security.
- **Members:**

Key Provisions of Proposed Reforms:

- **Expanded Membership:** 11 permanent and 14–15 non-permanent members
- **Equitable Regional Representation:** 6 new permanent seats distributed among Africa, Asia-Pacific, Latin America & Caribbean, Western Europe/Other States
- **No Veto Initially:** New permanent members will not have veto power for the first 15 years; provision to be reviewed afterward

UNSC Committees – Pakistan's Roles (2025):

1. **Taliban Sanctions Committee (TSC):**
 - **Genesis:** UNSC Resolution 1988 (2011)
 - **Function:** Monitor and enforce sanctions on Taliban-linked individuals/groups threatening Afghanistan's peace and security
2. **Counter-Terrorism Committee (CTC):**

- **Genesis:** UNSC Resolution 1373 (2001), post-9/11
- **Members:** All 15 Security Council members
- **Functions:** Ensure countries criminalize terror financing, freeze terrorist-linked funds, share intelligence, and implement counter-terrorism measures

US PULLS FUNDING FROM GAVI, THE VACCINE ALLIANCE

Why in the News:

The **United States** has withdrawn funding from **Gavi, the Vaccine Alliance**, accusing it and the **World Health Organization (WHO)** of suppressing dissenting views and legitimate questions regarding vaccine safety. The US has historically been one of Gavi's largest supporters.

Rising Trend of US Withdrawal from Global Alliances:

- In recent years, the US has reduced participation or withdrawn from major global institutions:
 - WHO
 - Paris Climate Agreement
 - UN Human Rights Council
 - UN Relief and Works Agency (UNRWA)
- As a global superpower, US withdrawal has significant implications for international governance.

Impact of US Withdrawing from Global Alliances:

1. **Weakening Multilateralism / Rule-Based Order:**
 - Example: Israel withdrew participation from UN Human Rights Council.
2. **Undermining Climate Action:**
 - 2024 was recorded as the hottest year globally.
 - The US is the world's **second-largest greenhouse gas emitter**, behind China.
3. **Shortage of Funds for Health Initiatives:**
 - US exit may create funding gaps.

- Example: In 2024, the US contributed ~15% of WHO's total funding.
4. **Leadership Vacuum and Geopolitical Shifts:**
 - China may fill the leadership void in global institutions, potentially reducing **India's influence** in multilateral decision-making.

INTERNATIONAL ORGANISATION FOR MEDIATION (IOMed)

Why in the News:

China has formally established the **International Organisation for Mediation (IOMed)** as a global alternative to traditional institutions like the **International Court of Justice (ICJ)** and the **Permanent Court of Arbitration**.

About IOMed:

- **Purpose:** Dedicated to resolving international disputes through **mediation**.
- **Members:** Over 30 founding countries including **Indonesia, Pakistan, and Belarus**, primarily from **Asia, Africa, and the Caribbean**, indicating a non-Western orientation.
- **Scope:**
 - Disputes **between states**
 - Disputes **between a state and nationals of another country**
 - **International commercial disputes**

INDIA-KYRGYZSTAN BILATERAL INVESTMENT TREATY (BIT)

Why in the News:

The **BIT signed in June 2019** came into force on **5th June 2025**, replacing the earlier 2000 agreement and ensuring continued investment protection.

Key Features of the BIT:

1. **Definition of Assets:**
 - Enterprise-based definition with inclusions/exclusions
 - Clarifies investment characteristics like **capital commitment, profit expectation, and risk assumption**
2. **Exclusions for Policy Space:**

- Local government, government procurement, taxation, and compulsory licenses are excluded
- 3. **Removal of Most Favored Nation (MFN) Clause:**
 - Ensures **consistent treatment** by preventing selective import of favorable treaty provisions
- 4. **General and Security Exceptions:**
 - Allows policy space for the state
 - General exceptions include **environmental protection, public health, and safety**
- 5. **Revised Dispute Resolution Mechanism:**
 - Investors must first **use local remedies** before international arbitration
 - Promotes **alternative dispute resolution**

E-PASSPORT & Passport Seva Programme 2.0

Why in the News:

The **Ministry of External Affairs** has rolled out **e-Passports** along with an upgraded **Passport Seva Programme 2.0**.



About e-Passport:

- **Definition:** Combines a traditional paper passport with an **electronic chip** (RFID) embedded in the passport inlay.
- **Contents of Chip:**
 - Personal particulars of the holder
 - Biometric information (like fingerprints or facial data)
- **Security Technology:**

- Uses **Public Key Infrastructure (PKI)** to ensure authenticity and prevent tampering.
- **Purpose & Benefits:**
 - Prevents **forgery and fraudulent use** of passports
 - Confirms **genuineness at border controls**
 - Enhances **global travel security and credibility**

SOURCE – DRISHTI MONTHLY

World Economic Situation and Prospects (WESP) 2025

Recent Context:

India's GDP growth forecast for 2025 has been revised down to 6.3% in the UN WESP mid-2025 update, reflecting global economic slowdown and domestic trends.

About WESP – Key Points for Prelims:

1. Released by **UN Department of Economic and Social Affairs (UNDESA)** with **UNCTAD** and 5 UN regional commissions.
2. Provides **global and regional economic outlooks** to support **SDG-oriented growth policies**.
3. **India's GDP** projected at **6.3% in 2025**, highest among major economies.
4. **Inflation** in India expected to be **4.3%**, within RBI's target of 2–6%.
5. Global GDP growth projected at **2.4% in 2025**, slowdown due to trade tensions, weak demand, and commodity volatility.
6. **Food insecurity:** 343 million people face acute food insecurity; 1.9 million at famine risk.
7. **Key drivers of India's growth:** manufacturing, exports, and rising defence production.

India-Maldives Financial Support – USD 50 Million Treasury Bill Rollover

Recent Context:

India has rolled over a **USD 50 million Treasury Bill** to the Maldives under the government-to-government framework, continuing economic support and strengthening bilateral ties.

About India-Maldives Relations – Key Points for Prelims:

1. **Historical Ties:** India recognized Maldives in **1965**; diplomatic mission established in **Malé, 1972**; both are **SAARC founding members**.



2. **Trade & Economy:** India is Maldives' **largest trade partner (2023)**; bilateral trade framework since **1981**.
3. **Financial Assistance:** India extended **USD 400 million support in 2024**, plus a **Rs 3,000 crore currency swap**.
4. **Treasury Bills:** India's **rollover of USD 50 million** and SBI's **USD 100 million** support under G2G arrangement
5. **Tourism & Culture:** Tourism is **25% of Maldives' GDP**; India is the **top tourist source since 2020**; enhanced by **2022 Open Skies agreement**.
6. **Defence Cooperation:** India provides critical support under **Neighborhood First & SAGAR/MAHASAGAR**, including **Operation Cactus (1988)** and training **70% of Maldives NDF personnel**.
7. **Currency & Trade Facilitation:** 2024 framework promotes **use of local currencies for cross-border trade**, reducing reliance on third currencies.

51st G7 Summit

Recent Context:

India's Prime Minister attended the 51st G7 Summit in Kananaskis, Canada, as an invited outreach country for the 12th time. The European Commission President attended for the first time.

About:

1. **G7 Overview:** Informal forum of seven advanced economies — US, UK, France, Germany, Italy, Japan, Canada; EU participates as a non-enumerated member.
2. **Origin:** Began in 1975 as G6 (post-1973 oil crisis), became G7 in 1976 with Canada; briefly G8 (1997–2014) before Russia's expulsion over Crimea.
3. **Nature:** No formal treaty or secretariat; presidency rotates annually; decisions are by consensus and non-binding.
4. **Economic Weight:** Accounts for ~40% of global GDP, 10% of population, 36% of power generation capacity, 30% of energy demand, and 25% of CO₂ emissions.
5. **India's Role:** Supported critical minerals security and global supply chain resilience under RISE Partnership.
6. **Significance:** Acts as a platform for policy coordination among major economies on climate, trade, technology, and security.



Operation Sindhu for Evacuation from Iran

Recent Context:

India launched *Operation Sindhu* to evacuate nationals from Iran via Armenia amid fears of Israeli-American strikes. Armenia emerged as the safest evacuation route due to geography and strong bilateral ties.

About:

1. **Purpose:** Safely evacuate Indians from Iran through Armenia's territory amid rising regional tensions.

2. **Geostrategic Advantage:** Armenia shares a 44 km border with Iran at the Nurduz–Agarak crossing, connected to Tehran by a 730 km highway.
3. **Alternative Routes Unviable:**
 - Pakistan: Closed due to strained ties after Operation Sindoor.
 - Turkey & Azerbaijan: Support Pakistan.
 - Afghanistan: No formal ties with Taliban regime.
 - Iraq: Active conflict, airports shut.
 - Turkmenistan: Remote, underdeveloped crossing.
4. **Diplomatic Support:** Armenia backs India on issues like Kashmir and UNSC reforms.
5. **Defence Links:** India became Armenia's top arms supplier in 2022 (USD 250 million deal for PINAKA, Akash-1S, etc.).
6. **Connectivity Role:** Armenia is part of the International North-South Transport Corridor (INSTC), aiding India's evacuation and trade plans in the Caucasus.
7. **Regional Significance:** Serves as a politically friendly, logistically viable, and secure land bridge between Iran and India.

SOURCE – INSIGHTS

India-Japan Maritime Relations – Strategic Collaboration

Recent Context:

India and Japan held high-level talks to boost maritime cooperation, focusing on **port digitisation, shipbuilding, smart islands, seafarer employment, and technology transfer.**

About India-Japan Maritime Relations – Key Points for Prelims:

1. **Investment & Infrastructure:** Japan plans to invest in **Indian shipyards** and port infrastructure, including **Imabari Shipbuilding's greenfield project in Andhra Pradesh.**
2. **Port Digitisation:** Agreement to **enhance digital technologies** in port operations for efficiency and **carbon emission reduction.**

3. **Smart Islands Development:** Collaboration to make **Andaman & Nicobar and Lakshadweep** green, renewable-energy powered, and **disaster-resilient.**
4. **Employment & Training:** Japan to employ **skilled Indian seafarers**; India has over **1.54 lakh trained maritime personnel.**
5. **R&D & Technology Transfer:** Cooperation in **next-gen ship design, sustainable maritime tech,** and research via **Cochin Shipyard Limited (CSL).**
6. **Strategic Partnership:** Shared **Indo-Pacific vision,** participation in **Quadrilateral Security Dialogue** and **Supply Chain Resilience Initiative** to counter regional dominance.
7. **Green Shipping & Innovation:** Supports **Maritime India Vision 2030** and **Maritime Amrit Kaal Vision 2047,** promoting **carbon-neutral logistics** and sustainable maritime innovation.

4th India-Central Asia Dialogue – Strengthening Regional Cooperation

Recent Context:

India hosted the **4th India-Central Asia Dialogue** in New Delhi, focusing on **regional security, critical minerals, connectivity, counter-terrorism, and economic integration** with five Central Asian nations.

About 4th India-Central Asia Dialogue – Key Points for Prelims:

1. **Multilateral Platform:** Forum for foreign ministers of **India, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan** to engage in structured dialogue.
2. **Launch & Objective:** Launched in **2019 (Samarkand)** to deepen **strategic, political, and economic cooperation** in Central Asia.
3. **Counter-Terrorism Cooperation:** Condemned **Pahalgam attack** and urged early adoption of **UN Comprehensive Convention on International Terrorism.**
4. **Critical Minerals:** Joint interest in **rare earth exploration and investment**; Second India-Central Asia Rare Earth Forum planned.

5. **Connectivity & Trade:** Emphasis on **INSTC** and **Chabahar Port**, supporting Uzbekistan and Turkmenistan's inclusion in INSTC.
6. **Financial & Digital Integration:** Focus on **digital payment systems, interbank cooperation, and trade in national currencies.**
7. **Energy, Health & Global Role:** Cooperation on **India Stack, solar alliance, biofuels, universal health coverage,** and support for **India's permanent UNSC membership.**

Bangkok Conference on Civil Registration and Vital Statistics (CRVS)

Recent Context:

At the **Third Ministerial Conference in Bangkok**, Asia-Pacific governments, including India, adopted a resolution to achieve **universal birth and death registration by 2030.**

Key Points for Prelims – CRVS:

1. **Definition & Purpose:** CRVS is the **continuous, universal, and compulsory recording** of key life events (births, deaths, marriages, divorces) under legal frameworks.
2. **Lead Organization:** **UN ESCAP** (Economic and Social Commission for Asia and the Pacific) spearheads regional CRVS initiatives.
3. **Legal Identity:** Birth and death registration provides **official ID documents**, enabling access to education, healthcare, pensions, and inheritance.
4. **Vital Statistics:** CRVS generates **data for policymaking, public health surveillance,** and **SDG tracking** (e.g., maternal mortality, child health).
5. **Challenges:** Include **geographical isolation, digital divide, inter-agency fragmentation, death certification gaps,** and **cultural stigma** affecting registration.
6. **Key Outcomes 2025:** Commitment to **100% birth/death registration,** adoption of **digital tools & AI,** and focus on **equity, privacy, and gender inclusion.**
7. **Way Ahead:** Strengthen **cross-border interoperability, last-mile infrastructure,**

inclusive legal reforms, and verbal autopsy mechanisms for accurate mortality data.

India's Refusal to Sign SCO Draft Statement

Recent Context:

At the **SCO Defence Ministers' Meet in Qingdao**, India **refused to endorse the draft joint statement,** objecting to the omission of **India-specific terror incidents.**

Key Points for Prelims – SCO & India's Stance:

1. **About SCO:** A **Eurasian intergovernmental organisation** focused on political, economic, security, and defence cooperation in Central & South Asia; founded in **2001.**
2. **Members (2025):** 10 countries – **India, China, Russia, Pakistan, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Iran, Belarus.**
3. **Objectives:** Promote **regional security, counter-terrorism, resolve border issues, economic cooperation, and multipolarity in global governance.**
4. **Governing Bodies:** **Heads of State Council (HSC)** and **Regional Anti-Terrorist Structure (RATS)** handle decision-making and security cooperation.
5. **Reason for India's Refusal:** Draft statement ignored the **Pahalgam terror attack** while highlighting incidents in Pakistan; India demanded **balanced recognition of terrorism** across all members.
6. **India's Diplomatic Signal:** Demonstrates **zero tolerance for terrorism,** asserts **strategic autonomy,** and challenges **China-Pakistan influence** within SCO.
7. **Strategic Implication:** Strengthens India's position ahead of the **SCO Heads of State Summit in Tianjin,** pushing for **terrorism-centric reforms in RATS.**

SOURCE – THE HINDU

Gaza Humanitarian Foundation (GHF)

Recent Context:

Established in **2025,** the American-based **Gaza Humanitarian Foundation (GHF)** is actively distributing humanitarian aid amid the ongoing **Gaza**

crisis, backed by Israel and the US, but not part of the UN.

Key Points for Prelims:

1. **Founded:** 2025, headquartered in **Delaware, USA**.
2. **Purpose:** Provides **humanitarian aid** during crises, especially in Gaza.
3. **Support:** Operates with backing from **Israeli and American governments**.
4. **Independence:** **Not affiliated with the United Nations** or its agencies.
5. **Scope of Aid:** Includes **food, medical supplies, shelter, and emergency relief**.
6. **Operational Model:** Works through **government partnerships** for logistics and funding.
7. **Significance:** Enhances **US-Israeli cooperation in humanitarian assistance** while addressing immediate civilian needs in conflict zones.

West Bank

Recent Context:

The **West Bank** remains a focal point in the Israel-Palestine conflict, with ongoing discussions on settlements, administration, and Palestinian statehood.

Key Points for Prelims:

1. **Location:** Landlocked territory in **Western Asia**, between **Israel and Jordan**.
2. **Significance:** Forms the main part of the **Palestinian territories**.
3. **Borders:** **Jordan** (east), **Dead Sea** (east), **Israel** (south, west, north), **Mediterranean coast**.
4. **Historical Control:** Captured by **Jordan (1948)** after the Arab-Israeli War; **Israel occupied it in 1967** during the Six-Day War.



5. **Administrative Capital:** **Ramallah**, major city and de facto capital of Palestine.
6. **Current Status:** Under **Israeli occupation**, with restricted Palestinian autonomy in parts of the territory.
7. **Strategic Importance:** Central to negotiations on peace, settlements, and Palestinian sovereignty.

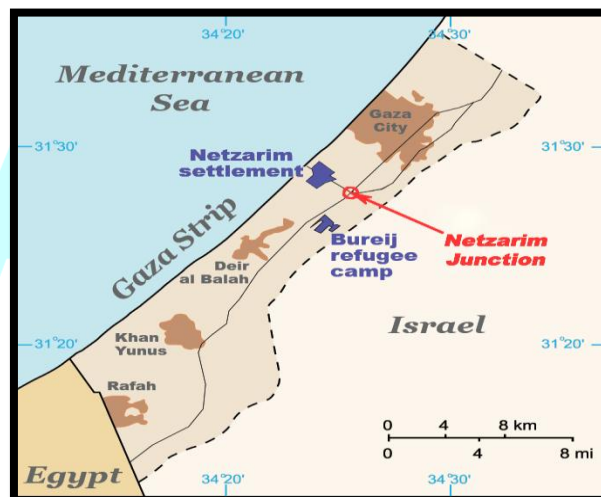
Netzarim Corridor

Recent Context:

Created during the **2023–2025 Gaza War**, the corridor is a militarized zone established by **Israel** to control movement within the Gaza Strip.

Key Points for Prelims:

1. **Length:** Approximately **6 kilometers**.
2. **Location:** Divides **northern Gaza** from **southern Gaza**, stretching from the Israeli



border (east) to the Mediterranean Sea (west).

3. **Purpose:** Established as a **militarized monitoring zone** for controlling Palestinian movement.
4. **Philadelphi Corridor:** A separate **14 km demilitarized zone** along **Gaza-Egypt border**.
5. **Rafah Corridor:** Covers the **entire Gaza-Egypt border (14 km)**, includes the **Rafah crossing**, from the Mediterranean Sea to the **Kerem Shalom crossing** with Israel.

- Strategic Importance:** Facilitates **security control**, monitoring, and military operations within Gaza.
- Conflict Relevance:** Highlights **territorial fragmentation and mobility restrictions** during Israel-Gaza conflicts.

Operation ATALANTA | EU NAVFOR

Recent Context:

The **Indian Navy** and **EUNAVFOR** are set to conduct a **joint naval exercise in the Indian Ocean Region**, marking the first operational engagement of EUNAVFOR warships in Indian waters.

Key Points for Prelims:

- Launch Year: 2008**, the **EU's first-ever naval operation**.
- Purpose:** Counter-piracy mission in the **Western Indian Ocean and Red Sea**.
- UN Backing:** Initiated under **UNSC resolutions passed in 2008**.
- Legal Framework:** Operates under the **EU Common Security and Defence Policy (CSDP)**.
- Key Objectives:**
 - Protect **World Food Programme (WFP) shipments**.
 - Ensure the **safety of vulnerable vessels**.
 - Deter piracy** and armed robbery at sea.
 - Monitor illegal fishing** and maritime threats.
- Participants:** Core **EU member states** (Spain, Italy, Germany, France, etc.) with **associated partners** like Norway and Serbia.
- Strategic Importance:** Strengthens **maritime security**, safeguards **international shipping lanes**, and enhances **India-EU naval cooperation**.

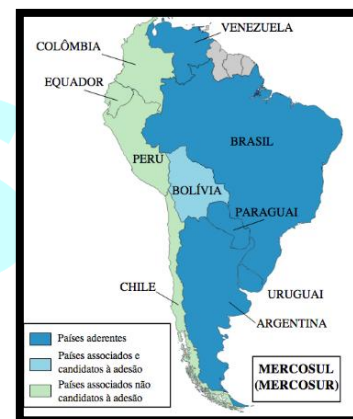
MERCOSUR (Southern Common Market)

Recent Context:

In **2024**, **Bolivia** became a **full-time member** of MERCOSUR, expanding the South American trading bloc.

Key Points for Prelims:

- Full Form: Southern Common Market** (Spanish: **Mercado Común del Sur – MERCOSUR**).
- Establishment: 1991**, via the **Treaty of Asunción**.
- Founding Members: Argentina, Brazil, Paraguay, Uruguay**.
- Later Members: Bolivia and Venezuela** (Venezuela suspended since **December 1, 2016**).
- Objective:** Promote **free movement of goods, services, capital, and people** among member states.
- Size & Significance:** 4th-largest integrated market globally after **EU, NAFTA, and ASEAN**.
- Headquarters & Language: Montevideo, Uruguay; Spanish and Portuguese** are official languages.
- Decision-making Body: Common Market Council –** coordinates foreign and economic policy.
- India Connection: Preferential Trade Agreement (PTA) signed in 2004.**



India-Middle East-Europe Economic Corridor (IMEC) & Related Strategic Transport Corridors

Recent Context:

Launched during the **G20 Summit 2023 in New Delhi**, IMEC is a strategic multi-modal connectivity initiative under the **Partnership for Global Infrastructure and Investment (PGII)**. It aims to enhance trade efficiency between **India, the Middle East, and Europe** while reducing dependency on the Suez Canal route.

Key Points for Prelims:

1. India-Middle East-Europe Economic Corridor (IMEC)

- Signatories:** India, US, Saudi Arabia, UAE, European Union, Italy, France, Germany.



2. Corridors:

- **East Corridor:** India → Gulf
- **Northern Corridor:** Gulf → Europe

3. Mode: Multi-modal – railroad, ship-to-rail, and road networks.

4. Key Ports Connected:

- **India:** Mundra, Kandla, Jawaharlal Nehru Port Trust (JNPT)
- **Middle East:** Fujairah, Jebel Ali, Abu Dhabi (UAE); Dammam, Ras Al Khair (Saudi Arabia)
- **Israel:** Haifa port
- **Europe:** Piraeus (Greece), Messina (Italy), Marseille (France)

5. Strategic Benefits: Reduces logistics costs by ~30% and transport time by ~40% versus the Suez Canal route.

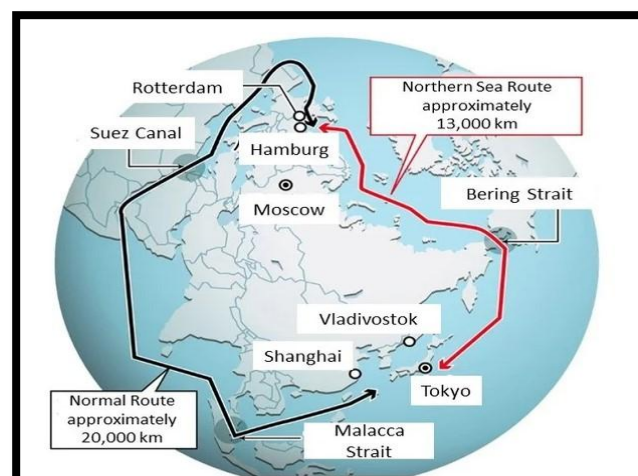
6. Rail Link: Connects Fujairah (UAE) to Haifa (Israel) via Saudi Arabia (Ghuwaifat, Haradh) and Jordan.

Northern Sea Route (NSR)

1. **Definition:** Shortest maritime route between Europe and Asia-Pacific via the Arctic Ocean.
2. **Length & Route:** ~5,600 km through Barents, Kara, Laptev, East Siberian Seas; Kara Strait → Bering Strait (Provideniya Bay).
3. **Strategic Importance:**
 - Reduces transit distance by up to 50% vs Suez Canal.
 - Growing relevance due to melting Arctic ice and search for alternative trade corridors.
4. **India's Involvement:** Proposed joint feasibility study with Norway for operationalizing NSR.

Prelims-Relevant Takeaways:

- IMEC = G20 2023, multi-modal corridor India ↔ Middle East ↔ Europe
- INSTC = India-Russia-Iran 2000, bypasses Red Sea, 13 members
- NSR = Shortest Europe-Asia route via Arctic, ~50% faster than Suez
- Multi-modal connectivity and alternative routes = strategic, economic, and energy access significance



BRICS Parliamentary Forum

Recent Context:

The 11th BRICS Parliamentary Forum was recently held in Brasilia, Brazil. India is set to chair the 12th edition in 2026.

Key Points for Prelims:

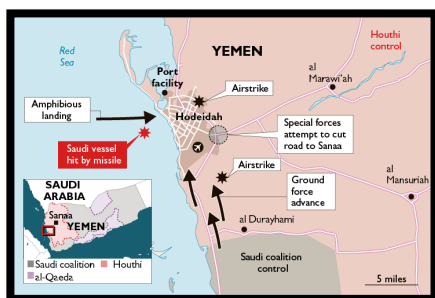
1. **Purpose:** Platform for dialogue among parliaments of BRICS member countries to strengthen legislative cooperation.
2. **Inception:** First Forum held in 2015, Moscow, during Russia's chairmanship.
3. **Membership:** Involves parliamentarians from all BRICS countries – Brazil, Russia, India, China, South Africa.
4. **Chairmanship:** Rotates annually among BRICS nations.
5. **India's Role:** Officially taking over the 12th BRICS Parliamentary Forum chairmanship in 2026.
6. **Significance:**
 - Promotes legislative collaboration and mutual understanding.

- Strengthens **BRICS cohesion and policy coordination**.
7. **Link to BRICS Summit:** Serves as a **preparatory forum** influencing discussions at **BRICS heads of state summits**.

Hodeidah Port & IALA

Recent Context:

Hodeidah Port in **western Yemen** on the **Red Sea coast** remains a critical entry point, with **about 70% of imports** and **80% of humanitarian aid** to Yemen passing through **Hodeidah, Salif, and Ras Issa**.



Key Points for UPSC Prelims:

Hodeidah Port

1. **Location:** Western Yemen, Red Sea coast.
2. **Significance:** Major entry point for **humanitarian aid** and commercial imports.
3. **Strategic Importance:** Plays a key role in **Yemen's ongoing humanitarian crisis**.

International Association of Marine Aids to Navigation (IALA)

1. **Established:** 1957 as an NGO; became **intergovernmental in 2021**.
2. **Purpose:** Standardizes and enhances **marine aids to navigation (AtoN)** to ensure **global maritime safety and efficiency**.
3. **Headquarters:** Saint-Germain-en-Laye, near Paris, France.
4. **India's Role:** Council member since 1980; **Vice President (2023–2027)**.
5. **Recent Participation:** India attended the **2nd IALA Council Session in Nice, France (2023)**.
6. **Upcoming Events Hosted by India:**
 - **3rd General Assembly (2025)** in Mumbai
 - **21st IALA Conference (2027)** in Mumbai

7. **Global Maritime Significance:** Enhances India's role in **international maritime safety governance**.

Congo Fever (Crimean-Congo Hemorrhagic Fever - CCHF)

Recent Context:

CCHF continues to be a viral hemorrhagic fever of concern, transmitted by ticks and infected livestock, with **human-to-human transmission possible through body fluids**.

Key Points for Prelims:

1. **Other Name:** Crimean-Congo Hemorrhagic Fever (CCHF).
2. **Cause:** Caused by the **CCHF virus**, a member of the **Nairovirus** genus.
3. **Transmission:**
 - **Primary:** Tick bites (**Hyalomma** species).
 - **Secondary:** Contact with blood or body fluids of infected animals or humans.
4. **Symptoms:** High fever, bleeding, muscle aches, headache, and in severe cases, multi-organ failure.
5. **Treatment:** No FDA- or WHO-approved therapeutics; supportive care is the mainstay.
6. **History:** First identified in Crimea (1940s); later linked to Congo Hemorrhagic Fever.
7. **Significance:** Listed among high-risk viral hemorrhagic fevers, requiring strict infection control in healthcare and livestock management

Operation Midnight Hammer

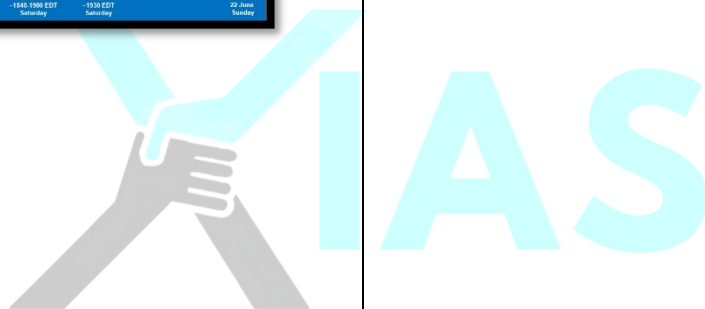
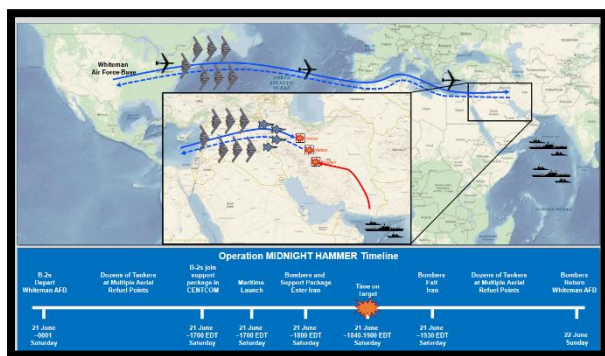
Recent Context:

- **Launched by the United States targeting Iran's nuclear infrastructure.**
- **Focused on key nuclear facilities: Fordow, Natanz, and Isfahan.**
- Utilized B-2 Spirit stealth bombers equipped with GBU-57A/B Massive Ordnance Penetrator (MOP) for precision strikes.

Key Points for Prelims:

1. **Nature:** A military operation aimed at disabling nuclear facilities.

2. **Country of Initiation:** United States of America.
3. **Targeted Facilities in Iran:**
 - Fordow Nuclear Facility
 - Natanz Nuclear Facility
 - Isfahan Nuclear Facility
4. **Weapon System Used:** GBU-57A/B Massive Ordnance Penetrator (MOP) – a bunker-busting precision bomb.
5. **Aircraft Deployed:** B-2 Spirit stealth bombers.
6. **Strategic Purpose:** Disrupt Iran’s nuclear weapons development capabilities.





TOPICS COVERED-

- **Fossil Leaves Discovery in Assam** – 24-million-year-old Nothopegia leaves reveal NE India’s tropical past and plant migration to Western Ghats.
- **Monsoon Impact on Marine Productivity** – Extreme monsoons reduce nutrient upwelling in Bay of Bengal, affecting plankton and fisheries.
- **MSC ELSA 3 Sinking, Kerala** – Liberian ship sinks off Kerala, causing oil, chemical, and plastic pollution; legal action under MARPOL/SOLAS.
- **Plastic Pollution from EV Tyres** – Heavier EVs release ultrafine plastic particles (1–10 µm) from tyres, not covered under PM2.5/PM10 norms.
- **Methane Emissions & India’s Stance** – India avoids COP26 Global Methane Pledge due to “survival emissions” but pursues domestic mitigation programs.
- **India Boosts Reservoir Capacity in Indus System** – Maintenance at Baglihar & Salal dams increases storage and reduces downstream flow to Pakistan.
- **Upper Bhavani Pumped Storage Project** – 1000 MW Tamil Nadu project for peak-hour electricity near Nilgiris biodiversity hotspot.
- **Siang Upper Multipurpose Project** – 11,000 MW Arunachal dam aims at flood control and hydropower amid China’s upstream projects.
- **Hydrogen Fuel Cell Vehicles (HFCVs)** – Hydrogen-powered vehicles offer zero emissions, long range, and quick refueling; India promotes via National Green Hydrogen Mission.
- **Black Headed Caterpillar Disease** – Coconut pest (*Opisina arenosella*) reduces photosynthesis; controlled via biopesticides and predators.
- **Botrytis Fungi (Noble Rot)** – Fungus infects grapes, increasing sugar for sweet wine; releases oxalic acid to decompose plant tissue.
- **Similipal Tiger Reserve** – Odisha reserve blends Western/Eastern Ghats & Himalayan biodiversity; uses AI for anti-poaching.
- **Muscle Fiber Formation (Myogenesis)** – Myoblasts form muscle fibers during fetal growth and repair; regulated by Myf5 & MyoD proteins.
- **IBAT Alliance** – Global coalition providing biodiversity data (WDPA, KBAs, IUCN Red List) for conservation and corporate decisions.
- **Kappatagudda Wildlife Sanctuary** – Northern Western Ghats sanctuary with dry deciduous forests, grasslands, and heritage temples; now an Eco-Sensitive Zone.
- **International Potato Centre & India** – CIP maintains potato gene bank; India is 2nd largest producer, mainly in Indo-Gangetic plains.
- **WMO Report on Asia’s Climate 2024** – Asia’s 2nd warmest year, warming twice as fast as global average with record sea-surface temperatures.
- **Himalayan Brown Bear** – Critically endangered high-altitude bear in India & neighboring countries; habitat loss is main threat.

- **Nano Fertilizers** – Advanced controlled-release fertilizers improve nutrient absorption, reduce wastage, and promote sustainable agriculture.
- **Giant African Snail** – Invasive snail in India (Kerala) causing crop damage and human health risk (Eosinophilic meningitis).
- **Gambusia affinis** – Mosquito-control fish introduced to India; outcompetes native species and disrupts biodiversity.
- **Guppies** – Small invasive fish used for mosquito control; serves as a model organism in ecology and evolution.
- **Russell's Viper** – Highly venomous snake; research on inhibitors (varespladib, marimastat) complements polyvalent antivenom treatment.
- **Rinderpest** – Viral cattle disease eradicated globally (2011); ICAR-NIHSAD Bhopal is Category A holding facility.
- **Biotechnology Policy (BioE3)** – Promotes high-performance biomanufacturing and aims for \$300 billion bioeconomy by 2030.
- **Agroforestry in India** – Integrating trees with crops increases yield, carbon sequestration, and ecosystem sustainability; Model Rules 2025 guide implementation.
- **ICDRI & Coastal Resilience** – India-led global initiative addressing coastal vulnerabilities via disaster-resilient infrastructure.
- **Crowd Disaster Management / Stampedes** – Planning and real-time monitoring prevent casualties during mass gatherings.
- **Bharat Forecast System (BFS)** – India's high-resolution weather system enabling village-level forecasts and disaster management.
- **ILO Convention on Biological Hazards at Work** – First international convention to protect workers from biological hazards.
- **State and Trends of Carbon Pricing 2025** – Rapid growth of global carbon pricing; India develops compliance & offset mechanisms.
- **National Mission for a Green India (GIM)** – Aims to increase forest/tree cover and create carbon sinks with community participation.
- **Global Drought Outlook 2025** – 40% of global land faces severe droughts affecting crops, hydropower, and water supply.
- **Global Ocean Darkening** – Reduced light penetration threatens marine photosynthesis, fisheries, and carbon absorption.
- **3rd UN Ocean Conference (UNOC3)** – Reinforces SDG 14, tackling climate change, biodiversity loss, and marine pollution.
- **New Ramsar Sites in Rajasthan** – Khichan & Menar wetlands protect migratory birds and critically endangered species.
- **Greater Flamingo Sanctuary, Tamil Nadu** – Protects migratory flamingos along Central Asian Flyway at Dhanushkodi.
- **Energy Transition Index (ETI) 2025** – India ranked 71st, indicating slower progress in transition to clean energy.
- **Thirstwave** – Consecutive days of extreme atmospheric water demand affecting agriculture and water management.
- **Salkhan Fossil Park, UP** – Precambrian stromatolites (~1.4 billion years) show early Earth oxygenation; on UNESCO tentative list.
- **Biopesticide for Cardamom Thrips** – ICAR-IISR develops eco-friendly fungus-based solution reducing chemical use.

- **Food Crops & Ethanol-Blending Programme** – Uses sugarcane, rice, maize for ethanol; raises food security concerns.
- **Avian Influenza (H5N1)** – Highly contagious bird virus with potential human infection; global trade and health concern.
- **Siang Upper Multipurpose Project (SUMP)** – Largest Indian dam (11.2 GW) for hydropower and flood control; social & environmental concerns.
- **Sponge Parks in India** – Urban green infrastructure to absorb rainwater, recharge groundwater, and prevent flooding.



ENVIRONMENT AND DISASTER MGT

Source – PIB

A 24-million-year-old secret unearthed by fossil leaves discovery in Assam

Recent Context :

Fossil leaves of *Nothopegia* (~24–23 million years old) discovered in Makum Coalfield, Assam, reveal Northeast India's tropical past, climate shifts due to Himalayan uplift, and migration patterns toward the Western Ghats.

Prelims Pointers:

1. **Location:** Makum Coalfield, Assam – site of Late Oligocene fossil discovery.
2. **Species:** Fossil leaves identified as genus *Nothopegia*, now found only in Western Ghats.
3. **Dating:** Fossils ~24–23 million years old (Late Oligocene).
4. **Scientific Study:** Conducted by Birbal Sahni Institute of Palaeosciences (BSIP), Lucknow using herbarium comparison, cluster analysis, CLAMP.
5. **Climatic Insight:** Northeast India was once warm and humid; Himalayan uplift caused cooler, drier conditions.
6. **Ecological Significance:** Fossil evidence shows plant migration and survival patterns; highlights Western Ghats as ancient biodiversity refuge.
7. **Conservation Message:** Study warns of rapid, human-driven biodiversity loss; emphasizes protecting climate-resilient regions and learning from historical plant responses.

Changes in Monsoon Affect Marine Productivity

Recent Context :

Study shows that **strong or weak monsoons disrupt ocean mixing in Bay of Bengal**, reducing nutrient upwelling, marine plankton growth, and threatening **fish stocks and coastal livelihoods**.

ABOUT:

1. **Bay of Bengal** – Subject to **seasonal monsoon-driven upwelling**; nutrient-rich deep waters support fisheries.

2. **Extreme monsoons** – Both abnormally strong and weak monsoons reduce **vertical ocean mixing**.
3. **Impact on plankton** – ~50% reduction in surface plankton productivity during extreme monsoon events.
4. **Food chain disruption** – Decline in plankton affects **fish, shellfish, and higher trophic levels**.
5. **Livelihood impact** – Threatens **coastal communities dependent on fishing**.
6. **Methodology** – Reconstruction using **22,000-year paleoclimate data, fossils, chemical signatures** and climate models.
7. **Broader implication** – Demonstrates link between **climate variability and marine ecosystem productivity**.

Marine Pollution: MSC ELSA 3 Sinks off Kerala Coast

Recent Context :

Liberian container ship **MSC ELSA 3** sank off Kerala with **hazardous cargo**, raising risks of oil spills, chemical and plastic pollution; declared **state-specific disaster** by Kerala.

ABOUT:

1. **Oil spill impact** – Kills marine life, damages mangroves/coral reefs, bioaccumulates toxins.
2. **Cleanup methods** – **Skimming, in situ burning, and chemical dispersants** (with drawbacks).
3. **International law** – India is signatory to **MARPOL (Annex III)** and **SOLAS Conventions**.
4. **Polluter liability** – Shipowner and flag state are **primarily liable**; 'Polluter Pays' principle under **Environment Protection Act, 1986**.
5. **Merchant Shipping Act, 1958** – DG Shipping investigates marine accidents, vessel seaworthiness, and IMDG code compliance.
6. **Hazardous cargo** – Mismanagement violates **International Maritime Dangerous Goods Code**.
7. **Legal recourse** – India may claim compensation for **ecological, health, and economic damages**.

Plastic Pollution from Tyres of EVs

Recent Context :

EVs, heavier and faster than conventional vehicles, cause **greater tyre wear**, releasing **ultra-fine plastic particles (1–10 microns)** into air, which are **not covered under current PM2.5/PM10 norms**.

ABOUT:

1. **EV weight factor** – 15–20% heavier than conventional cars due to **batteries**, increasing tyre wear.
2. **Tyre wear emissions** – Produces **microplastics and ultrafine particles (1–10 µm)** suspended in air.
3. **Friction & acceleration** – Rapid acceleration causes **higher tyre heat and wear**, amplifying pollution.
4. **Current regulation gap – PM2.5/PM10 standards** do not cover ultrafine particles from tyres.
5. **Air quality impact** – Ultra-fine plastic particles can **penetrate deep into lungs**, posing health risks.
6. **Policy implication** – Need for **expanded vehicular pollution norms** covering tyre microplastics.
7. **Sustainability challenge** – EV adoption reduces tailpipe emissions but **increases tyre-derived particulate pollution**.

SOURCE – INDIAN EXPRESS

Methane Emissions – Global Initiatives & India's Stance

Recent Context:

At COP26, the Global Methane Pledge (GMP) sought a 30% cut in emissions by 2030. India declined, citing “survival emissions” in farming and livestock, while advancing domestic mitigation programs.

About:

1. **Methane's Impact** – ~30% of global warming; 12-year lifespan (shorter than CO₂ but more potent).
2. **Main Sources** – Agriculture (~40%, livestock & paddy), fossil fuels (~35%), waste (~20%).
3. **Global Mechanisms** –
 - UNFCCC (1992) → Framework.

- Kyoto Protocol (1997) → Binding methane targets.
- Paris Agreement (2015) → Voluntary, NDCs.
- COP26 → *Global Methane Pledge (GMP)*.

4. **Supporting Initiatives** – UNEP's IMEQ & MARS, Global Methane Initiative (2004), CCAC, Global Methane Hub.
5. **India's Non-Signature** – Emissions from subsistence agriculture; survival vs luxury emissions; rice export dependency.
6. **India's Mitigation Efforts** – NMSA (paddy practices), DAHD's livestock mission, GOBAR-Dhan, National Biogas Programme.
7. **Global Approach Needed** – Fossil fuel methane easier to monitor (few actors); agriculture-linked methane harder (linked to livelihoods & food security).

India Boosts Reservoir Capacity in Indus River System

Recent Context :

After suspension of the **Indus Waters Treaty**, India began **reservoir maintenance at Baglihar and Salal** on the Chenab, reducing downstream water flow to Pakistan by ~90%.

ABOUT:

1. **Indus River** – Antecedent river; source near **Mansarovar Lake, Tibet**; flows northwest then southwest into Pakistan.
2. **Tributaries (Panjnad)** – Jhelum, Chenab, Ravi, Beas, Sutlej; key for hydroelectric projects and irrigation.
3. **Hydropower projects** – Baglihar, Salal, Dulhasti (Chenab); Chamera, Thein (Ravi); Pong, Pandoh (Beas); Bhakra-Nangal (Satluj).
4. **Reservoir operations** – Flushing and maintenance **increase holding capacity and power generation efficiency**.
5. **Strategic impact** – Reduces downstream water to Pakistan; relevant in **India-Pak water disputes**.
6. **Multipurpose use** – Projects provide **irrigation, flood control, and hydroelectricity**.

7. **Geopolitical relevance** – Indus Basin infrastructure vital amid **Indus Waters Treaty tensions**.

Upper Bhavani Pumped Storage Project (Tamil Nadu)

Recent Context :

MoEFCC approved EIA for the 1000 MW **Upper Bhavani Pumped Storage Project** in Nilgiris to **generate peak-hour electricity**, near Mukurthi National Park biodiversity hotspot.

ABOUT:

1. **Pumped storage principle** – Water pumped to upper reservoir during low demand; released to generate electricity during peak demand.
2. **Location** – Upper Bhavani and Avalanche-Emerald reservoirs, Nilgiris, Tamil Nadu; tributary of **Bhavani-Cauvery river system**.
3. **Power capacity** – 1000 MW, **energy storage linked to reservoir size**.
4. **Environmental concerns** – Area in **Western Ghats biodiversity hotspot**; home to **Shola forests and endangered species**.
5. **Regulatory framework** – EIA under **Environment Protection Act, 1986**; MoEFCC evaluates environmental, social, economic impact.
6. **Hydropower advantage** – Enables **renewable, flexible, peak-load electricity generation**.
7. **Sustainable planning** – EIA ensures mitigation of **ecological and social impacts** before project approval.

Siang Upper Multipurpose Project (Arunachal Pradesh)

Recent Context :

Proposed **11,000 MW multipurpose project on Siang river**, Arunachal Pradesh, aims to **maintain water flow, modulate floods**, in response to China's upstream hydropower activities; faces local protests.

ABOUT:

1. **Siang/Brahmaputra system** – Yarlung Tsangpo (China) → Siang (Arunachal Pradesh) → Brahmaputra (Assam) → Padma-Meghna (Bangladesh).

2. **Strategic need** – Counter **China's 60,000 MW Tsangpo hydropower project** and ensure downstream water security.
3. **Project capacity** – 11,000 MW multipurpose hydropower; also aids **flood management**.
4. **Environmental/social concerns** – May displace **~100,000 locals**, affects forests and ecosystems; protests from Adi tribes.
5. **Tribals affected** – **Adi tribes** rely on jhum cultivation, forest resources; practice **Animism (Donyi Polo)**.
6. **Geographical context** – Upper Siang district; river traverses Arunachal Pradesh before entering Assam.
7. **Hydropolitical significance** – India's **river infrastructure planning** linked to upstream developments in China and water-sharing strategy.

Hydrogen Fuel Cell Vehicles (HFCVs) – Technology & India's Push for Clean Mobility

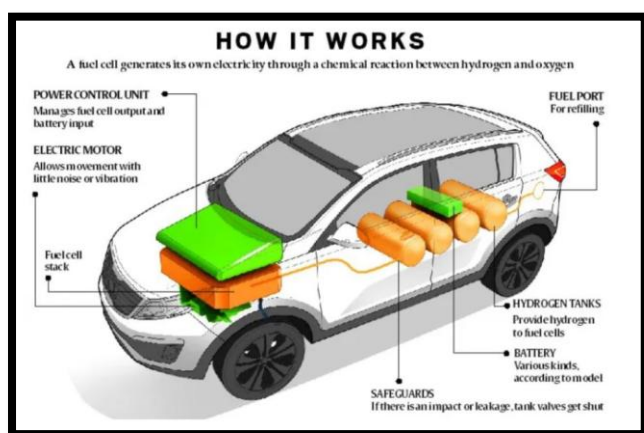
Recent Context :

India is accelerating HFCV adoption with Indian Oil–Hyundai MoU, a mining logistics HFCV in Chhattisgarh, and Indian Railways' hydrogen-powered train plan, aligning with Net Zero 2070 commitments.

About:

1. **Working Principle** – HFCs use Proton Exchange Membrane (PEM); hydrogen splits into protons & electrons → electricity generated via electrochemical reaction with oxygen → byproduct = water vapour.
2. **Advantages** – Zero tailpipe emissions, long driving range, quick refuelling, suitable for heavy-duty vehicles (trucks, buses), silent & reliable operation.
3. **Challenges** – High production cost, limited refuelling infrastructure, durability concerns, safety perception, dependence on green hydrogen for true sustainability.
4. **Types of Hydrogen** –
 - Green: Electrolysis using renewables (clean).
 - Blue: Fossil fuels + CCS.
 - Grey: Natural gas.

- Brown: Coal-based (polluting).
- 5. **National Green Hydrogen Mission (2023)** – Aim: 5 MMT annual production capacity by 2030; develop Hydrogen Highways, refuelling centres; promote exports.
- 6. **Hydrogen Valley Innovation Clusters (HVICs)** – Pilot hubs in Kerala, TN, Gujarat, Maharashtra, Rajasthan; focus on mobility, energy & industry ecosystems.
- 7. **Government Push** – Subsidies, R&D in durable/cheap fuel cells, promotion of hydrogen economy, and global hub vision by 2047 (energy independence).



SOURCE – THE HINDU

Black Headed Caterpillar Disease (Coconut Pest)**Topic:**

Black Headed Caterpillar Disease affecting coconut trees

Recent Context

Larvae of black-headed caterpillar feed on undersides of coconut fronds, reducing photosynthesis; infestation peaks in summer and spreads via wind; biopesticides and biological agents help manage it.

Key Pointers:

1. **Affected Crop:** Coconut; common across coastal and inland India.
2. **Pest:** Black-headed caterpillar (*Opisina arenosella*).
3. **Mode of Damage:** Larvae feed under fronds forming silken galleries; destroy green tissue, reducing photosynthesis.
4. **Spread:** Infestation spreads via wind; peaks during summer.
5. **Management:** Neem-based biopesticides, root zone nourishment.

6. **Biological Control:** Release of predators like *Goniozus nephantidis*.
7. **Significance:** Major threat to coconut productivity; affects livelihood of coastal farmers.

Botrytis Fungi (Noble Rot)**Topic:**

Botrytis fungi and “Noble Rot” in crops

Recent Context :

Botrytis cinerea infects weak or dead plant tissue; in grapes, it causes noble rot, increasing sugar content; fungus releases oxalic acid and has multi-nuclear genetic material.

Key Pointers:

1. **Pathogen:** *Botrytis* fungi; most well-known species *Botrytis cinerea*.
2. **Affected Crops:** Grapes, strawberries, tomatoes.
3. **Noble Rot:** Fungal infection in grapes that dries them, increasing sugar for sweet wines.
4. **Mode of Action:** Fungus releases oxalic acid to break down plant tissue.
5. **Habitat:** Lives on dead or weak plant parts.
6. **Genetic Feature:** Multi-nuclear genetic material.
7. **Significance:** Important for viticulture and understanding fungal pathogenesis.

Similipal Tiger Reserve (STR), Odisha**Recent Context :-**

STR in Odisha blends Western Ghats, Eastern Ghats, and Himalayan biodiversity; UNESCO Biosphere Reserve; home to melanistic tigers, tribes, waterfalls, and high tiger population; AI used for anti-poaching.

Key Pointers:

1. **Location:** Mayurbhanj District, Odisha; Deccan Peninsular Bio-geographic Zone.
2. **Biodiversity:** Mix of Western Ghats, Eastern Ghats, and Eastern Himalayan species.
3. **Tiger Feature:** Habitat for melanistic tigers; highest tiger population in Odisha.
4. **UNESCO Status:** Part of World Network of Biosphere Reserves, 2009.
5. **Geography:** Surrounded by plateaus and hills; peaks include Khairiburu and Meghashini.

- Tribal Communities:** Kolha, Santhala, Bhumija, Bhatudi, Gondas, Khadia, Mankadia, Sahara.
- Innovation:** First reserve with successful TrailGuard AI anti-poaching system.



Formation and development of muscle fibers

Recent Context:

Myogenesis forms muscle fibers via myoblasts; controlled by Myf5 and MyoD proteins; occurs during fetal growth and muscle repair; essential for movement, posture, and treatment of muscle diseases.

Key Pointers:

- Definition:** Myogenesis is formation of muscle fibers.
- Cells Involved:** Myoblasts multiply, fuse to form long muscle fibers.
- Timing:** Occurs during fetal development and post-injury repair.
- Key Proteins:** Myf5 (early muscle cell formation), MyoD (maturation into fibers).
- Functions:** Muscle growth, movement, posture, and body strength.
- Medical Relevance:** Helps understand muscle repair and treatment of muscle-related diseases.
- Significance:** Critical for developmental biology and regenerative medicine.

Integrated Biodiversity Assessment Tool (IBAT) Alliance

Recent Context :

IBAT, launched in 2008, is a global coalition providing datasets like WDPAs, KBAs, and IUCN Red List; aids

biodiversity assessment and corporate, conservation, and policy decision-making.

Key Pointers:

- Launch:** 2008 at IUCN World Conservation Congress.
- Type:** Web-based biodiversity mapping and reporting platform.
- Coalition Members:** BirdLife International, Conservation International (CI), IUCN, UNEP-WCMC.
- Datasets Provided:** World Database of Protected Areas (WDPAs), World Database of Key Biodiversity Areas (WDKBA), IUCN Red List of Threatened Species.
- Purpose:** Supports biodiversity assessment, planning, and reporting for governments, corporations, and NGOs.
- Headquarters:** Cambridge, UK.
- Significance:** Helps in global conservation planning, impact assessment, and informed decision-making.

Kappatagudda Wildlife Sanctuary – “Western Ghats of North Karnataka”

Recent Context :

The sanctuary, recently declared an Eco-Sensitive Zone, features dry deciduous forests, grasslands, riverine zones, the Ghataprabha River, and notable heritage temples, supporting rich biodiversity in northern Western Ghats.

Key Pointers:

- Location:** Karnataka; part of northern Western Ghats.
- Nickname:** “Western Ghats of North Karnataka.”
- Habitats:** Dry deciduous forests, grasslands, scrublands, riverine zones.
- River:** Ghataprabha River (tributary of Krishna) flows through it.
- Cultural Heritage:** Kappatagudda Jain Basadi, Brahma Jinalaya, Trikuteshwara Temple, Dambala Temple.
- ESZ Status:** Union government declared an Eco-Sensitive Zone around the sanctuary.
- Significance:** Protects biodiversity hotspots, river ecosystems, and cultural heritage.

International Potato Centre and potato cultivation in India

Recent Context :

CIP, a CGIAR research hub, maintains the world's largest Potato Gene Bank; South Asia Regional Centre approved in Agra; India is 2nd largest potato producer, majorly from Indo-Gangetic plains.

Key Pointers:

1. **Establishment:** Founded in 1971; headquartered in Lima, Peru.
2. **Scope:** Global research-for-development on potato, sweet potato, Andean root/tuber crops.
3. **Partnership:** Part of CGIAR – global agriculture science and food security network.
4. **Regional Presence:** Operates in 20+ countries; South Asia Regional Centre (CSARC) approved at Agra, UP.
5. **India's Status:** 2nd largest potato producer & consumer; 4th most important food crop after rice, wheat, maize.
6. **Cultivation Facts:** Cool-season crop (ideal 24°C growth, 20°C tuber formation); majorly grown in Indo-Gangetic plains (UP ~30%, West Bengal ~23.5%, Bihar ~17%).
7. **Challenges & Schemes:** Faces Late Blight disease; Operation Greens (2018) stabilizes prices/supply of Tomato, Onion, Potato (TOP).

WMO report on Asia's climate 2024

Recent Context :

WMO's "State of the Climate in Asia 2024" reports Asia's 2nd warmest year, warming twice faster than global average, with record-high sea-surface temperatures, signaling accelerating regional climate change.

Key Pointers:

1. **Report:** "State of the Climate in Asia 2024" by WMO.
2. **Finding:** Asia is warming twice as fast as the global average; 2024 was the 2nd warmest year on record.
3. **Sea Temperatures:** Highest sea-surface temperatures recorded in the region.
4. **WMO Establishment:** Founded 1950; specialized UN agency on meteorology,

climatology, hydrology, and related geophysical sciences.

5. **Predecessor:** International Meteorological Organization (IMO), established 1873.
6. **Members & HQ:** 193 members (187 states + 6 territories); Headquarters in Geneva, Switzerland.
7. **Related Bodies:** IPCC established in 1988 by WMO and UNEP to assess climate change science; WMO also publishes Greenhouse Gas Bulletin and Status of the World Climate.

Himalayan Brown Bear – Critically Endangered high-altitude mammal

Recent Context

Largest mammal in high Himalayas, *Ursus arctos isabellinus*, survives in fragmented alpine habitats in India and neighboring countries; critically endangered due to habitat loss and low population density.



Key Pointers:

1. **Names:** Himalayan Brown Bear / Himalayan Red Bear / Isabelline Bear / Denmo (Ladakhi).
2. **Scientific Name:** *Ursus arctos isabellinus*.
3. **Status:** IUCN – Critically Endangered; Wildlife Protection Act 1972 – Schedule I; CITES – Appendix I.
4. **Distribution:** Northwestern & central Himalayas – Pakistan, India, Nepal, Bhutan, Tibetan Autonomous Region; India: J&K, HP, Uttarakhand (3,000–5,500 m).
5. **Physical Traits:** Males larger than females; omnivorous; hibernate in dens during winter; lifespan 20–30 years.
6. **Behavior:** Solitary; interact only for mating or fighting over mates.
7. **Significance:** Represents one of the most ancient brown bear lineages; conservation critical for alpine ecosystem health.

Nano Fertilizers – Advanced, controlled-release nutrients for sustainable agriculture

Recent Context

IFFCO set up the first overseas nano-fertilizer plant in Brazil; India develops **nanoclay-coated MoP**; nano-fertilizers enhance nutrient absorption, reduce wastage, and promote sustainable farming globally.

Key Pointers:

1. **Definition:** Nutrients encapsulated or coated within nanomaterials (<100 nm) for slow, controlled release.
2. **Organizations:** IFFCO – introduced Nano Urea Liquid (2022); first overseas plant in Brazil.
3. **Composition:** Ammonium humate, ammonia, urea, peat, plant wastes, synthetic fertilizers; developed via mechanical & biochemical processes.
4. **Recent Innovation:** Nanoclay-coated Muriate of Potash (MoP) developed in Nov 2024; meets 80% of potassium fertilizer demand.
5. **Advantages:** Improved nutrient absorption, reduced wastage, better crop productivity, lower frequency of application, sustainable farming.
6. **Environmental Impact:** Reduces soil & water contamination compared to conventional fertilizers.
7. **Significance:** Addresses food security while minimizing ecological footprint; aligns with modern precision agriculture practices.

Giant African Snail – Invasive land snail

Recent Context

Introduced to India from East Africa in 1847, mainly found in Kerala; hermaphroditic, long-lived, highly invasive, and capable of causing Eosinophilic meningitis in humans.

Key Pointers:

1. **Scientific Info:** Largest land snail; hermaphroditic.
2. **Introduction:** Brought to India in 1847 from East Africa.
3. **Distribution:** Predominantly Kerala; high genetic diversity in India.
4. **Lifespan:** 3–5 years; hibernation/aestivation can extend survival up to 2 years.

5. **Health Impact:** Can cause Eosinophilic meningitis in humans.
6. **Ecological Impact:** Considered one of the worst invasive species by IUCN.
7. **Significance:** Threat to agriculture and native ecosystems due to feeding on crops.



Gambusia affinis – Biological mosquito control agent

Recent Context

Native to southeastern US, introduced to India since 1928 for malaria control; thrives in freshwater, outcompetes native species, listed as one of 100 worst invasive alien species by IUCN.

Key Pointers:

1. **Scientific Name:** *Gambusia affinis*.
2. **Origin:** Southeastern United States.
3. **Introduction:** India, 1928, as part of malaria control.
4. **Distribution in India:** Assam, Arunachal Pradesh, Gujarat, Karnataka, Maharashtra, Rajasthan, Tamil Nadu, UP, Odisha, Punjab, Andhra Pradesh.
5. **Habitat:** Ponds, lakes, slow-moving rivers; adapts to temperate and tropical regions.
6. **Ecological Threat:** Outcompetes native fish species, threatens biodiversity.
7. **Significance:** Example of unintended consequences of biological control.

Guppies – Small invasive fish used for mosquito control

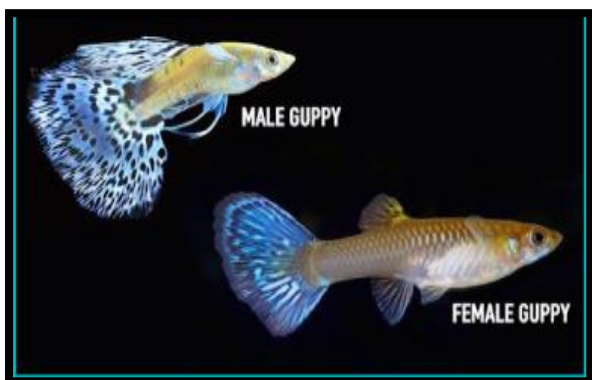
Recent Context

Native to South America and Caribbean, introduced in India for mosquito control; colorful, small, short-lived, also a model organism for ecology, evolution, and behavioral studies.

Key Pointers:

1. **Scientific Name:** *Poecilia reticulata*.
2. **Origin:** Tropical South America and Caribbean.
3. **Use:** Introduced to control mosquito larvae.

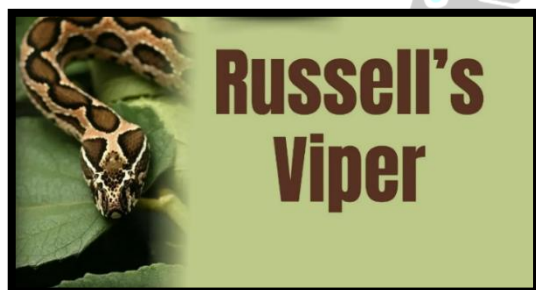
- Distribution:** Freshwater streams and pools across India.
- Physical Traits:** Males smaller, brightly colored; lifespan 2–3 years.
- Research Significance:** Model organism in ecology, evolution, and behavioral studies.
- Ecological Impact:** Invasive, may compete with native species.



Russell's Viper – Highly venomous terrestrial snake

Recent Context

One of India's "Big Four" snakes; responsible for over half of snakebites; venom research shows drugs varespladib and marimastat can counter PLA2 and SVMP toxins effectively.



Key Pointers:

- Scientific Name:** *Daboia russelii*.
- Other Big Four Snakes:** Common krait, Indian cobra, Saw-scaled viper.
- Distribution:** India, Sri Lanka, Bangladesh, Nepal, Myanmar, Thailand, Pakistan, Cambodia, Tibet, China, Taiwan, Indonesia.
- Habitat:** Open, grassy, bushy areas; nocturnal.
- Venom Components:** Phospholipase A2 (PLA2), Snake Venom Metalloproteinase (SVMP).
- Medical Significance:** Polyvalent antivenoms (PVAs) used; research shows varespladib and marimastat inhibit venom toxins.

- IUCN Status:** Least Concern; high medical importance due to snakebite fatalities.

Rinderpest – Viral disease of cloven-hoofed animals

Recent Context

ICAR-NIHSAD, Bhopal, recognized as a Category A Rinderpest Holding Facility by WOA and FAO; no public health risk as it does not infect humans.

Key Pointers:

- Other Names:** Cattle plague.
- Causative Agent:** Virus, **Paramyxoviridae** family, genus **Morbillivirus**.
- Affected Species:** Cattle, buffalo, zebu, African buffalo, eland, kudu, wildebeest, antelopes, bushpigs, warthogs, giraffes.
- Human Health:** No public health risk.
- Global Status:** Declared eradicated globally in 2011; vaccine no longer widely needed.
- Indian Facility:** ICAR-NIHSAD, Bhopal – Category A Holding Facility.
- Designation Authority:** WOA (World Organisation for Animal Health) and FAO (Food and Agriculture Organization).

Biotechnology Policy – High-performance biomanufacturing & bioeconomy

Recent Context

Union Cabinet approved **BioE3 Policy** to foster **high-performance biomanufacturing** and scale India's bioeconomy to **US\$ 300 billion by 2030**.

Key Pointers:

- Objective:** Scale up bio-based products production across sectors, promote innovation, entrepreneurship, and bio-industrial growth.
- Implementing Agency:** **Department of Biotechnology (DBT)**, Government of India.
- Key Focus Areas:**
 - R&D and entrepreneurship
 - Biomanufacturing & Bio-AI hubs
 - Biofoundries
- Definition (FAO):** Bioeconomy = production, use, and conservation of biological resources, including related knowledge, technology, and innovation across all economic sectors.

5. **Applications:**

- Sustainable agriculture, forestry, aquaculture, fishing
- Food and feed manufacturing
- Bio-based products (bioplastics, biodegradable clothing)

6. **Economic Target:** US \$300 billion bioeconomy by 2030.

7. **Strategic Importance:** Promotes sustainable growth, employment, and global competitiveness in biotech manufacturing.

SOURCE – VISION MONTHLY**Agroforestry in India****Recent Context:**

- Government issued **Model Rules 2025** for **felling of trees on agricultural land** to promote agroforestry.

Relevant Pointers

1. **Definition:** National Agroforestry Policy 2014 defines agroforestry as a **land use system integrating trees/shrubs on farmland** to enhance productivity, profitability, diversity, and ecosystem sustainability.
2. **Coverage:** Agroforestry plantations occupy **~8% of India's geographical area**.
3. **Environmental Significance:** Sequesters **13.7–27.2 tonnes CO₂ per hectare per year**, improves soil organic carbon (SOC), reduces soil salinity, erosion, and nutrient leaching.
4. **Economic Significance:** Provides **~50% fuelwood, 60% raw material for paper/pulp, and 9–11% green fodder** for livestock; supports agricultural growth (~4% target).
5. **Food Security & Yield:** Increases crop yield by **~51%**, reduces crop failure risk, and improves community nutrition and stability.
6. **Challenges:** Cumbersome permits, restrictive regulations, shortage of superior planting material, overemphasis on water-intensive species like **Eucalyptus**, and underutilization of **National Transit Pass System (NTPS)**.
7. **Model Rules 2025 Key Points:** Registration of land for agroforestry, felling of trees under agroforestry, and certification/transit of timber produced.

International Conference on Disaster Resilient Infrastructure (ICDRI) & Coastal Resilience**Recent Context:**

- **ICDRI 2025** held in France; first edition in Europe.
- **African Union joined India's Coalition for Disaster Resilient Infrastructure (CDRI)**.
- Conference theme: **"Shaping a Resilient Future for Coastal Regions"**.
- Launch of **call to action for coastal resilience in Small Island Developing States (SIDS)**.

Relevant Pointers

1. **CDRI:** Launched by India at UN Climate Action Summit 2019; 56 members; Secretariat in New Delhi; India as permanent co-chair; partners include UN agencies, MDBs, private sector.
2. **Key Initiatives:** IRIS (for SIDS); Infrastructure Resilience Accelerator Fund (with UNDP & UNDRR).
3. **Coastal Vulnerability:** 60% global population & 2/3 large cities in coastal zones; ~250M Indians within 50 km of coast; threats—cyclones, tsunamis, erosion, sea-level rise.
4. **Major Hazards:** 2004 Tsunami (>2.3 lakh deaths); Cyclone Fani 2019 (US\$1.2B damage in Odisha); 2023 Kutch–Morbi storm surge (2–2.5 m); 33.6% of India's coastline eroding.
5. **Indian Initiatives:** CRZ Notification 2019; ICZMP (Odisha, WB); CVI by INCOIS; Multi-Hazard Vulnerability Maps; CMIS for planning & coastal protection.
6. **Significance:** Protects lives, infrastructure, biodiversity; mangroves and fisheries at risk from climate impacts.
7. **Climate Link:** Climate change worsens floods, storms, sea-level rise; linked with NAPCC missions like National Water Mission for resilience.

Crowd Disaster Management / Stampedes**Recent Context:**

- **Stampede at Chinnaswamy Stadium, Bangalore (2025)** after Royal Challengers Bangalore's IPL victory.
- Several fatalities and injuries reported due to **overcrowding and poor coordination**.

Relevant Pointers

1. **Definition:** UNDRR – surge in crowd due to perceived danger or space loss; also called crushing.
2. **Causes:** Overcrowding (Chinnaswamy 2025), panic/structural failure (Elphinstone 2017), fire hazards (Dabwali 1995), celebrity/event rush (Pushpa 2, 2024).
3. **Crowd Control Failures:** Poor coordination, inadequate exits, weak infrastructure, unplanned free entry schemes.
4. **NDMA Preparedness:** FMEA risk analysis, crowd density norms, multiple exits, multilingual signage, PA systems, medical facilities, disaster vehicles.
5. **NDMA Response:** Mobile alerts, loudspeakers, digital boards, CCTV, watchtowers, wireless comms.
6. **Global Example:** New York – trained crowd control managers for gatherings of 1,000+.
7. **Significance:** Prevents casualties in mass events; needs integrated planning, stakeholder coordination, and real-time monitoring.

Bharat Forecast System (BFS) – High-Resolution Weather Forecasting

Recent Context:

- **Ministry of Earth Sciences** unveiled BFS, one of the world's first **indigenously developed high-resolution weather forecast systems**.

Relevant Pointers

1. **Developer:** IITM Pune, Ministry of Earth Sciences.
2. **Resolution:** Improves forecast scale from 12 km → 6 km; enables village-level predictions.
3. **Data Inputs:** 40 Doppler Weather Radars; Doppler effect improves velocity & local accuracy.
4. **Performance:** 64% more accurate in high-risk zones; forecast time cut from 12–14 hrs → 4–6 hrs.
5. **Global Standing:** Higher resolution than US, UK, EU systems (6 km vs 9–14 km).
6. **Applications:** Disaster management, agriculture, coastal alerts, crop & irrigation planning.
7. **Tech & Economic Gains:** Uses HPC “Arka” (IITM) & “Arunika” (NCMRWF); reduces climate-related losses.

ILO Convention on Biological Hazards at Work (Convention 192)

Recent Context:

- **ILO member states** have adopted the **first-ever international convention** on biological hazards in workplaces.

Relevant Pointers

1. **Scope:** ILO Convention 192 – prevention, protection & preparedness for biological hazards at work.
2. **Member Duties:** National OSH policies; accident & emergency preparedness measures.
3. **Biohazards:** Viruses, bacteria, fungi, toxins, bioactive substances.
4. **High-Risk Jobs:** Healthcare, agriculture, labs, workplaces handling bio-agents.
5. **Drivers:** Climate change, heat stress, antimicrobial overuse.
6. **India's Concerns:** Burden on MSMEs/informal sector; risk of over-regulation.
7. **Existing Framework:** ILO Conventions 155 & 187; OSHWC Code, 2020.

State and Trends of Carbon Pricing 2025 (World Bank Report)

Recent Context:

- **World Bank** released the **State and Trends of Carbon Pricing 2025** report.
- Shows **rapid growth of carbon pricing instruments**, from 5 in 2005 to **80 currently**, with **India, Brazil, and Türkiye** actively developing them.

Relevant Pointers

1. **Coverage:** ~28% of global GHG emissions; 43 carbon taxes + 37 ETSs.
2. **Revenue:** >USD 100 billion generated in 2024.
3. **Sectors Covered:** Power highest; industry next; agriculture & waste minimal.
4. **Credit Balance:** Supply exceeds demand; ~1 billion tons unretired credits (2024).
5. **Global Provisions:** Paris Agreement Art. 6; COP29 rules for 6.2 & 6.4; CBAMs (e.g., EU).
6. **India's Scheme (2023):** Compliance + offset mechanisms under Carbon Credit Trading Scheme.

7. **Trend:** Rapid expansion of carbon pricing as climate mitigation tool.

National Mission for a Green India (GIM)

Recent Context:

- MoEFCC unveiled the revised mission document on World Day to Combat Desertification and Drought (June 17, 2025).



Relevant Pointers

- Genesis & Timeline:**
 - Launched in 2011 under NAPCC as one of the eight climate missions.
 - Revised mission period: 2021–2030.
- Objectives:**
 - Increase forest/tree cover on forest and non-forest lands (afforestation over 24 million hectares).
 - Improve ecosystem services including carbon sequestration.
 - Create additional carbon sink: 2.5–3.0 billion tonnes CO₂ equivalent by 2030.
- Sub-Missions:**
 - Improve forest quality and ecosystem services.
 - Increase forest/tree cover and restore ecosystems.
 - Enhance and diversify incomes of forest-dependent communities.
- Funding:**
 - Partly from GIM's own allocation, rest from National CAMPA Fund.
- Implementation Model:**
 - Bottom-up approach; Joint Forest Management Committees (JFMCs) are key implementers.
- Significance:**

- Contributes to **climate mitigation, biodiversity conservation, and livelihood security** for forest communities.

7. Afforestation & Ecosystem Focus:

- Targets **both forest and non-forest lands**, integrating ecological restoration with community benefits.

Global Drought Outlook, 2025

Released by: OECD

Key Findings:

- Severity:**
 - 40% of global land faces **increasingly frequent and severe droughts**.
 - Recent examples: **Europe (2022), California (2021), Horn of Africa, Somalia**.
- Economic Impact:**
 - Annual cost of drought: **3–7.5% increase per episode**.
 - Disruptions in **hydroelectric power, inland water transport**, crop yields (up to **22% decline**).
 - Example: **Panama Canal drought affected inland transport**.
- Ecological Impact:**
 - Soil moisture decline:** 37% of land since 1980.
 - Groundwater depletion:** 62% of monitored aquifers declining.
- Human Impact:**
 - Droughts cause **34% of disaster-related deaths** globally (WMO, 2021).
 - Exacerbate **poverty, inequality, and displacement**.
- Regional Concerns:**
 - India, Australia**—risk of hydroelectric and irrigation disruptions.

Global Ocean Darkening Threatens Underwater Ecosystems

Study: UK researchers (2003–2022)

Affected areas: Arctic, Antarctic, Gulf Stream region

What is Ocean Darkening?

- **Reduction in light penetration**, shrinking the **photic zone** (~200 m) where ~90% of marine life thrives.
- Causes **limits on photosynthesis, growth, reproduction, and marine communication**.

Causes:

1. **Coastal Oceans:**
 - Nutrient, sediment, and organic material loading (e.g., agricultural runoff, heavy rainfall).
2. **Open Oceans:**
 - Warming surface oceans → algal blooms.
 - Climate-driven changes in **ocean circulation**.

Impacts:

- **Marine ecology:** Reduced productivity and habitat compression.
- **Fisheries:** Decline in fish stocks due to disrupted reproductive cycles.
- **Climate regulation:** Hampers **carbon absorption** and **oxygen production**.

Third United Nations Ocean Conference (UNOC3)

Location & Hosts:

- Held in **Nice, France**; co-hosted by **France and Costa Rica**

Key Outcome: Nice Ocean Action Plan

Highlights:

1. **SDG 14 Roadmap:** Focused on conserving and sustainably using oceans, seas, and marine resources.
 - Recognized **SDG 14 as least funded** of all SDGs.
2. **Plastic Pollution:** Reaffirmed commitment to **develop an international legally binding instrument**.
3. **Climate & Acidification:** Called for **coordinated global action** to reduce impacts on oceans and coastal communities.
4. **Global Collaboration:** Encourages **joint research, policy alignment, and finance mechanisms** for ocean protection.

New Ramsar Sites in Rajasthan, India (2025)

Total Ramsar Sites in India: 91

Rajasthan now has: 4 sites (including **Sambhar Salt Lake, Keoladeo Ghana NP**)

New Sites:

1. **Khichan Wetland**
 - **Location:** Northern Thar Desert, Phalodi District, Rajasthan
 - **Features:** Two water bodies—Ratri Nadi & Vijaysagar Talab, riparian habitat, scrub land
 - **Wildlife:** Large wintering flocks of **migratory demoiselle cranes (Anthropoides virgo)**
2. **Menar Wetland Complex**
 - **Location:** Menar & Kheroda villages, Udaipur District, Rajasthan
 - **Features:** Freshwater monsoon wetland formed by **Braham Talab, Dhand Talab, Kheroda Talab**
 - **Wildlife:** Critically endangered **white-rumped vulture (Gyps bengalensis)**, **long-billed vulture (Gyps indicus)**
 - **Flora & Fauna:** 70+ plant species, mango trees supporting **Indian flying fox (Pteropus giganteus)**

Event Link: Declared on **World Environment Day, 5th June 2025**

- **Theme:** Beat Plastic Pollution

Greater Flamingo Sanctuary, Tamil Nadu

Recent Context -:

Tamil Nadu notified **Greater Flamingo Sanctuary at Dhanushkodi** to protect a critical stopover along the **Central Asian Flyway** for thousands of migratory wetland birds.

About Greater Flamingo (Prelims Pointers):

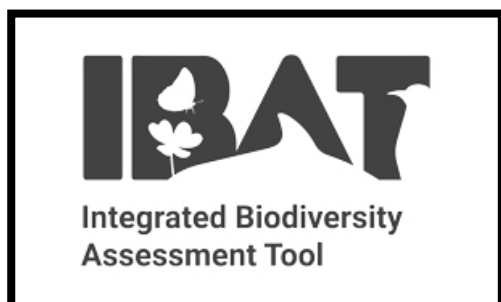
1. **Scientific Name:** *Phoenicopterus roseus*
2. **IUCN Status:** Least Concern
3. **Distribution:** Africa, western Asia (India), southern Europe
4. **Habitat:** Shallow saline or alkaline wetlands for breeding
5. **Behaviour:** Highly philopatric; disperses widely outside breeding season

- Unique Breeding Site in India:** Kachchh Desert Wildlife Sanctuary, Great Rann of Kachchh – called “Flamingo City”
- Significance:** Protects migratory stopover along **Central Asian Flyway**

IBAT Alliance

Recent Context -:

IBAT Alliance **doubled its investment in biodiversity data** from 2023–2024, supporting global datasets to enhance monitoring of protected areas, threatened species, and key biodiversity sites.



About IBAT Alliance (Prelims Pointers):

- Headquarters:** United Kingdom
- Founded:** 2008
- Members:** BirdLife International, Conservation International, IUCN, UNEP-WCMC
- Mission:** Provide data, tools, and guidance on biodiversity risks
- Key Datasets Supported:** World Database on Protected Areas, IUCN Red List, World Database of Key Biodiversity Areas
- Focus:** Strengthening global biodiversity monitoring and conservation decision-making
- Significance:** Helps organisations mitigate biodiversity-related risks and align with conservation priorities

Energy Transition Index (ETI) 2025

Recent Context -:

WEF released **ETI 2025**, ranking countries on progress from fossil fuels to clean energy. India slipped from **63rd (2024) to 71st**, indicating slower energy transition progress.

About ETI (Prelims Pointers):

- Purpose:** Measures countries' energy transition from fossil fuels to clean energy

- Top Rankers (2025):** Sweden, Finland, Denmark, Norway
- India's Rank:** 71 (down from 63 in 2024)
- Two Main Dimensions:** System Performance & Transition Readiness
- System Performance:** Energy security, equity, sustainability
- Transition Readiness:** Regulation, infrastructure, investment, and capabilities
- Methodology:** 43 indicators; scores countries 0–100 using multi-source data

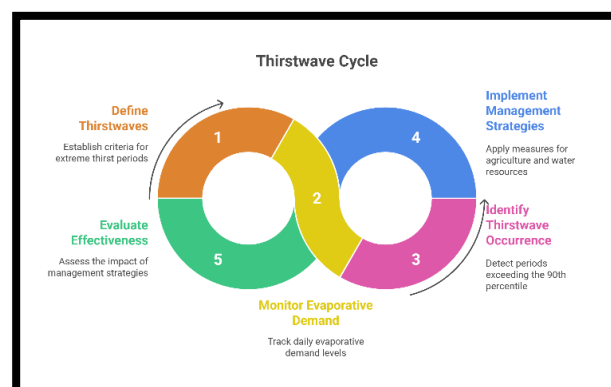
Thirstwave

Recent Context -:

Researchers defined ‘**Thirstwaves**’, periods of extreme atmospheric thirst (≥ 3 consecutive days with evaporative demand above 90th percentile), important for **agriculture and water resource management**.

About Thirstwave (Prelims Pointers):

- Definition:** ≥ 3 consecutive days with daily evaporative demand above historical 90th percentile
- Evaporative Demand:** Measures how “thirsty” the atmosphere is
- Drivers:** Temperature, wind speed, humidity, sunshine
- Impact:** Helps in managing irrigation and crop yields
- Research Significance:** Identifies periods of extreme drought stress for farming
- Novelty:** Newly coined term in climate and agricultural research
- Geographical Relevance:** Can affect water-stressed regions globally



Salkhan Fossil Park, Uttar Pradesh

Recent Context :-

Salkhan Fossil Park (Sonbhadra) added to **UNESCO tentative World Heritage list**, representing **Precambrian stromatolites** and providing insight into Earth's early oxygenation and life evolution.

About Salkhan Fossil Park (Prelims Pointers):

1. **Location:** Kaimur Range, Sonbhadra District, Uttar Pradesh
2. **Significance:** Geo-heritage site under IUCN 2020 "Evolution of Life" guidelines
3. **Age:** Fossils approx. 1.4 billion years old
4. **Key Fossils:** Stromatolites (blue-green algae)
5. **Historical Event:** Records **Great Oxidation Event** – first atmospheric oxygen accumulation
6. **Scientific Importance:** Shows Precambrian era (~85% of Earth's history) and early environmental changes
7. **Adjacent Landmark:** Kaimur Wildlife Sanctuary

SOURCE – DRISHTI MONTHLY

3rd UN Ocean Conference (UNOC3), 2025

Recent Context :-

UNOC3 held in Nice, France, adopted "**Our Ocean, Our Future: United for Urgent Action**", reinforcing **SDG 14** and tackling climate change, biodiversity loss, and pollution threatening oceans.

About UNOC3 (Prelims Pointers):

1. **Purpose:** High-level UN summit to accelerate SDG 14 (Life Below Water) targets — sustainable use and conservation of oceans, seas, and marine resources.
2. **Key Declaration:** "Our Ocean, Our Future: United for Urgent Action" focusing on triple planetary crisis.
3. **Triple Planetary Crisis:** Climate change, biodiversity loss, and pollution & waste — interlinked threats affecting oceans.
4. **Major Objectives:** Strengthen global ocean governance, address ocean acidification, climate impacts, overfishing, marine pollution, and biodiversity loss.
5. **Key Outcomes:**

- Promote full implementation of CBD, Kunming-Montreal Biodiversity Framework, BBNJ Agreement
- Support sustainable ocean economies for SIDS and LDCs
- Integrate scientific research, indigenous knowledge, and ocean mapping in policy-making

6. Major Initiatives Announced:

- EU: €1B investment for ocean conservation and sustainable fishing
- French Polynesia: Largest marine protected area (5 million sq km)
- Spain: Five new marine protected areas
- Indonesia & World Bank: Coral Bond for reef restoration
- 37-country High Ambition Coalition for a Quiet Ocean

Biopesticide for Cardamom Thrips

Recent Context :-

ICAR-IISR Kozhikode developed an **eco-friendly biopesticide using *Lecanicillium psalliotae*** to control cardamom thrips, reducing chemical use and promoting sustainable, export-compliant cardamom cultivation.

About the Biopesticide :

1. **Pest Targeted:** Cardamom thrips (*Sciothrips cardamomi*), a major pest affecting cardamom plantations.
2. **Active Agent:** *Lecanicillium psalliotae*, an entomopathogenic fungus that infects larvae, pupae, and adult pests.
3. **Mode of Action:** Penetrates pest outer layer, feeds internally, acting on contact; similar to *Beauveria bassiana* and *Metarhizium anisopliae*.
4. **Formulation & Application:** Granular form mixed with farmyard manure; applied 3–4 times to plant basins.
5. **Benefits:** Cost-effective, reduces dependence on chemical pesticides, enhances root growth, improves soil nutrient availability.

6. **Significance:** Eco-friendly, non-toxic, minimizes environmental and health risks.
7. **Strategic Role:** Supports Integrated Pest Management (IPM), sustainable agriculture, and meets international residue standards for exports.

Reforming India's Food and Fertiliser Subsidies

Context:

With **extreme poverty at historic lows (5.3%)** and rising subsidy bills, India faces a growing need to reform **food and fertiliser subsidies** for efficiency and fiscal sustainability.

ABOUT

1. **Definition & Types:** Govt. support via direct (cash – PM-KISAN) & indirect (price control/tax exemption – PDS, LPG) means.
2. **Scale & Impact:** FY26 food subsidy ₹2.03 lakh cr; fertiliser ₹1.56 lakh cr; PDS covers 800M; poverty fell 27.1%→5.3% (2011–2022).
3. **Issues:** Poor targeting, ghost beneficiaries, cereal-heavy nutrition gap, fertiliser imbalance (urea overuse), fiscal strain.
4. **Food Subsidy Measures:** PMGKAY merged with NFSA, digitised ration cards, TPDS focus on BPL/AAY, expanded PDS items.
5. **Fertiliser Measures:** Neem-coated urea, Nutrient-Based Subsidy, DBT pilots, price regulation for urea/DAP/MOP.
6. **Reform Needs:** Food/fertiliser coupons, better targeting via Aadhaar/income data, promote bio-fertilisers & natural farming.
7. **Significance:** Supports welfare, food security, and agri productivity but demands efficiency to sustain fiscal health.

Revised Guidelines Under the Biomass Programme (Phase-I, 2021–26)

Context:

The **Ministry of New and Renewable Energy (MNRE)** revised the Biomass Programme guidelines to **boost clean energy adoption, support MSMEs, and address stubble burning** with greater flexibility and financial incentives.

ABOUT

1. **Launch & Objective:** MNRE under National Bioenergy Programme Phase-I (2021–26); promotes biomass briquette/pellet plants & industrial biomass cogeneration (non-bagasse).
2. **Financial Aid:** CFA – ₹9 lakh/MTPH for briquette/pellet plants (max ₹45 lakh), ₹40 lakh/MW for cogeneration (max ₹5 cr).
3. **Monitoring:** IoT/SCADA-based remote monitoring; projects via online portal.
4. **Eligibility & Oversight:** Only new equipment; inspections by SNAs & SSS-NIBE.
5. **Recent Revisions:** Less paperwork, flexible sale contracts, IoT in place of costly SCADA, pro-rata CFA based on plant operation.
6. **Special Provision:** Pellet units in Delhi–Punjab–Haryana–NCR can opt MNRE or CPCB stubble management scheme.
7. **Rationale for Change:** Cut MSME regulatory burden, reduce monitoring costs, improve stubble utilisation, and make CFA norms flexible.

SOURCE- DOWN TO EARTH

Food Crops & Ethanol-Blending Programme in India

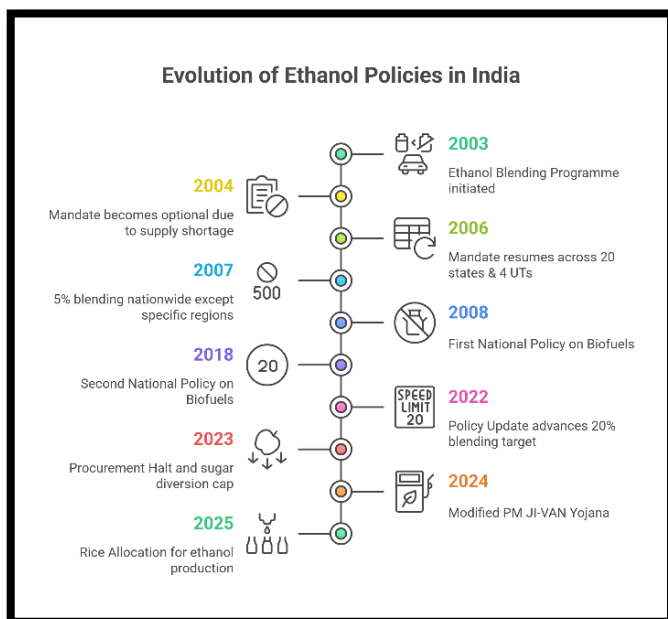
Context

- India relies heavily on **food crops (sugarcane, rice, maize)** for its ethanol-blending programme.
- This can impact **food inflation, nutrition availability**, and food security, given that over 55% of Indians struggle to afford a healthy diet (UN, 2024).
- The programme also aims to **reduce fossil fuel imports, cut carbon emissions, and boost rural incomes, targeting 20% ethanol blending by 2025.**

Ethanol and Its Agricultural Roots

- **Primary feedstocks:**
 - **Sugarcane-based:** C-heavy & B-heavy molasses, sugarcane juice, surplus sugar
 - **Diversified feedstocks:** Surplus rice (via FCI), maize
- **Economic & environmental trade-offs:**
 - Sugar is lucrative for ethanol but **high water footprint**

- Maize is less water-intensive but has **lower ethanol yield**



- **Food security concern:** Ethanol use from food crops can reduce **nutrition availability** for the population.

Avian Influenza (Bird Flu, H5N1)

Context

- Recently, **Brazil confirmed an outbreak of avian influenza**, leading countries including **India, China, South Africa, and the EU to ban poultry imports** from Brazil by May-end.
- Bird flu is a **global concern due to its high contagion among birds and potential human health risks**.

ABOUT

1. **Nature & Type:** Highly contagious Influenza A virus (subtype H5N1), primarily in birds; can infect humans & mammals.
2. **Transmission:**
3. **Bird-to-bird:** Direct contact, droppings, contaminated surfaces; spread via migratory birds.
4. **Bird-to-human:** Rare; close contact with infected birds or environment.
5. **Human-to-human:** Currently limited, but mutation risk exists.

6. **Human Symptoms:** Fever, cough, sore throat → pneumonia, respiratory failure, multi-organ damage; >50% fatality rate.
7. **Treatment & Prevention:** Early detection; antivirals like Oseltamivir; poultry vaccines available, human vaccines in development.
8. **Significance:** Pandemic potential, economic losses from poultry bans, global monitoring by WHO–FAO–OIE.

Dam Project on the Siang River (Siang Upper Multipurpose Project - SUMP)

Context

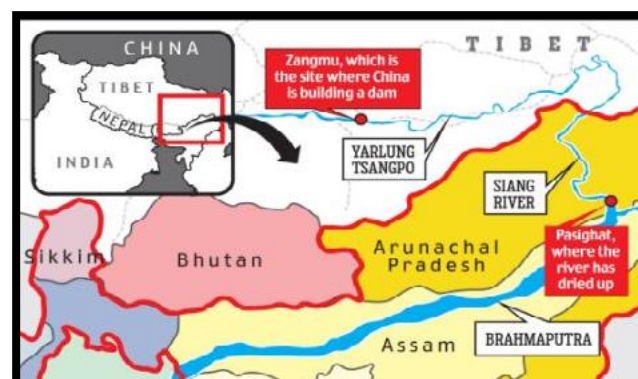
- Arunachal Pradesh government signed an **MoU with a village in Upper Siang district for a prefeasibility survey**.
- Planned as **India's largest dam project (11.2 GW)**.

About the Project

- **River:** Siang (known as Yarlung Tsangpo in Tibet), a major tributary of the Brahmaputra.
- **Origin:** Near Mount Kailash, Tibet.
- **Proposed by:** NITI Aayog (2017), under prefeasibility by NHPC.
- **Multipurpose:** Hydropower, flood control, irrigation, water supply.
- **Regional Context:** China is building a **66-GW hydropower project upstream**.

Concerns

1. **Social:** Displacement of local communities (e.g., Adi tribe).
2. **Environmental:** Ecosystem disruption, fisheries loss, downstream water stress.
3. **Seismic Risks:** Earthquake-prone region; dam safety concerns.



Sponge Parks in India

Concept

- **Urban green spaces** designed to **absorb, filter, and store rainwater.**
- Use **permeable surfaces, rain gardens, bioswales, native vegetation.**
- Inspired by China's '**sponge city**' concept.

Policy Push

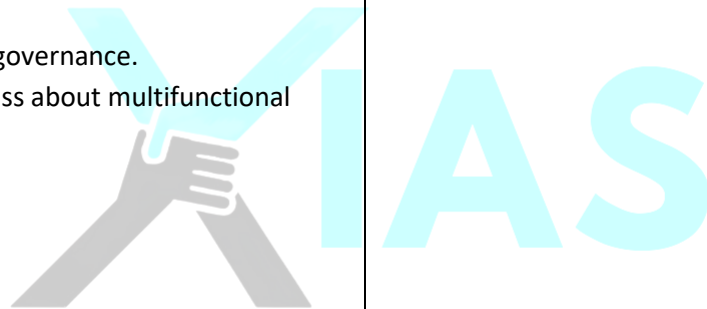
- **MoHUA** promotes sponge parks under **AMRUT and Smart Cities Mission.**
- Pilot cities: Pune, Bengaluru, Bhubaneswar.
- **NIUA Guidelines (2023):** Nature-based solutions for urban climate adaptation.

Benefits

- Reduce urban flooding and waterlogging.
- Recharge groundwater.
- Improve stormwater management and urban resilience.

Challenges

- Limited technical expertise in hydrological landscaping.
- Fragmented urban governance.
- Low public awareness about multifunctional benefits.





TOPICS COVERED-

- **Core-Mantle Connectivity** – Precious metals like gold, platinum, and ruthenium leak from Earth’s core to surface via mantle plumes, showing the core is not geochemically isolated.
- **Tardigrades Aboard Axiom-4 Mission** – India’s Shubhanshu Shukla pilots Axiom-4 carrying tardigrades to study survival in space for Gaganyaan prep.
- **Stratospheric Aerosol Injection (SAI)** – Geoengineering method spraying reflective aerosols into the stratosphere to temporarily cool Earth.
- **Internet of Things (IoT) Revolution** – Networked smart devices transforming homes, cities, industries, with challenges in cybersecurity and interoperability.
- **India’s First Gene-Edited Sheep** – CRISPR-Cas9 used to edit myostatin gene, increasing muscle mass by 30% without foreign DNA.
- **World’s First Gene-Edited Rice (India)** – CRISPR-edited DRR Dhan 100 & Pusa DST Rice 1 are climate-resilient, high-yield, non-GM rice varieties.
- **SHUKR Gene in Flowering Plants** – Gene regulates pollen viability, explaining rapid flowering plant diversification (Darwin’s “Abominable Mystery”).
- **Thermophilic Bacteria** – Heat-loving bacteria from Rajgir hot springs producing antibiotics and industrially useful enzymes.
- **Nanozymes** – Artificial nanomaterials mimicking enzymes, used to prevent blood clotting and treat PTE/COVID complications.
- **Andromeda Galaxy** – Closest major galactic neighbor (M31), approaching Milky Way at 110 km/s, likely to merge in 4–5 billion years.
- **INS Arnala – India’s First ASW-SWC** – Indigenous anti-submarine warfare shallow-water craft boosting coastal and subsurface defence.
- **AI-Enabled Piezo-Photocatalytic Water Purification** – INST Mohali developed AI-assisted, biodegradable system removing industrial dyes from wastewater.
- **Solar-Driven PEC Device for Green Hydrogen** – CeNS Bengaluru’s solar device splits water using abundant materials for sustainable hydrogen production.
- **Science & Technology Clusters** – India’s regional tech consortiums enabling quantum communication, AR/VR platforms, and emerging tech solutions.
- **Folate (Vitamin B9)** – Water-soluble vitamin essential for DNA/RNA synthesis, RBC formation, CNS development, and preventing birth defects.
- **Fiber Optic Drones** – Tethered drones using glass fiber cables for fast, jam-resistant, long-range operations.
- **DHRUVA – Digital Hub for Reference and Unique Virtual Address** – Provides unique digital addresses for homes to aid governance, logistics, and e-commerce.
- **HIV Prevention Drug – Lenacapavir** – Long-acting antiretroviral for pre-exposure prophylaxis to prevent HIV infection.
- **First Pangenome of Asian Rice** – Integrates cultivated & wild rice genomes, aiding breeding for high-yield and climate-resilient varieties.

- **Indian Yak Genome Sequencing** – Chromosome-level genome decoding for cold tolerance, disease resistance, and milk production.
- **Hillchol – Oral Cholera Vaccine** – Bharat Biotech’s effective oral vaccine against Ogawa and Inaba strains, supporting epidemic preparedness.
- **Operation Sindoor – Key Defence Technologies** – India employed advanced indigenous and imported missiles & loitering munitions to target PoK terrorists.
- **AMCA – Advanced Medium Combat Aircraft** – India’s 5th-gen stealth fighter with multirole capabilities, indigenous design, and advanced weaponry.



SCIENCE AND TECHNOLOGY

SOURCE – DRISHTI MONTHLY

Core-Mantle Connectivity

Recent Context :-

German research reveals precious metals like gold, platinum, and ruthenium leak from Earth's core to surface via mantle plumes, challenging the belief that the core is geochemically isolated.

About :-

1. **Discovery:** Ruthenium-100 isotope in Hawaiian volcanic rocks indicates core material reaches surface via mantle plumes.
2. **Core Metals:** Core holds 99.999% of Earth's gold and other siderophile elements (Pt, Ir, Ru).
3. **Mantle Extent:** 83% of Earth's volume, from Moho discontinuity (~7–35 km) to core boundary at 2,900 km.
4. **Mantle Composition:** Silicate rocks (olivine, garnet, pyroxene), ~45% oxygen, 21% silicon, 23% magnesium.
5. **Core Structure:** Outer core (liquid iron-nickel, 4,000–6,000°C) drives geodynamo; inner core (solid iron-nickel, 5,000–7,000°C) rotates slightly faster than surface.
6. **Asthenosphere:** Ductile upper mantle (80–200 km depth), source of magma, enables tectonic plate movement.
7. **Seismicity:** Earthquakes occur in mantle subduction zones up to 670 km depth.

Tardigrades Aboard Axiom-4 Mission to Test Space Resilience

Recent Context :-

Indian astronaut Shubhanshu Shukla will pilot Axiom-4 to the ISS, carrying tardigrades for ISRO experiments to study survival of life in extreme space conditions, aiding future Gaganyaan mission.



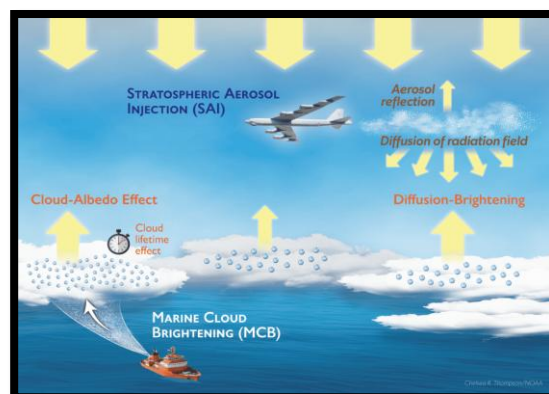
About :-

1. **Axiom-4 Mission:** 4th private flight to ISS by Axiom Space using SpaceX Crew Dragon; 14-day stay with international crew (USA, India, Poland, Hungary).
2. **Historic Milestone:** Shubhanshu Shukla — 2nd Indian in space after Rakesh Sharma (1984), 1st Indian aboard ISS.
3. **Key Experiments:** Tardigrade resilience in microgravity, crop growth (moong dal), cyanobacteria studies, screen-use effects in zero-G.
4. **Tardigrade Facts:** Microscopic (~0.5 mm), eight-legged, survive -272.95°C to 150°C, extreme radiation, vacuum, high pressures, revived after 30 years frozen.
5. **Survival Mechanisms:** Cryptobiosis, anhydrobiosis (tun state), CAHS proteins forming protective cell gel.
6. **Significance for India:** Strengthens ISRO-NASA collaboration, trains crew for Gaganyaan 2027, boosts astrobiology research.
7. **Zero-G Indicator:** Swan plushie named *Joy*; symbolic cue for entering weightlessness.

Stratospheric Aerosol Injection (SAI)

Recent Context :-

Scientists are assessing Stratospheric Aerosol Injection, a geoengineering method inspired by volcanic eruptions, to reflect sunlight, cool the Earth, and provide a temporary, cost-effective climate change mitigation strategy.



About :-

1. **Definition:** SAI — solar geoengineering technique to reflect sunlight back into space,

reducing heat absorption and cooling the planet.

2. **Inspiration:** Modeled after 1991 Mount Pinatubo eruption, which injected sulfate aerosols into the stratosphere, lowering global temperatures by ~0.5°C.
3. **Mechanism:** Releases reflective particles (sulfate aerosols, calcium carbonate) into stratosphere (10–50 km), increasing Earth's albedo.
4. **Longevity:** Stratospheric particles persist for months–years, unlike lower atmosphere particles which rain out quickly.
5. **Regional Impact:** Cooling more effective in polar regions; weaker in tropics despite higher warming levels.
6. **Environmental Risks:** Ozone layer damage, acid rain, altered precipitation patterns, monsoon disruption, uneven cooling.
7. **Limitation:** Only masks warming; doesn't reduce CO₂; may affect methane life span, ice formation, and cloud microphysics.

SOURCE-THE HINDU

Internet of Things (IoT) Revolution and Smart Future

Recent Context -:

IoT is transforming homes, cities, healthcare, transport, and industries through interconnected smart devices, but challenges such as cybersecurity threats, interoperability issues, and infrastructure demands remain critical for sustainable adoption.

About -:

1. **Definition:** IoT — network of physical devices with sensors, software, and connectivity to collect, exchange, and act on data.
2. **Key Features:** Connectivity, automation, remote monitoring, interoperability, scalability, AI-driven analytics, personalization.
3. **Major Components:** Sensors & actuators, connectivity protocols (Wi-Fi, Bluetooth, 5G), IoT gateways, cloud computing, user interfaces.

4. **Applications:** Smart cities, smart homes, healthcare, transport, industrial safety, agriculture, and food supply monitoring.
5. **Example Initiatives:** Jaipur Smart City, Google Nest Thermostat, Tesla Autopilot, Siemens IoT fire safety, Fylo precision farming.
6. **Risks:** Cybersecurity vulnerabilities, unauthorized access, privacy breaches, lack of standardization, AI-powered cyber threats.
7. **Data Impact:** IoT generates ~73 zettabytes/year, requiring advanced cloud/edge infrastructure and energy-efficient solutions.

India's First Gene-Edited Sheep

Recent Context :

A university in Kashmir created India's **first gene-edited sheep** using **CRISPR-Cas9**, editing the **myostatin gene** to increase muscle mass by 30%, similar to European Texel sheep.

ABOUT:

1. **Technology:** CRISPR-Cas9 enables precise gene editing **without foreign DNA**.
2. **Target gene:** Myostatin gene—regulates muscle growth; editing increases meat yield.
3. **Applications:** Animal biotechnology: meat, milk, wool, disease-resistant livestock.
4. **Difference from crossbreeding:** Crossbreeding is slow; gene editing is faster, precise.
5. **Difference from GM:** No foreign DNA is inserted; unlike GM organisms.
6. **Regulation:** Complies with India's biotech norms; more acceptable to regulators.
7. **Significance:** Boosts livestock productivity, reduces dependency on imports, enhances food security.

India Produces World's First Gene-Edited Rice

Recent Context :

Scientists developed **climate-resilient rice varieties** 'DRR Dhan 100 (Kamala)' and 'Pusa DST Rice 1' using **CRISPR-Cas9 SDN-1 & SDN-2**, improving yield, drought tolerance, and reducing irrigation needs.

ABOUT:

1. **Genome editing:** SDN-1 & SDN-2 use native genome; SDN-3 involves foreign DNA (GM crop).
2. **Varieties enhanced:** Samba Mahsuri & MTU1010; better **stress tolerance, yield, climate adaptability.**
3. **Benefits:** 25% more yield, water-saving, 20% reduction in GHG emissions.
4. **Non-GM:** No foreign DNA; avoids GMO apprehensions.
5. **Regulation:** Under **EPA, 1986**; gene editing encouraged with amendments.
6. **Scientific significance:** Supports precision breeding, faster crop improvement.
7. **Global first:** India is the **first country to develop gene-edited rice varieties.**

SHUKR Gene in Flowering Plants

Recent Context -:

The SHUKR gene, discovered in *Arabidopsis thaliana*, plays a key role in pollen viability and may help explain Darwin's "Abominable Mystery" of rapid flowering plant diversification.

About -:

1. **Discovery:** Found in flowering plants like *Arabidopsis thaliana*.
2. **Evolutionary Origin:** Appeared ~125 million years ago in eudicots (¾ of all flowering plants).
3. **Function:** Produces viable pollen during the sporophyte phase for reproduction.
4. **Genetic Mechanism:** Controls F-box genes, replacing old proteins to aid pollen growth.
5. **Adaptation Role:** Enables survival under heat, cold, and drought.
6. **Darwin's "Abominable Mystery":** Rapid diversification of flowering plants contrasted with gradual evolution; SHUKR gene offers a molecular explanation.
7. **Significance:** Links plant reproductive success with environmental adaptability over evolutionary timescales.

Thermophilic Bacteria

Recent Context -:

Researchers have discovered antibiotic-producing

thermophilic bacteria in Rajgir hot spring, Nalanda, Bihar, highlighting their potential in medicine, biotechnology, and industrial processes.

About -:

1. **Definition:** Also called *thermophiles*; thrive in high-temperature environments like hot springs, deep-sea vents, and compost piles.
2. **Ecological Niche:** Survive in mineral-rich, low-competition habitats.
3. **Antibiotic Production:** Produce antibiotics to outcompete other microorganisms.
4. **Industrial Uses:** Applied in medicine production, PCR testing, waste decomposition, and biofuel generation.
5. **Key Examples:**
 - *Thermus aquaticus* – source of Taq polymerase in PCR.
 - *Actinobacteria* – known for antibiotic production.
 - *Sulfolobus acidocaldarius* – thrives in acidic hot springs.
6. **Recent Discovery:** Antibiotic-producing thermophiles found in Rajgir hot spring, Bihar.
7. **Significance:** Useful for developing heat-stable enzymes and novel antibiotics.

Nanozymes

Recent Context -:

Researchers have developed an artificial metal-based nanozyme to prevent blood clotting, offering potential treatment for pulmonary thromboembolism (PTE) and COVID-19-related complications.

About -:

1. **Definition:** Nanomaterials exhibiting enzyme-like properties, mimicking natural enzyme activity.
2. **Types:** Metallic, metal oxide-based, carbon-based, and other nanomaterial compositions.
3. **Advantages:** Recyclable, cost-effective, and easy to manufacture compared to natural enzymes.
4. **Applications:** Diagnostic medicine, targeted drug delivery, biosensing, and treating ROS-related neurological disorders.

5. **Mechanism:** Accelerate specific biochemical reactions similar to natural enzymes.
6. **Recent Research:** Artificial metal-based nanozyme created to prevent haemostasis (blood clot formation).
7. **Health Relevance:** Potential treatment for conditions like PTE and COVID-19 complications involving clotting.

Andromeda Galaxy

Recent Context -:

The Andromeda Galaxy (M31), our closest major galactic neighbor, is approaching the Milky Way at 110 km/s, potentially merging in about 4–5 billion years.

About -:

1. **Other Name:** Also known as Messier 31 (M31).
2. **Distance:** Approximately 2.5 million light-years from Earth.
3. **Type:** Barred spiral galaxy, similar in structure to the Milky Way.
4. **Motion:** Moving towards the Milky Way at ~110 km/s.
5. **Future Event:** Expected to merge with the Milky Way in billions of years.
6. **Structure Feature:** Contains a central bar-like structure formed by stars.
7. **Astronomical Significance:** Nearest major galaxy, important for studying galactic formation and evolution.

SOURCE-PIB

INS Arnala – India's First Anti-Submarine Warfare Shallow Water Craft (ASW-SWC)

Recent Context -:

INS Arnala, the first indigenously built ASW-SWC under Aatmanirbhar Bharat, will be commissioned on 18 June 2025, boosting India's coastal defence and subsurface surveillance capabilities.

About -:

1. **Commissioning Date & Location:** 18 June 2025, Naval Dockyard, Visakhapatnam.

2. **Series:** First in a series of 16 ASW-SWC class ships for the Indian Navy.
3. **Builder:** Garden Reach Shipbuilders & Engineers (GRSE), Kolkata, in PPP with L&T Shipbuilders.
4. **Indigenous Content:** Over 80%, involving BEL, L&T, Mahindra Defence, MEIL, and 55+ MSMEs.
5. **Technical Specs:** Length – 77.6 m; Displacement – ~1490 tonnes; Diesel Engine–Waterjet propulsion.
6. **Capabilities:** Subsurface surveillance, ASW operations, SAR, Low-Intensity Maritime Operations.



7. **Heritage Link:** Named after Arnala Fort, Maharashtra, with historical maritime significance.

AI-Enabled Piezo-Photocatalytic Water Purification System – INST Mohali

Recent Context -:

INST Mohali, under DST, developed a biodegradable, low-cost water purification system using sunlight, vibrations, and AI to remove toxic industrial dyes like Methylene Blue and Congo Red from wastewater.

About -:

1. **Developer:** Institute of Nano Science and Technology (INST), Mohali under Department of Science & Technology (DST).
2. **Core Material:** 3D-printed **Poly(lactic Acid) (PLA)** scaffold – biodegradable polymer.
3. **Catalyst:** **Bismuth Ferrite (BiFeO₃)** – enables *piezo-photocatalysis*.
4. **Working Principle:**

- **Photocatalysis:** Sunlight activates BiFeO_3 to degrade pollutants.
 - **Piezocatalysis:** Mechanical vibrations trigger catalyst activity, even on cloudy days.
5. **AI Role:** Machine learning (Artificial Neural Networks) predicts performance with 99% accuracy for real-world optimization.
 6. **Performance:** Removes **98.9% Congo Red** & **74.3% Methylene Blue** without hazardous chemicals.
 7. **Sustainability:** Supports **SDG 6, 9, 12, 13**; scalable for textile, pharma industries, and rural water purification.

Solar-Driven Photoelectrochemical (PEC) Device for Green Hydrogen – CeNS Bengaluru

Recent Context -:

CeNS Bengaluru scientists developed a next-generation PEC solar device using earth-abundant materials to split water into hydrogen and oxygen directly, enabling clean, affordable, fossil-fuel-free green hydrogen production at scale.

About -:

1. **Institution:** Centre for Nano and Soft Matter Sciences (CeNS), Bengaluru under DST.
2. **Technology:** **n-i-p heterojunction** – n-type TiO_2 , intrinsic Si, p-type NiO.
3. **Fabrication:** Magnetron sputtering – scalable, industry-ready process.
4. **Performance:** 600 mV surface photovoltage, low onset potential ($\sim 0.11 \text{ V}_{\text{RHE}}$), stable for 10+ hrs with only 4% degradation.
5. **Advantages:** Direct solar-to-hydrogen conversion, no rare or toxic materials, low voltage requirement.
6. **Significance:** Supports **India's Green Hydrogen Mission**, net-zero by 2070; potential for home, industrial, and mobility applications.
7. **Publication:** Featured in *Journal of Materials Chemistry A* (Royal Society of Chemistry).

SOURCE- VISION MONTHLY

Science and Technology (S&T) Clusters – Emerging Tech & Quantum Communication Developments

Recent Context -:

The 2024–25 S&T Clusters Report showcased initiatives like Kalaanubhav.in, India's ranking in Harvard's Critical and Emerging Technologies Index, and DRDO–IIT Delhi's milestone in quantum entanglement-based secure communication.

About -:

1. **S&T Clusters Initiative:** Launched 2020 on PM-STIAC recommendation; consortium model for regional, demand-driven tech solutions; nodal agency – **Office of the PSA** under Cabinet Secretary.
2. **Kalaanubhav.in:** AR/VR-enabled artisan marketplace under S&T Clusters.
3. **Critical & Emerging Technologies Index:** Published by **Harvard Kennedy School**; assesses 25 countries in AI, biotech, semiconductors, space, quantum tech using 6 criteria (incl. GDP contribution, supply chain risk).
4. **India's Performance:** Lags behind US, China, Europe; weakest in semiconductor technology.
5. **Quantum Communication Breakthrough:** DRDO & IIT Delhi demonstrated **free-space quantum secure communication** over $\sim 1 \text{ km}$ with QBER $< 7\%$.
6. **Previous Record:** ISRO achieved 300 m free-space QKD in 2021.
7. **QKD Basics:** Uses quantum entanglement & cryptography for hack-proof data transfer; key for quantum internet & cybersecurity.

Folate (Vitamin B9)

Recent Context -:

Folate, the natural form of vitamin B9, is vital for DNA/RNA synthesis, RBC production, and nervous system development; deficiency leads to anaemia and developmental issues.

About -:

1. **Nature:** Water-soluble vitamin; naturally occurring form of vitamin B9 (different from synthetic folic acid).
2. **Sources:** Green leafy vegetables (spinach, fenugreek), legumes, citrus fruits, nuts, whole grains, fortified cereals.
3. **Functions:** DNA/RNA synthesis & repair, RBC production, oxygen transport, CNS development in early life.
4. **Deficiency:** Causes anaemia, neural tube defects in foetus, developmental delays.
5. **Medical Uses:** Folate supplements used to prevent/treat deficiencies of B6, B9, and B12.
6. **Special Needs:** Pregnant women require higher folate to prevent birth defects.
7. **Properties:** Recyclable in the body but must be replenished via diet due to water-solubility.

FIBER OPTIC DRONES

- **Definition:** Drones tethered to operator via fiber optic cables (up to 20 km), replacing radio links.
- **Material:** Cable made of glass fibers thinner than human hair.
- **Advantages:**
 - Faster speeds & longer distances.
 - Immune to jamming & interception by Electronic Warfare (EW).
- **Limitation:** Fiber supports a single communication channel at one time.
- **Recent Context:** Used in Russia-Ukraine war for EW-resistant operations.

DHRUVA – Digital Hub for Reference and Unique Virtual Address

- **Nodal Agency:** Department of Posts (DoP).
- **Nature:** Digital Public Infrastructure (DPI) for unique digital address to every home.
- **Aim:** Foundational public infrastructure for governance, service delivery & e-commerce.
- **Two Layers:**
 1. **DIGIPIN** – 10-digit alphanumeric code for 4x4 m grids using lat-long coordinates.

2. **Digital Address Layer** – Consent-based, user-friendly labels linked to DIGIPIN.

- **Benefits:**
 - Citizens: Better scheme delivery, emergency response.
 - Private sector: Accurate logistics, banking KYC.
 - Governance: Urban planning, targeted welfare delivery.
- **Features:** Privacy, interoperability, scalability, transparency.

INDIA'S FIRST GENE-EDITED SHEEP

- **Developed by:** Kashmir University + ICAR.
- **Technology:** CRISPR-Cas9 (cut-and-paste DNA editing).
- **Gene Targeted:** Myostatin gene → 30% muscle growth boost.
- **Note:** No foreign DNA inserted → different from transgenic.
- **Earlier:** NDRI developed gene-edited buffalo embryo.
- **Ethical Concerns:**
 - Designer animals/humans.
 - Risk of eugenics, discrimination.
 - Off-target mutations, mosaicism.
 - Animal welfare issues.
- **Global Context:** UNESCO's International Bioethics Committee studying genome editing.

HIV PREVENTION DRUG – LENACAPAVIR

- **Approved by:** US FDA; WHO prequalification expected.
- **Use:** Long-acting HIV prevention (PrEP – Pre-Exposure Prophylaxis).
- **WHO Current PrEP Options:** Oral PrEP, dapivirine vaginal ring, CAB-LA injection.
- **Mechanism:** Antiretroviral → prevents HIV from infecting immune cells.
- **About HIV:**
 - Attacks CD4 T cells → weakens immunity.

- Transmitted via blood, semen, vaginal fluids, breast milk, mother-to-child.
- Untreated HIV → AIDS.
- **India Context:** 2.5 million people living with HIV (HIV Estimations 2023).

SOURCE – INDIAN EXPRESS

First Pangenome of Asian Rice

Recent Context :

International team assembled the **first pangenome of Asian rice**, integrating **144 cultivated and wild varieties**, revealing 28,907 core genes and 13,728 wild-rice-specific genes.

ABOUT:

1. **Pangenome:** Entire gene set of a species; core + accessory genes.
2. **Technology used:** PacBio HiFi sequencing & bioinformatics for assembly.
3. **Findings:** 69,531 genes; 20% unique to wild rice.
4. **Evolutionary insight:** Supports Or-IIIa wild rice as ancestor of japonica rice.
5. **Applications:** Develop high-yield, disease-tolerant, region-specific rice cultivars.
6. **Climate resilience:** Helps breed varieties suited to **rapid environmental changes**.
7. **Significance:** Preserves genetic diversity; aids sustainable agriculture and breeding.

Indian Yak Genome Sequencing

Recent Context :

ICAR scientists assembled the **first chromosome-level genome of Indian Yak**, decoding its genes for **cold tolerance, disease resistance, and milk production**, enabling conservation and breeding programs.

ABOUT:

1. **Genome sequencing:** Reading DNA base by base to map gene locations.
2. **Technology:** Long-read sequencing (LRS) enables longer DNA reads than traditional methods.
3. **Significance:** Identifies genetic markers for **cold tolerance, disease resistance, milk yield**.
4. **Applications:** Precision yak breeding, conservation, and livestock improvement.

5. **Comparative genomics:** Enables **allele mining** from other bovines for useful traits.
6. **Biodiversity impact:** Supports **Himalayan yak conservation**, sustaining local livelihoods.
7. **Scientific leap:** Advances understanding of high-altitude bovine genetics.

Hillchol – Oral Cholera Vaccine

Recent Context:

Bharat Biotech's **Hillchol vaccine** completed Phase III trials, effective against **Ogawa and Inaba serotypes** of *Vibrio cholerae* O1.

Key Points:

1. **Disease:** Cholera—acute diarrhoeal infection; transmitted via contaminated water/food.
2. **Global Burden:** ~2.86 million cases/year; 95,000 deaths.
3. **Vaccine Technology:** Oral, single stable O1 Hikojima strain; cost-effective for LMICs.
4. **Advantages:** Easy mass administration, affordable, stable storage, dual serotype coverage.
5. **Public Health Significance:** Supports cholera outbreak prevention and eradication efforts.
6. **Phase III Trials:** Demonstrated efficacy and safety for widespread use.
7. **Relevance to India:** Strengthens immunization capacity and epidemic preparedness.

Operation Sindoor – Key Defence Technologies

Recent Context:

India used **indigenous & advanced weapons** during Operation Sindoor to target terrorist infrastructure in PoK.

Key Technologies:

1. **Akashteer:** AI-powered mobile air defence system, integrates radars, NAVIC GPS; intercepts drones, missiles.
2. **Akash Missile System:** Medium-range SAM (25–45 km), supersonic, multiple variants.
3. **S-400:** Russian SAM, 400 km range, multi-layered defence.
4. **BrahMos:** Supersonic cruise missile, Mach 3, 450 km range.

5. **HAMMER & SCALP:** Precision-guided air-to-ground cruise missiles.
6. **Meteor:** BVRAAM air-to-air missile, largest “No Escape Zone.”
7. **Loitering Munitions & Anti-Drone Systems:** SkyStriker, Harop, D-4 for surveillance and precision strikes.

Significance: Enhances **India’s aerial strike and defensive capabilities**, showcasing indigenous tech integration (DRDO, ISRO, HAL).

AMCA – Advanced Medium Combat Aircraft

Recent Context:

India’s **fifth-generation stealth fighter aircraft** program approved, with HAL and private sector participation; prototype expected by 2035.

Key Points:

1. **Type:** 5th-generation multirole stealth fighter; twin-engine, 25-tonne, Mach 2.15.
2. **Capabilities:** Air-to-air, air-to-ground, SEAD, electronic warfare, “first look, first kill.”
3. **Weapons:** BrahMos-NG, Astra, Rudram, anti-tank missiles, laser-guided bombs.
4. **Engines:** Mk1—GE-F414 (98 kN); Mk2—110 kN indigenous collaboration.
5. **Stealth Features:** Radar-absorbing coating, reduced IR signature, internal fuel tank.
6. **Strategic Significance:** Fills IAF gaps; counters China and Pakistan’s advanced fighters; elevates India to global 5th-gen fighter club.
7. **Indigenous Development:** Designed by ADA, manufactured by HAL + private firms.



TOPICS COVERED-

- **Daojali Hading – Neolithic Site in Assam** – Revealed Eastern Asiatic Neolithic culture with celts, cord-marked pottery, and early metallurgy in Dima Hasao district.
- **Osaka World Expo 2025** – Global event in Japan themed “Designing Future Society for Our Lives”; India’s pavilion curated by IGNCA.
- **Simhastha Kumbh Mela** – 12-yearly Hindu pilgrimage in Nashik and Ujjain, linked to Jupiter’s entry into Leo, recognized by UNESCO.
- **Kheer Bhawani Festival** – Annual Kashmiri Pandit gathering at Kheer Bhawani Temple offering rice pudding as prasad.
- **Padmanabhaswamy Temple** – Kerala Vishnu temple with rare ‘Maha Kumbhabhishekam’, Dravidian architecture, and historic manuscripts.
- **Sant Kabir Das Ji** – 15th-century Bhakti poet-saint from Varanasi, promoting Nirguna devotion and social reform through simple dohas.
- **Katkari Tribe** – PVTG in Maharashtra & Gujarat, historically forest-dependent, targeted by welfare schemes for livelihood and preservation.
- **Jagannath Dham Temple (Digha)** – Kalinga-style temple in West Bengal, consecrated in 2025 with stone idols mirroring Puri Jagannath Temple.
- **INS Kaundinya & Tankai Shipbuilding** – Ancient stitched ship built via 5th-century Tankai method, reviving India’s maritime heritage.
- **Emblems and Names (Prevention of Improper Use) Act, 1950** – Regulates unauthorized use of official emblems/names to protect national dignity.
- **Kumbakonam Vetrilai & Thovalai Maanikka Maalai – GI Tags** – Tamil Nadu betel leaf and garland recognized for origin-specific qualities under GI Act.
- **Sant Kabir Das – 648th Birth Anniversary** – Tribute to Kabir as Bhakti reformer, poet-saint, and founder of Kabir Panth promoting equality.
- **Birsa Munda Martyr’s Day** – Commemorates tribal leader Birsa Munda’s Ulgulan movement and fight for land rights in Jharkhand.
- **50th Anniversary of Sikkim’s Integration with India** – Marks Sikkim becoming India’s 22nd state in 1975 after monarchy abolished via referendum.
- **Buddhism & the Path to Nirvana** – Philosophy teaching Middle Path, Four Noble Truths, and Eightfold Path for liberation and social equality.
- **Raghuji Bhonsle I – Maratha General** – 18th-century Maratha leader of Nagpur Bhosale dynasty known for military expansion in South & East India.
- **Digha Jagannath Temple Controversy** – Replica temple in West Bengal faces disputes over stone idols and use of “Dham” from Puri tradition.
- **Veerashaiva-Lingayats – Separate Religion Code Demand** – Community in Karnataka seeking distinct census code; founded by Basava, emphasizing equality and social reforms.

- **Early Harappan Burial Discovery – Lakhapar, Gujarat** – 5,300-year-old burial with Pre-Prabhas pottery linking Harappan and Chalcolithic cultures.
- **Ghumot – Goa’s State Heritage Instrument** – Traditional percussion instrument made of clay and membrane, significant in Goa’s cultural heritage.
- **Kolhapuri Chappal – Traditional Handcrafted Footwear** – Iconic leather sandals from Maharashtra, GI-tagged, known for durability, craftsmanship, and eco-friendliness.
- **Ambubachi Mela 2025 – Kamakhya Temple, Assam** – Annual festival celebrating Goddess Kamakhya’s menstruation; key Tantric worship event and fertility ritual.
- **Lokmata Devi Ahilyabai Holkar – 300th Birth Anniversary** – Celebrated Malwa queen known for just governance, military leadership, and promotion of culture and dharma.



HISTORY AND ART& CULTURE

SOURCE – THE HINDU

Daojali Hading – Neolithic Site in Assam**Recent Context -:**

Daojali Hading, a Neolithic site in Assam's Dima Hasao district, revealed evidence of Eastern Asiatic Neolithic complex, double-shouldered celts, cord-marked pottery, and early metallurgical practices during excavations in the 1960s.

About:

1. Located in Assam's Dima Hasao district near the Brahmaputra valley.
2. Excavated by T.C. Sharma and M.C. Goswami between 1962–64.
3. First evidence in India of Eastern Asiatic Neolithic complex.
4. Finds include double-shouldered celts and cord-marked pottery.
5. Discovery of furnace and iron slag indicating early metallurgy.
6. Neolithic Age: 7000–1000 BCE, agriculture, domestication, permanent settlements.
7. Other Neolithic sites: Mehrgarh, Burzahom, Senubarf, Koldihwa, Bagor, Sarutaru, Brahmagiri, Paiyampalli.

Osaka World Expo 2025**Recent Context -:**

Osaka World Expo 2025 in Japan will showcase innovations under the theme "Designing Future Society for Our Lives", with India's Pavilion curated by IGNCA under the Ministry of Culture.

About:

1. **Location:** Japan; event held every 5 years for 6 months.
2. **Theme:** "Designing Future Society for Our Lives".
3. Functions as a "Living Lab" for global problem-solving through shared knowledge and cutting-edge technology.
4. **India's Pavilion** curated by Indira Gandhi National Centre for the Arts (IGNCA).
5. **IGNCA** established in 1985; premier government-funded arts organisation.

6. **IGNCA** is an autonomous institute under the Union Ministry of Culture.
7. **IGNCA** is the nodal agency for the National Mission for Manuscripts (NMM).

Simhastha Kumbh Mela**Recent Context -:**

Simhastha Kumbh Mela, a 12-yearly Hindu pilgrimage in Nashik and Ujjain, aligns with Jupiter's entry into Leo (Simha Rashi), and is listed in UNESCO's Intangible Cultural Heritage.

**About:**

1. Held every 12 years at Nashik-Trimbakeshwar (Godavari River) & Ujjain (River Shipra).
2. Named after the Simha constellation of the zodiac.
3. Celebrated when Jupiter (Brihaspati) enters Leo zodiac sign (Simha Rashi).
4. One of 4 traditional Kumbh Melas — others: Haridwar, Prayagraj, and Ujjain.
5. Prayagraj Kumbh at Triveni Sangam (Ganga, Yamuna, Sarasvati).
6. **UNESCO (2017)** listed Kumbh Mela as Intangible Cultural Heritage of Humanity.
7. Described as the largest peaceful congregation of pilgrims on earth.

Kheer Bhawani Festival**Recent Context -:**

Kheer Bhawani Festival, the largest Hindu gathering in Kashmir after Amarnath Yatra, is celebrated annually on Jyestha Ashtami by Kashmiri Pandits at the Kheer Bhawani Temple in Jammu & Kashmir.

About:

1. Also called **Mela Kheer Bhawani**.
2. Celebrated on **Jyestha Ashtami** (May–June).
3. Devotees are predominantly **Kashmiri Pandits**.
4. Venue: **Kheer Bhawani Temple**, Jammu & Kashmir.
5. Temple is dedicated to **Goddess Ragnya Devi**.
6. **Biggest Hindu religious gathering** in the valley after **Amarnath Yatra**.
7. Devotees offer **kheer** (rice pudding) as the main **prasad**.

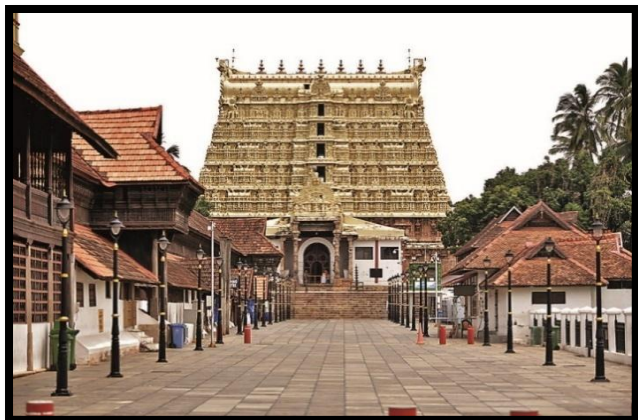
Padmanabhaswamy Temple

Recent Context -:

The **Padmanabhaswamy Temple** in **Thiruvananthapuram, Kerala** performed the rare **'Maha Kumbhabhishekam'** after **270 years**, reviving a major ritual in one of the most revered **Lord Vishnu** temples of India.

About:

1. Located in **Thiruvananthapuram, Kerala**.
2. Built in the **8th century**; later renovated by **King Marthanda Varma**.
3. One of the **108 Divya Desams** dedicated to **Lord Vishnu**.
4. Follows **Thripadidanam** tradition (donation to temple & deity).
5. Architecture: **Dravidian style** with **7-tier gopuram** & intricate carvings.
6. Houses **~3 million palm-leaf manuscripts** from the 14th century.
7. **Nammalwar** (9th-century poet, Alvar saint) composed 10 hymns praising **Lord Padmanabha**.



Sant Kabir Das Ji

Recent Context -:

Sant Kabir Das Ji, a **15th-century mystic poet** from **Varanasi**, remains a key figure of the **Bhakti Movement**, influencing Hinduism and Sikhism with his **Nirguni philosophy** and profound **dohas**.

About:

1. Born in **Varanasi, Uttar Pradesh** in the **15th century**.
2. **Mystic poet**, saint, and **social reformer** linked to the **Bhakti Movement**.
3. Influenced by **Ramananda**; belonged to **Nirguni tradition** (God as formless).
4. Works include **Kabir Granthawali, Anurag Sagar, Bijak, Sakhi Granth**.
5. Verses preserved in **Guru Granth Sahib** by **Guru Arjan Dev**.
6. Literary forms: **Dohas, Ramanas, Padas, Sabdas**.
7. Wrote in **simple Hindi** to make spiritual ideas easily understood.

Katkari Tribe

Recent Context -:

The **Katkari Tribe**, a **PVTG** of Maharashtra and Gujarat, has gained attention due to recent welfare schemes aimed at improving livelihood, housing, and preserving their distinct **language and traditions**.



About:

1. Listed among **75 Particularly Vulnerable Tribal Groups (PVTGs)** in India.
2. Also called **Kathodis**; historically **forest dwellers**.

3. Primarily reside in **Maharashtra – Pune, Raigad, Thane** districts.
4. Found in some parts of **Gujarat**.
5. Speak **Katkari** and **Marathi** languages.
6. Traditionally dependent on **forest produce** and seasonal labor.
7. Identified for **special development initiatives** due to socio-economic vulnerability.

Jagannath Dham Temple (Digha)

Recent Context -:

In **April 2025**, the **Jagannath Dham Temple** at **Digha, West Bengal**, was consecrated. Built in **Kalinga-style architecture**, it mirrors Puri's Jagannath Temple but features **stone idols** instead of wooden ones.

About:

1. Located in **Digha**, a coastal town in **West Bengal**.
2. Inspired by the **12th-century Jagannath Temple of Puri**.
3. Built in **traditional Kalinga-style architecture**.
4. Enshrines **stone idols** of **Lord Jagannath, Balabhadra, and Subhadra** on **Ratnabedi**.
5. Comprises **Vimana, Jagamohan, Nat Mandir, and Bhog Mandap**.
6. Made from **pinkish Bansi Paharpur sandstone**.
7. Differs from Puri temple's **Darubrahma** (wooden) deities.

SOURCE – VISION MONTHLY

INS Kaundinya & Tankai Shipbuilding Method

Recent Context -:

The Indian Navy inducted **INSV Kaundinya**, an ancient stitched ship built using the **Tankai method**, inspired by a **5th-century CE Ajanta painting**, reviving **India's maritime heritage** through traditional shipbuilding.

About:

1. **INSV Kaundinya** based on **Ajanta Caves** 5th-century CE ship depiction.
2. Built using **Tankai method** — 2000-year-old **stitched shipbuilding** with wooden planks, no nails.
3. **Tripartite project**: Ministry of Culture, Indian Navy, **M/s Hodi Innovations**.

4. **Maritime heritage**: Harappan–Mesopotamia trade, Lothal dock, Rig Veda mentions sea voyages.
5. **Cultural diffusion**: Buddhism spread to **Sri Lanka**; Indian architecture in **Borobudur, Angkor Wat**.
6. **Naval prowess**: Magadh navy, **Rajendra Chola-I, Shivaji Maharaj** coastal forts & 500+ ships.
7. **Maritime diplomacy**: **Samudragupta, Pala court** hosted foreign Buddhist missions.



Emblems and Names (Prevention of Improper Use) Act, 1950

Recent Context -:

The **Supreme Court** dismissed a plea concerning honoring a **freedom fighter** under the **Emblems and Names Act, 1950**, which regulates the **use of official emblems and names** without permission.

About:

1. **Aim** – Prevents **misuse** of specified **emblems** and **names** for **commercial/professional** purposes.
2. **Covers** trademarks, patents, and trade names.
3. **Emblems** include seal, flag, insignia, coat-of-arms, pictorial representations.
4. **Specified list** under the Act & Rules defines protected emblems/names.
5. **Permission** required from **Central Government** for usage.
6. **Applies** across India and to **Indian citizens abroad**.
7. Enforced to protect **national dignity** and **public trust**.

Kumbakonam Vetrilai & Thovalai Maanikka Maalai – GI Tags

Recent Context -:

Kumbakonam Vetrilai (betel leaf) and **Thovalai Maanikka Maalai** (special garland) from **Tamil Nadu** have been granted **Geographical Indication (GI) tags**, recognizing their unique qualities linked to origin.

About:

1. **Kumbakonam Vetrilai** – Betel leaf from **Thanjavur's Cauvery basin**, rich in **chavicol** with antioxidant & anti-inflammatory properties.
2. **Thovalai Maanikka Maalai** – Garland from **Thovalai**, flowers folded to mimic **rubies** in geometric patterns.
3. **GI tag** – Signifies a product's **specific geographical origin** & linked qualities/reputation.
4. Governed by **GI of Goods (Registration & Protection) Act, 1999**.
5. **GI Registry** located in **Chennai**.
6. Protected under **TRIPS Agreement & Paris Convention**.
7. **Validity** – 10 years, renewable; **Uttar Pradesh** holds most GI tags in India.

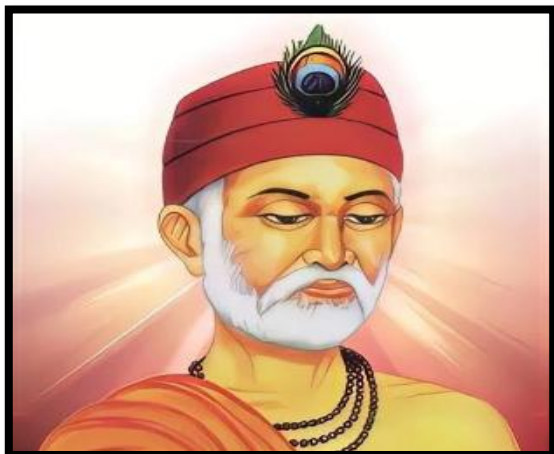
SOURCE – DRISHTI MONTHLY

Sant Kabir Das – 648th Birth Anniversary

Recent Context -:

On **11th June 2025**, the Prime Minister paid tribute to **Sant Kabir Das** on his **648th birth anniversary** (*Kabirdas Jayanti*), honoring his role as a **Bhakti movement** reformer and poet-saint.

About:



1. **Sant Kabir Das** (1440–1518) – Mystic poet & social reformer from **Varanasi**, identified as a humble **julaha** (weaver).
2. Proponent of **Nirguna Bhakti** – Devotion to a **formless, attributeless God** (*Nirguna Brahman*).
3. Spiritual influences – **Ramananda** (Bhakti saint) & **Sheikh Taqi** (Sufi teacher).
4. Advocated **truth, compassion, equality**, and rejection of **casteism & blind rituals**.
5. Literary works – **Dohas, bhajans** in Brajbhasha, Awadhi, Sant Bhasha; major compilations include **Bijak, Kabir Granthawali, Anurag Sagar**.
6. Influence on Sikhism – Verses included in **Guru Granth Sahib** by **Guru Arjan Dev**.
7. Founded **Kabir Panth** – Sect promoting **communal harmony** and spiritual awakening.

Birsa Munda Martyr's Day

Recent Context -:

On **9th June 2025**, the Prime Minister paid tribute to **Bhagwan Birsa Munda** on his **Martyr's Day**, honoring his leadership in the **Ulgulan Movement** and fight for **tribal land rights**.

About Birsa Munda:

1. **Identity** – Tribal leader, **religious reformer**, and **freedom fighter** from the **Chotanagpur region**; revered as **Dharti Abba** (*Father of the Earth*).
2. **Birth** – 15th Nov 1875, **Ulihatu** (Jharkhand); born to a poor **Munda sharecropper** family.
3. **Spiritual Path** – Founded **Birsait religion**; worshipped **Singhbonga** (sun god); denounced **alcoholism, superstitions**, and **forced labour (beth begari)**.
4. **Cause** – Fought against British policies dismantling the **Khuntkatti system** (tribal collective land ownership) and exploitation by **zamindars & thikadars**.
5. **Ulgulan Movement** – Led from **1899–1900**; guerrilla resistance aiming for a **self-governed tribal state** (*Birsa Raj*).

6. **Martyrdom** – Arrested Feb 1900; died in British custody on **9th June 1900** at age 25 (officially cholera).
7. **Impact** – Inspired **Chotanagpur Tenancy Act (1908)** protecting tribal land rights and banning transfer to non-tribals.

Related Tribal Welfare Initiatives:

- **Janjatiya Gaurav Divas** – 15th Nov since 2021.
- **Dharti Aaba Janjatiya Gram Utkarsh Abhiyan** – Integrated development of 63,000 tribal villages.
- **PM-JANMAN (2023)** – Support for PVTGs in healthcare, finance, and community needs.
- **PMAAGY** – Infrastructure for tribal-majority villages.

50th Anniversary of Sikkim's Integration with India

Recent Context :-

On **16th May 2025**, India marked **50 years** of **Sikkim's integration**, commemorating its transition from a **monarchy** to the **22nd state** of India after a **1975 referendum** and constitutional amendments.

About Sikkim's Integration:

1. **Monarchical Rule** – Governed by the **Chogyal dynasty** from **1642–1975**.
2. **Key Treaties** – **Treaty of Titaliya (1817)**, **Treaty of Tumlong (1861)**, **Calcutta Convention (1890)**, and **Lhasa Convention (1904)** defined Sikkim's relations with British India/Tibet.
3. **Indo-Sikkim Treaty (1950)** – Made Sikkim an **Indian protectorate** with control over **defence, foreign affairs, communication**; retained internal autonomy.
4. **1975 Referendum** – **97%** voted to **abolish monarchy** and merge with India.
5. **35th Amendment Act (1974)** – Sikkim became an **Associate State**.
6. **36th Amendment Act (1975)** – Granted **full statehood** as India's **22nd state**.
7. **Significance** – Strengthened India's **northeastern strategic position**, especially along the **China border**.

SOURCE – INDIAN EXPRESS

Buddhism & the Path to Nirvana

Context :

Buddhism arose as a reformist, egalitarian philosophy against Brahmanical ritualism. It taught the Middle Path, Four Noble Truths, and Eightfold Path as the way to liberation (nirvana).

About:

1. **Founder:** Siddhartha (later Buddha) of the Sakya clan, attained enlightenment at Bodhi Gaya. Known as *Tathagata* (one liberated).
2. **Four Noble Truths (Ariya-saccani):**
 - Life is suffering (*Dukkha*).
 - Cause of suffering is desire (*Samudaya*).
 - Cessation of suffering is possible (*Nirodha*).
 - Path to cessation = *Eightfold Path (Magga)*.
3. **Eightfold Path (Ashtangika-marga):**
 - Right view, intention, speech, action, livelihood, effort, mindfulness, concentration.
 - Represents the *Middle Path* (avoiding extremes of indulgence & asceticism).
4. **Core Ideas:**
 - Impermanence (*Anicca*), No-self (*Anatta*), Suffering (*Dukkha*).
 - Nirvana = release from rebirth, desire, and ego.
5. **Social Dimension:**
 - Inclusive order: Brahmanas, Kshatriyas, Vaishyas, Shudras could join Sangha.
 - Actions (*karma*) > birth.
 - Buddha sometimes addressed as "Brahmana" (wise one).
6. **Reordering Hierarchy:**
 - Kshatriyas placed before Brahmanas (unlike Purushasukta).
 - Monastic order (*Sangha*) open to all → symbol of equality

Raghuji Bhonsle I – Maratha General

Context: Maharashtra reclaimed the 18th-century “Raghuji Sword” at a London auction.

Key Points:

1. **Raghuji Bhonsle I (1739–1755):** Maratha general under Chhatrapati Shahu Maharaj.
2. **Founder:** Nagpur-based Bhosale dynasty, part of the Maratha Confederacy.
3. **Military Campaigns:** Expanded Maratha influence in Bengal, Odisha, South India; defeated Nawabs of Kurnool & Cuddapah.
4. **Title & Recognition:** ‘Senasaheb Subha’ for military acumen.
5. **Sword:** European-style blade with local Mulheri hilt; reflects **18th-century Indo-European arms trade and craftsmanship.**

Digha Jagannath Temple Controversy

Context: Newly consecrated **replica of Puri Jagannath Temple** in West Bengal faces objections from Puri servitors.

Key Points:

1. **Location & Design:** Digha, Purba Medinipur, 213-ft tall; sandstone; Kalingan architecture.
2. **Issue:** Use of “Dham” and Nilachakra, stone idols vs original neem wood (Daru) Jagannath.
3. **Religious Significance:** Performing rituals here may **dilute sanctity of original Puri Temple.**
4. **Tourism & Culture:** Replica could compete with Puri for devotees and tourists.
5. **Puri Jagannath Temple:** 10th century, Eastern Ganga dynasty; Ratha Yatra; Daru idols; Kalinga architecture.

Veerashaiva-Lingayats – Separate Religion Code Demand

Context: Veerashaiva-Lingayats in Karnataka demand **separate religion code in 2026 census.**

Key Points:

1. **Founder:** Basava (12th century), social reformer and Prime Minister under Kalachuri King Bijjala I.
2. **Beliefs:** Personal worship of Shiva via **Ishtalinga**, rejection of Brahmin-led rituals, equality and socio-religious reforms.

3. Key Concepts:

- **Anubhav Mantapa:** First human parliament; Vachana literature recorded proceedings.
 - **Kaayaka:** Manual labour with divine mindset.
 - **Daasooaha:** Charity from earnings to support poor.
4. **Veerashaivas vs Lingayats:** Veerashaivas predate Basava, Lingayats follow Basava’s reformist philosophy.
 5. **Socio-Cultural Impact:** Promoted equality, rejected caste/gender discrimination, emphasized literacy, ethics, and devotion.

SOURCE – INSIGHTS

Early Harappan Burial Discovery – Lakhapar, Gujarat

Recent Context -:

Archaeologists uncovered a **5,300-year-old Early Harappan burial at Lakhapar, Kutch (Gujarat)**, revealing links between **Harappan and Chalcolithic cultures**, extending Harappan influence deeper into western India.

Key Facts:

- **Location:** Lakhapar village, Kutch, Gujarat; excavations by **University of Kerala.**
- **Dating: 3300–2600 BCE** (Early Harappan phase).
- **Findings:**
 1. **Human burial with Pre-Prabhas pottery** – first of its kind in Gujarat.
 2. **No markers/architecture** for burial pit.
 3. **Harappan-style architecture** – sandstone/shale structures.
 4. Pottery links to **Chalcolithic Saurashtra** (Prabhas Patan, Dadrana).
 5. Cultural parallels with Early Harappan **Sindh** sites.

Ghumot – Goa’s State Heritage Instrument

Recent Context :

Goa’s traditional percussion instrument **Ghumot** is in focus due to revival debates balancing **heritage**

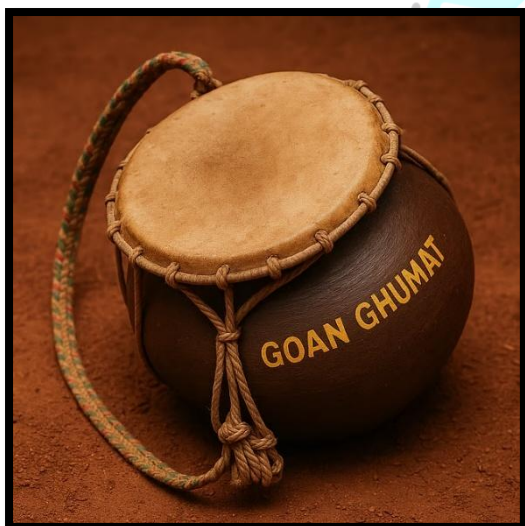
conservation with **wildlife protection**, following its 2019 **State Heritage Instrument** recognition.

Key Facts:

- **What:** Traditional **mud-based membranophone** percussion instrument of Goa.
- **Origin:** Brought by tribal communities/early settlers; rooted in Goa's **oral traditions**.
- **Types:** Varied sizes for **children, women, amateurs, professionals**.
- **Cultural Link:** Crafted by tribal potters; played by **Hindu & Christian communities** → **syncretic culture**.

Making Process:

1. **Clay shaping** into pumpkin-like form (3 parts) → air bubbles removed.
2. **Sun-dried & kiln-fired** for strength.
3. **Membrane:** Earlier monitor lizard skin (now banned under **Wildlife Protection Act, 1972**) → replaced with **goat/buffalo skin or synthetic**.
4. **Tuning** with coir rope for resonance.



Kolhapuri Chappal – Traditional Handcrafted Footwear

Recent Context:

Artisans of **Kolhapuri chappals** objected to **Prada's 2026 collection**, alleging **unauthorised imitation** of their traditional design.

Key Facts:

- **What it is:** Handcrafted **leather sandals** with **durable, intricate design**, featuring **open-toe, T-strap structure**.
- **Region of Origin:** Kolhapur (Maharashtra) and adjoining districts; parts of Karnataka (Belgaum, Bagalkot, Dharwad).
- **GI Tag:**
 - Received **Geographical Indication (GI)** status in **2019**.
 - Jointly registered by Maharashtra & Karnataka artisans.
 - GI ensures only registered producers can use the **"Kolhapuri"** name.

Unique Features:

- Made from **vegetable-tanned buffalo hide**, **without nails**.
- **Traditional motifs** and **braided leather straps**.
- **Eco-friendly, breathable, long-lasting**.

Ambubachi Mela 2025 – Kamakhya Temple, Assam

Context:

Thousands of devotees gather at **Kamakhya Temple, Guwahati** for **Ambubachi Mela 2025**, celebrating the **annual menstruation of Goddess Kamakhya**, a central event in **Tantrik Shaktism**.

About Ambubachi Mela

1. **Nature:** Annual festival at Kamakhya Temple, Assam, marking Goddess Kamakhya's menstrual cycle; linked to fertility & monsoon.
2. **Practices:** Temple closed for 3 days; no idol worship; distribution of symbolic cloth amulets; pause in agricultural activities.
3. **Temple Status:** One of 51 Shakti Peethas; major Tantric worship site on Nilachal Hills, ~7 km from Guwahati.
4. **Structure:** Three chambers; innermost houses yoni-shaped cleft with natural spring (worshipped as deity).
5. **History & Legend:** Rebuilt in 1565 by Koch king Chilarai after destruction by Kala Pahar; linked to Sati's reproductive organ myth.

Lokmata Devi Ahilyabai Holkar – 300th Birth Anniversary

Context:

The **Prime Minister of India** addressed the **Mahila Sashaktikaran Mahasammelan** in **Bhopal, Madhya Pradesh**, commemorating the **300th birth anniversary** of **Lokmata Devi Ahilyabai Holkar**.

Early Life & Family

- **Born:** 31 May 1725, **Chondi village, Ahmednagar**, Maharashtra.
- **Father:** Mankoji Rao Shinde, village head, ensured her **education**.
- **Marriage:** Married **Khanderao Holkar**, son of **Malhar Rao Holkar** of the Malwa kingdom.

Reign as Ruler

- **Became ruler of Malwa:** 1767, after **Peshwa's approval**.
- **Capital:** Maheshwar, Madhya Pradesh.
- **Governance Style:** Wise, just, and inclusive during **politically volatile times**.
- **Military Leadership:** Personally led campaigns; founded the **Holkar army in 1792**.

Legacy

- **Died:** 13 August 1795, aged 70.
- Founded the **Maheshwari saree textile industry**, still famous today.
- Known as the **'Philosopher Queen'** for wisdom and spiritual outlook.
- Remembered for **combining development with dharma (duty)**.
- Her work continues to influence **cultural preservation and grassroots governance in India**



TOPICS COVERED -

- **Kawal Tiger Reserve – Telangana** – Tiger reserve along Godavari, part of Deccan Peninsula-Central Highlands; tiger corridor to Tadoba-Andhari named Kumram Bheem Conservation Reserve.
- **Perito Moreno Glacier – Argentina** – UNESCO World Heritage glacier, freshwater source, called ‘White Giant’; retreating due to climate change; major tourist & research site.
- **Birch Glacier – Switzerland** – Alpine glacier advancing unusually due to rockfall accumulation; recent ice collapse caused village destruction; studied for glacial dynamics.
- **Coringa Wildlife Sanctuary – Andhra Pradesh** – Mangrove-dominated wetland; habitat for Fishing Cats, Olive Ridley turtles; collared cats for research; estuarine ecosystem.
- **Kalvarayan Hills – Tamil Nadu** – Part of Eastern Ghats; tribal habitation, deciduous forests, waterfalls; separates Kaveri & Palar basins; biodiversity hotspot.
- **Indravati National Park – Chhattisgarh** – Tiger reserve linked to Kawal, Tadoba, Kanha; houses rare wild buffalo; moist & dry deciduous forests; ecological and hydrological importance.
- **Pokkali Paddy – Kerala** – Salt-tolerant rice variety integrating fish farming; GI-tagged; sustainable traditional farming preserving biodiversity; Vyttila-11 is modern high-yield variant.
- **China’s Dams & Brahmaputra Flow** – Projects like Medog Hydro may reduce India-Bangladesh inflow, affect flood cycles, irrigation, wildlife; water security concern.
- **Brahmaputra River System** – Origin: Tibet; flows through Arunachal Pradesh & Assam to Bangladesh; major tributaries include Lohit, Subansiri, Manas; holds 30% of India’s water resources.
- **Asiatic Lion – Gir Forest, Gujarat** – Panthera leo persica; IUCN Endangered; population 891 in 2025; Project Lion & International Big Cats Alliance for conservation.
- **Indian Grey Wolf – Kadbanwadi, Pune** – Canis lupus pallipes; grassland apex predator; population declined due to feral dogs, disease, urbanisation; maintains ecosystem balance.
- **Upper Bhavani Pumped Storage Project – Nilgiris, Tamil Nadu** – 1000 MW pumped storage hydro project; uses Bhavani River; near Mukurthi NP; Western Ghats biodiversity hotspot; EIA approved.
- **Cloudburst** – Sudden, intense rainfall ≥ 100 mm/hour; causes flash floods and landslides in hilly regions; due to orographic lifting, convection, and valley convergence.
- **WMO State of Climate in Asia 2024** – Faster sea-level rise on India’s coasts; Himalayan glacial retreat; extreme weather; recommends coastal management, emission reduction, early warning systems.
- **Urban Drainage Crisis in India** – Frequent urban flooding due to outdated drains, unplanned urbanisation, extreme rainfall; govt initiatives include AMRUT 2.0, Jal Shakti Abhiyan, GIS-based planning.

GEOGRAPHY

SOURCE – THE HINDU KAWAL TIGER RESERVE

Recent Context: Telangana government declared the tiger corridor connecting Kawal Tiger Reserve with Tadoba-Andhari Tiger Reserve as ‘**Kumram Bheem Conservation Reserve**’, strengthening wildlife protection.

About Kawal Tiger Reserve:

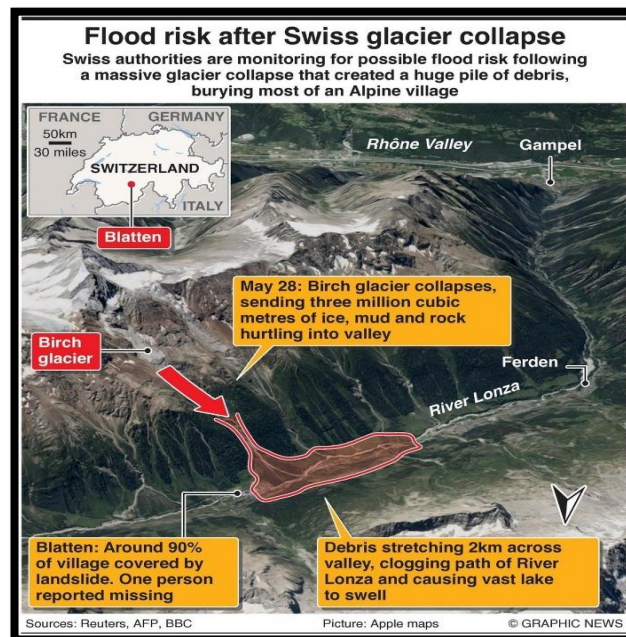
1. **Location:** Telangana, along the **Godavari River**, part of the **Deccan Peninsula-Central Highlands**.
2. **Declared Tiger Reserve:** 2012.
3. **Hydrology:** Catchment for **Godavari** and **Kadam** rivers.
4. **Connectivity:** Linked to **Tadoba-Andhari (Maharashtra)** and **Indravati (Chhattisgarh)** Tiger Reserves.
5. **Flora:** Dominated by **Teak, Bamboo, Anogeissus latifolia, Terminalia arjuna, Butea monosperma**.
6. **Conservation Initiative:** Tiger corridor area designated as **Kumram Bheem Conservation Reserve**.
7. **Significance:** Supports tiger population movement and biodiversity conservation across states.

PERITO MORENO GLACIER

Recent Context: Perito Moreno Glacier in Argentina, a major freshwater source, is among glaciers **disappearing faster due to climate change**, raising conservation concerns.

About Perito Moreno Glacier:

1. **Location:** Argentina, **Andes Mountains**, within **Los Glaciares National Park (UNESCO World Heritage Site)**.
2. **Nickname:** Called the ‘**White Giant**’.
3. **Formation:** Originated during the **last Ice Age (~18,000 years ago)**.
4. **Hydrology:** Major source of freshwater for Argentina.
5. **Tourism:** Popular glacier with natural ice ruptures attracting visitors.



6. **Environmental Concern:** Part of glaciers retreating rapidly due to global warming.
7. **Scientific Significance:** Monitored for climate change studies and glaciology research.

BIRCH GLACIER

Recent Context: A massive portion of **Birch Glacier** in Switzerland broke off recently, causing extensive destruction to an Alpine village; advance likely triggered by **rockfall accumulation**.

About Birch Glacier:



1. **Location:** **Lotschental Valley**, northern Switzerland, in the **Alpine region**.

2. **Unique Feature:** Only Swiss glacier **advancing rather than retreating**.
3. **Recent Event:** Large ice mass collapse caused **destruction in nearby Alpine village**.
4. **Cause of Advance:** Likely due to **rockfall accumulation from neighboring mountain**.
5. **Country Significance:** Switzerland is a **landlocked Alpine country** with the **highest number of glaciers in Europe**.
6. **Environmental Importance:** Indicator of **glacial dynamics and climate variability** in the Alps.
7. **Tourism & Research:** Studied for **glaciology and disaster risk management**; attracts researchers and visitors.

Coringa Wildlife Sanctuary

Recent Context -:

Experts from the Wildlife Institute of India (WII) collared three Fishing Cats in Andhra Pradesh's Coringa Wildlife Sanctuary for the first time, enhancing research on this elusive, vulnerable wetland predator.

About Coringa Wildlife Sanctuary:

1. **Location:** Andhra Pradesh, at the confluence of Coringa River and Bay of Bengal.
2. **Ecosystem:** 40% sea-backwaters, rest intermingled creeks with tidal inundation.
3. **Vegetation:** Mangroves (Rhizophora spp., Avicennia spp., Sonneratia spp.) and dry deciduous tropical forests.
4. **Fauna:** Smooth Indian otter, Jackal, Fishing Cat, and Olive Ridley Turtles (breeding ground, IUCN: Vulnerable).
5. **Fishing Cat Status:** IUCN Vulnerable, WPA 1972 Schedule I, CITES Appendix II.
6. **Habitat:** Wetlands, swamps, marshes, tidal creeks, mangrove forests; elusive and nocturnal.
7. **Conservation Efforts:** Collaring of Fishing Cats for research and monitoring by WII.

Kalvarayan Hills

Recent Context -:

Kalvarayan Hills, part of Tamil Nadu's Eastern Ghats, are noted for tribal habitation, deciduous forests, and

waterfalls. They play a role in river basin separation and regional water resources.

About Kalvarayan Hills:

1. **Location:** Eastern Ghats, Tamil Nadu; separates Kaveri River basin from Palar River basin.
2. **Height:** Ranges between 2000–3000 feet.
3. **Sections:** Divided into Chinna (northern, "little") and Periya (southern, "big") Kalrayans.
4. **Vegetation:** Deciduous forests and shola patches.
5. **Water Features:** Megam and Periyar waterfalls; Gomukhi Dam at foothills.
6. **Tribal Population:** Inhabited by Malayan tribes.
7. **Ecological Significance:** Supports biodiversity, forest resources, and regional hydrology.

Indravati National Park

Recent Context -:

Indravati National Park in Chhattisgarh, along the Indravati River, forms a key tiger reserve network and conserves rare wildlife, including one of the last populations of wild buffalo.

About Indravati National Park (7 points relevant for UPSC Prelims):

1. **Location:** Chhattisgarh, along Indravati River; northern boundary borders Maharashtra.
2. **Connectivity:** Linked to Kawal (Telangana), Tadoba (Maharashtra), and Kanha (Madhya Pradesh) tiger reserves.
3. **River:** Indravati River originates in Dandakaranya range, Odisha; tributary of Godavari.
4. **Forest Types:** Moist Mixed Deciduous Forest (with and without teak) and Southern Dry Mixed Deciduous Forest.
5. **Flora:** Includes teak, achar, karra, kullu, shisham, semal, haldu, arjun, bel, and jamun.
6. **Fauna:** Home to rare wild buffalo populations.
7. **Ecological Significance:** Important biodiversity hotspot and tiger conservation landscape.

Pokkali Paddy

Recent Context :-

Pokkali paddy, a salt-tolerant rice variety of Kerala, integrates seasonal rice cultivation with fish farming, maintaining traditional agricultural biodiversity. Vyttila-11 is a new high-yield Pokkali variety.

About Pokkali Paddy :

1. **Location:** Coastal districts of Kerala — Alappuzha, Ernakulam, and Thrissur.
2. **Saltwater Resistance:** Can grow in saline water-logged fields.
3. **GI Tag:** Received Geographical Indication (GI) in 2008.
4. **Agriculture-Fisheries Integration:** Rice alternates with fish farming season; called “Pokkali” in Kerala.
5. **Other Regional Names:** Known as “Bheries” (West Bengal), “Gajani” (Karnataka), and “Khazaan” (Goa & Maharashtra).
6. **Varieties:** Traditional Pokkali and modern variety Vyttila-11.
7. **Cultural & Environmental Significance:** Ancient sustainable farming practice preserving soil fertility and biodiversity.

SOURCE – DRISHTI MONTHLY

China's Dams and Brahmaputra Flow

Why in News:

- China's hydroelectric projects (e.g., **Medog Hydro Project**) on the Brahmaputra may affect flow into India → water security concern.

Possible Impacts:

- **Alteration of water flow:** Reduced inflow to India & Bangladesh; may cause water scarcity.
- **Ecological disruption:** Affects flood cycles, irrigation, fish migration, wildlife habitats (e.g., **Kaziranga NP**).
- **Hydropower:** Medog project projected to generate **3× the power of Three Gorges Dam**.

Brahmaputra River System

Origin & Course:

- Origin: **Chemayungdung Glacier**, Kailash Range, Tibet (**Yarlung Tsangpo**).

- India Entry: Arunachal Pradesh (**Siang/Dihang**).
- Flows → Assam → Bangladesh → joins Ganges (**Padma**) → Meghna → **Bay of Bengal**.
- Total length: 2,900 km; in India: 916 km.

Tributaries:

- **Right bank:** Lohit, Dibang, Subansiri, Jiabharali, Dhansiri, Manas, Torsa, Sankosh, Teesta.
- **Left bank:** Burhidihing, Desang, Dikhow, Dhansiri, Kopili.

Drainage & Basin:

- Spans: **Tibet, Bhutan, India, Bangladesh**.
- Indian catchment: Arunachal Pradesh, Assam, West Bengal, Meghalaya, Nagaland, Sikkim.

Geography & Ecology:

- Holds **30% of India's water resources, 41% hydropower potential**.
- Forests: mostly **deciduous**.
- Wildlife sanctuaries: **Kaziranga, Manas**.

Unique Features:

- **Majuli:** world's largest river island.
- **Umananda:** smallest river island.

Asiatic Lion – Gir Forest, Gujarat

Recent Context :

Asiatic lion population reached **891** in **2025**, up from **674** in **2020**. Many lions are outside **protected areas**, increasing **human-wildlife conflict**. Conservation efforts continue under **Project Lion** and **international collaborations**.

ABOUT

1. Subspecies: **Panthera leo persica**.
2. Habitat: **Gir Forest, Saurashtra, Gujarat** – only natural habitat.
3. Conservation Status: **IUCN Endangered; CITES Appendix I; WPA 1972 Schedule I**.
4. Census Method: **Direct beat verification, camera traps, GPS collars**.
5. Threats: **Habitat isolation, human-lion conflict, diseases (Canine Distemper Virus)**.
6. Conservation Initiatives: **Project Lion (2020), International Big Cats Alliance (2023)**.
7. Gir forest ecosystem: **Dry deciduous forest**; supports diverse **prey species**.

Indian Grey Wolf – Kadbanwadi Grasslands, Pune, Maharashtra

Recent Context :

Indian grey wolves in Pune's Kadbanwadi Grasslands declined from ~70 to 6 adults over 10 years. Threats include feral dogs, Canine Distemper Virus, shrinking prey, and habitat disruption.

ABOUT

1. Species: **Canis lupus pallipes** (Indian Grey Wolf).
2. Habitat: **Kadbanwadi Grasslands, Pune, Maharashtra** – 2000 hectares.
3. Conservation Status: **IUCN Endangered; CITES Appendix I; WPA 1972 Schedule I.**
4. Apex predator: Controls populations of smaller predators and herbivores.
5. Threats: **Feral dog attacks, CDV transmission, genetic dilution, urban encroachment.**
6. Ecosystem Role: Maintains **grassland health and biodiversity.**
7. Fauna of Kadbanwadi: **Bengal fox, striped hyena, Brahminy kite** also present.

Upper Bhavani Pumped Storage Project – Nilgiris, Tamil Nadu

Recent Context :

MoEFCC approved EIA for the **1000 MW Upper Bhavani Pumped Storage Project** in the Nilgiris. Project harnesses **Bhavani River** waters near **Mukurthi National Park**, amid **Western Ghats biodiversity hotspot.**

ABOUT

1. Location: **Nilgiris, Tamil Nadu**; near **Upper Bhavani Dam** and **Avalanche-Emerald reservoirs.**
2. Project Type: **Pumped Storage Hydropower**, uses **gravity-based water cycling** between **upper and lower reservoirs.**
3. Installed Capacity: **1000 MW.**
4. River: **Bhavani River**, tributary of **Cauvery**, flows through **Kerala and Tamil Nadu.**
5. Biodiversity: Located in **Western Ghats**, hosts **Shola forests, rare and endangered species.**

6. Operation Principle: **Water pumped to upper reservoir during off-peak hours**, released for **power generation at peak demand.**
7. Environmental Assessment: Requires **Environmental Impact Assessment (EIA)** as per **MoEFCC guidelines**, considering **protected areas and ecological sensitivity.**

SOURCE – INSIGHTS

Cloudburst

Recent Context: Kangra and Kullu districts, Himachal Pradesh experienced cloudbursts, causing flash floods, killing 2 people, and leaving over a dozen missing.

About Cloudburst :

1. Sudden, intense rainfall ≥ 100 mm/hour over ~ 10 km².
2. Common in hilly/mountainous regions, triggering flash floods and landslides.
3. **Orographic lifting:** Moist winds rise over steep terrain forming cumulonimbus clouds.
4. **Strong convection currents:** Vertical air motion (60–120 km/h) stores vast water content.
5. **Localized convergence zones:** Wind traps moisture in valleys, increasing rainfall density.
6. **High latent heat release:** Warm air holds $\sim 7\%$ more moisture per 1°C rise (Clausius-Clapeyron law).
7. Causes major infrastructural damage and poses disaster management challenge

WMO's State of the Climate in Asia 2024 Report

Recent Context: India's eastern and western coasts are experiencing faster-than-average sea level rise, threatening livelihoods, infrastructure, and increasing flood risks.

About the Report :

1. **Sea Level Rise:** Arabian Sea rising 3.9 ± 0.4 mm/year; Bay of Bengal 4.0 ± 0.4 mm/year, exceeding global average of 3.4 mm/year.
2. **Coastal & Livelihood Impact:** Low-lying regions face submergence risk; fishing, agriculture, and urban infrastructure are threatened.

3. **Glacial Retreat:** 23 of 24 Central Himalayan glaciers are losing mass, increasing glacial lake outburst flood (GLOF) risks.
4. **Extreme Weather Events:** 2024 saw prolonged heatwaves causing 450+ deaths and lightning incidents killing 1300 people in India.
5. **Asia-wide Trends:** Asia warming at twice the global rate; frequent floods, droughts, and landslides observed.
6. **Causes of Sea Level Rise:** Thermal expansion, melting ice sheets, GHG emissions, and ocean current variability.
7. **Recommended Measures:** Coastal zone management, emission reductions, early warning systems, international cooperation, and local adaptive capacity building.

underground storage tanks, and rejuvenation of urban waterbodies.

Urban Drainage Crisis in India

Recent Context: Indian cities like Delhi, Mumbai, and Bengaluru face frequent urban flooding due to outdated drainage, rising concretisation, and extreme rainfall events.

About Urban Drainage Crisis:

1. **Definition:** Urban drainage systems manage rainwater to prevent flooding but are failing in many Indian cities.
2. **Recent Trends:** Over 70% of urban areas lack planned stormwater drains; cities experience rainfall far exceeding drainage capacity.
3. **Natural Causes:** Intensifying rainfall due to climate change and low-lying topography in cities like Mumbai and Bengaluru exacerbate flooding.
4. **Man-made Causes:** Unplanned urbanisation, poor design standards, illegal constructions, and sewage infiltration reduce drainage efficiency.
5. **Government Initiatives:** Manual on Stormwater Drainage (2019), AMRUT 2.0, Jal Shakti Abhiyan, Atal Bhujal Yojana, MBBL 2016, Amrit Sarovar Mission, GIS-based drainage mapping.
6. **Infrastructure Solutions:** Integrated stormwater networks, rainwater harvesting,



TOPICS COVERED-

- **SIPRI Yearbook 2025 – India’s Nuclear Arsenal** – India: 180 warheads, mature nuclear triad, modernization ongoing; China: 600 warheads; global nuclear stockpile ~12,241; escalation risks include AI, cyber, and regional tensions.
- **Financial Action Task Force (FATF)** – Intergovernmental body (1989), HQ Paris; combats money laundering & terror financing; issues 40 recommendations; grey/black lists influence FDI; India member since 2010.
- **UNSC Taliban Sanctions Committee (1988) & 1373 Counter-Terrorism Committee (CTC)** – Monitor Taliban sanctions, prevent terror financing; Pakistan chairs TSC 2025–26; CTC enforces legal frameworks and capacity building.
- **Operation Deep Manifest – DRI** – Intercepts banned Pakistani goods via false UAE labelling; protects economic security; exposes fund flows and third-country smuggling networks.
- **Women in Indian Armed Forces** – Historic 17 NDA cadet graduates (2025); permanent commissions, combat roles in IAF, Navy; challenges: infrastructure, bias, physical standards; ~4% representation.
- **Empowering India’s Defence Sector – 2025** – Indigenous tech: BrahMos, iDEX, ADITI, Defence Industrial Corridors, UAVs, AI, quantum communication; indigenisation at 65%; strategic autonomy enhanced.
- **Terrorism & India’s Security Landscape – 2025** – Cross-border terrorism (Pakistan), cyber-terrorism, Naxalism, NE insurgency; counter-terror agencies (NIA, NSG, CAPFs, RAW); legislative tools: UAPA 1967, NSA 1980; AI & drones for surveillance.
- **Fifth-Generation Fighter Jet – AMCA** – Indigenous Advanced Medium Combat Aircraft; stealth, supercruise, networked warfare; prototype 2028-29, induction 2034-35; counters regional threats; public-private participation.
- **Silver Notice – INTERPOL** – International asset tracking notice; India requests first for Shubham Shokeen (2025); 51-country pilot; INTERPOL: HQ Lyon, 196 members; supports global fugitive asset monitoring.
- **Rudrastra UAV – Pokhran Trial** – Hybrid VTOL UAV; 170 km range, 1.5-hour endurance; precision strike & real-time surveillance; autonomous return; manufactured by SDAL, India.
- **Exercise Khaan Quest – Multinational Military Exercise** – Held in Mongolia; prepares for UN peacekeeping missions under Chapter VII; India participates; enhances interoperability and military diplomacy.

INTERNAL SECURITY& DEFENCE**SOURCE- INSIGHTS****SIPRI Yearbook 2025**

Recent Context: SIPRI Yearbook 2025 reports India has 180 nuclear warheads, surpassing Pakistan but far behind China, amid an emerging global nuclear arms race and weakening arms control regimes.

About SIPRI Yearbook 2025:

1. **India's Nuclear Arsenal:** 180 warheads as of January 2025, with modernization of canisterised missiles and a mature nuclear triad (land, air, sea).
2. **Strategic Shift:** India may move toward mating warheads with launchers in peacetime, altering its traditional de-alerted posture.
3. **Pakistan's Capability:** Estimated 170 warheads, expanding fissile material production, focusing on short-range tactical weapons to deter India.
4. **China's Arsenal:** 600 warheads, growing ~100/year, with ~350 new ICBM silos and possible peacetime missile readiness.
5. **Global Trends:** Total ~12,241 warheads worldwide (~9,614 deployed), with Russia and the USA holding over 90%; modernization ongoing across all 9 nuclear states.
6. **Escalation Risks:** Regional tensions, AI/cyber/space technologies, misinformation, and compressed decision-making increase nuclear conflict likelihood.
7. **Policy Implications for India:** Maintain credible minimum deterrence, modernize responsibly, pursue arms control dialogue, enhance indigenous capabilities, and actively engage in nonproliferation efforts.

Financial Action Task Force (FATF)

Recent Context: After the April 2025 Pahalgam terror attack, FATF condemned the incident and announced intensified monitoring of countries' counter-terror financing measures.

About FATF :

1. **Nature & Establishment:** Intergovernmental policy-making body established in 1989 at the

G7 Paris Summit; mandate expanded in 2001 to include terrorism financing.

2. **Headquarters:** Paris, France; India became a full member in 2010.
3. **Primary Objectives:** Develop global AML/CFT standards, evaluate member compliance, assist nations in anti-financial crime frameworks, coordinate international counter-terror finance efforts.
4. **Key Functions:**
 - Issue 40 FATF Recommendations for AML/CFT compliance.
 - Conduct mutual evaluations of national frameworks.
 - Identify high-risk jurisdictions (grey/black lists).
 - Raise awareness on emerging threats like crypto misuse and digital laundering.



5. **Grey List:** Countries with strategic deficiencies in AML/CFT frameworks; affects FDI, financial ratings, and lending access.
6. **Blacklist:** Non-cooperative countries in curbing terror financing, e.g., North Korea, Iran, Myanmar.
7. **Significance:** Enhances international cooperation, deters terror state sponsorship, strengthens domestic legal and institutional responses; India engages actively via Asia Pacific Group (APG) and Eurasian Group (EAG).

Taliban Sanctions Committee (1988) & 1373 Counter-Terrorism Committee (CTC)**Recent Context -:**

Pakistan appointed Chair of 1988 Taliban Sanctions Committee and Vice-Chair of 1373 Counter-Terrorism

Committee during its 2025–26 UNSC non-permanent membership, highlighting its role in global counter-terrorism efforts.

About :

1. **1988 TSC:** UNSC subsidiary body monitoring sanctions on Taliban-linked individuals/entities; established 2011 via Resolution 1988.
2. **Objective (TSC):** Ensure compliance with travel bans, arms embargoes, and asset freezes in Afghanistan.
3. **List-based regime:** Covers ~130 individuals/entities; decisions taken by consensus.
4. **1373 CTC:** Created 2001 post-9/11 under Chapter VII to strengthen global counter-terrorism legal frameworks.
5. **Objective (CTC):** Compel states to criminalize terrorism, prevent financing, and deny safe havens to terrorists.
6. **Functions:** TSC monitors sanctions; CTC promotes capacity building, legal reforms, and international cooperation.
7. **Enforcement & Operations:** TSC relies on member cooperation; CTC works with CTED and operates under consensus, avoiding politicization.

Operation Deep Manifest

Recent Context -:

DRI seized Pakistani-origin goods worth ₹9 crore under Operation Deep Manifest, exposing illicit trade via false UAE labelling and strengthening enforcement against economic infiltration from hostile states.

About :

1. **What it is:** Targeted enforcement operation by Directorate of Revenue Intelligence (DRI) to disrupt smuggling of banned Pakistani goods into India.
2. **Launched by:** DRI under CBIC, Ministry of Finance.
3. **Objective:** Enforce import ban on Pakistani goods; prevent economic infiltration via third-country transshipment.

4. **Key Features:** Container surveillance intercepted 39 containers carrying 1,115 tonnes of goods falsely labelled as UAE-origin.
5. **Document Forensics:** Traced shipping records, false declarations, container swaps, and dual-port routing via Dubai (Jebel Ali).
6. **Financial Intelligence:** Exposed fund flow links to Pakistani entities and UAE collaborators.
7. **Significance:** Protects national economic security, reinforces zero-tolerance policy, and deters third-country rerouting of banned goods.

SOURCE- DRISTHI MONTHLY

Women in Indian Armed Forces

Recent Context -:

For the first time, **17 women cadets graduated from the NDA in 2025, marking a historic step toward gender-inclusive military leadership and opening pathways for future women service chiefs.**

About :

1. **Early Entry:** Women joined through Military Nursing Service (1888) and Indian Army Medical Corps (1958) with regular commissions.
2. **Non-Medical Roles:** Introduced in 1992 under Women Special Entry Scheme (WSES) in select non-combat branches.
3. **Permanent Commission:** Granted in limited branches in 2008; Supreme Court mandated PC in all eligible arms in 2020.
4. **Combat Roles:** IAF allowed women fighter pilots from 2016; all branches of Navy opened since 2022; women now in NDA since 2022.
5. **Current Strength:** Women constitute ~4% of Army, serve across Army, Navy, and Air Force in various roles including operations and leadership.
6. **Notable Achievements:** Women officers led key operations (e.g., Operation Sindoor) and maritime expeditions, proving leadership and endurance.
7. **Challenges:** Include physical demands, societal bias, limited combat opportunities,

work-life balance, psychological pressures, and infrastructure inadequacies.

Empowering India's Defence Sector – 2025

Recent Context (30 words):

India is advancing **defence technology** under **Aatmanirbhar Bharat**, leveraging **AI, robotics, cyber warfare, UAVs, and quantum technologies**, while addressing challenges of **foreign dependency** and slow **private sector integration**.

7 UPSC Prelims Points:

1. **Operation Sindoor:** Precision strikes using **Rafale** and **Tejas** aircraft integrated with **C4ISR** and **EW systems**.
2. **BrahMos Missile:** Indigenous **supersonic cruise missile**, exported to **Indonesia**, demonstrating **strategic defence partnerships**.
3. **iDEX & ADITI Scheme:** Supports **indigenous R&D** and development of **critical defence technologies** through startups and academia-industry collaboration.
4. **Defence Industrial Corridors (DICs):** Established in **Uttar Pradesh** and **Tamil Nadu**, attracting **investments** and boosting **indigenous defence production**.
5. **Quantum Technologies:** DRDO's **Quantum Technologies Research Centre (QTRC)** focuses on **secure quantum communication**; free-space demonstration at **IIT Delhi** >1 km.
6. **Indigenisation Efforts:** **Positive Indigenisation Lists** have increased domestic production to **65% of defence equipment**, contributing ₹1.27 lakh crore in FY 2023-24.
7. **Advanced Manufacturing:** Use of **AI, autonomous systems, UAVs (NETRA), ROVs (Daksh)**, and **3D printing** revolutionizes **defence production** and operational efficiency.

Terrorism and India's Security Landscape –2025

Recent Context :

The **Pahalgam attack** highlights persistent **terrorism threats** in **Kashmir**, emphasizing the need for strengthened **intelligence, technology-enabled**

surveillance, counter-radicalization, and enhanced **global counter-terror cooperation**.

7 UPSC Prelims Points:

1. **Cross-Border Terrorism:** Militants infiltrate from **Pakistan**, supported by intelligence agencies; notable attacks include **Pulwama 2019** and **Pahalgam 2025** targeting civilians.
2. **Cyber Terrorism:** Terrorists use **internet platforms** like **Telegram** for propaganda, recruitment, and attacks; India was the **2nd most targeted nation** in 2024.
3. **Left-Wing Extremism (Naxalism):** Active in **central and eastern India**, using **guerilla tactics**; impacts governance and rural development.
4. **Insurgency in Northeastern States:** Conflicts in **Manipur, Nagaland** exploit **porous borders** with **Myanmar** and external arms supply, complicating counter-terror efforts.
5. **Counter-Terrorism Agencies:** **NIA, NSG, CAPFs** (CRPF, BSF, ITBP, SSB), **R&AW, NatGrid** coordinate to handle cross-border, internal, and cyber threats.
6. **Legislative Framework:** **UAPA 1967** and **NSA 1980** provide legal tools for preventive detention, asset freezing, and prosecuting terrorism.
7. **Enhancement Measures:** Adopt **AI surveillance, smart fencing, drones, community engagement, cybersecurity infrastructure**, and **public awareness** to strengthen counter-terrorism.

SOURCE- VISION MONTHLY

Fifth-Generation Fighter Jet – AMCA

Recent Context -:

India approved the execution model for the indigenous **Advanced Medium Combat Aircraft (AMCA)**, aiming for **prototype by 2028-29** and **induction by 2034-35** to strengthen IAF modernization and defence autonomy.

About :

1. **Background:** Approved by Cabinet Committee on Security (CCS) in 2024; led by Aeronautical Development Agency (ADA) under DRDO.
2. **Variants:** AMCA Mk1 with GE-F414 engines; Mk2 planned with fully indigenous engines.



3. **Timeline:** Prototype expected by 2028-29; induction targeted by 2034-35.
4. **Fifth-Generation Features:** Stealth, supercruise, advanced avionics, twin-engine, agile airframes, integrated computer systems, and networked warfare capabilities.
5. **Industry Participation:** Both private and public sector Indian companies can bid; HAL not exclusive; encourages Make in India.
6. **Strategic Importance:** Fills IAF capability gaps, counters regional threats like China's J-20 and Pakistan's J-10C, strengthens technological sovereignty.
7. **Global Context:** Only US, Russia, and China have operational 5th-generation jets; 6th-generation fighters under development globally with AI, hypersonic, and unmanned capabilities.

Silver Notice – INTERPOL

Recent Context -:

INTERPOL issued its first Silver Notice at India's request to track global assets of Shubham Shokeen, wanted for visa fraud, under the pilot project involving 51 participating countries.

About :

1. **Definition:** Silver Notice is part of INTERPOL's colour-coded notices, aimed at tracing and

gathering information on assets of fugitives or key accused internationally.

2. **Purpose:** Enables tracking of fugitives' assets across borders, even if located in foreign countries.
3. **Pilot Project:** India is among 51 countries participating; pilot runs until at least November 2025; each country can request up to 9 Silver Notices.
4. **First Use:** January 2025, issued on behalf of Italy; India's first request targets Shubham Shokeen.
5. **INTERPOL Overview:** Established as ICPC in 1923, renamed INTERPOL in 1956; headquarters in Lyon, France; 196 member countries.
6. **India's Role:** Founding member; CBI serves as India's National Central Bureau (NCB); Bharatpol portal enhances coordination.
7. **Governing Structure:** General Assembly and Executive Committee oversee policies and operations of INTERPOL globally.

Successful Trial of Rudrastra UAV at Pokhran, Rajasthan

Recent Context -:

Hybrid UAV Rudrastra successfully demonstrated vertical takeoff/landing, real-time surveillance, and precision strike over 50 km at Pokhran, showcasing India's indigenous UAV capabilities and defence technology advancements.

About Rudrastra :

1. **Type:** Hybrid Vertical Take-Off and Landing (VTOL) Unmanned Aerial Vehicle (UAV).



2. **Manufacturer:** Solar Defence and Aerospace Limited (SDAL), India.
3. **Flight Range & Endurance:** Total range 170 km, endurance approximately 1.5 hours, including loitering over target.
4. **Combat Capability:** Equipped with precision-guided anti-personnel warheads, capable of mid-altitude release.
5. **VTOL Feature:** Can take off and land vertically, enabling flexible deployment from constrained areas.
6. **Surveillance:** Provides real-time video relay for target monitoring and reconnaissance.
7. **Autonomous Operation:** Can return to launch position in automated mode after mission completion.

Exercise Khaan Quest

Recent Context -:

Indian Army contingent reached Ulaanbaatar, Mongolia to participate in the 22nd Multinational Exercise Khaan Quest, enhancing preparedness for UN peacekeeping missions and multinational military cooperation.

About Exercise Khaan Quest:

1. **Genesis:** Bilateral initiative between the United States and Mongolia in 2003; first multilateral exercise held in 2006.
2. **Objective:** Prepares participating forces for UN peacekeeping missions under Chapter VII of the UN Charter.
3. **Chapter VII:** Deals with action concerning threats to peace, breaches of peace, and acts of aggression.
4. **Participants:** Multinational, including India, the US, Mongolia, and several other countries.
5. **Activities:** Includes tactical drills, humanitarian operations, and joint military maneuvers.
6. **Significance for India:** Enhances interoperability, global peacekeeping readiness, and military diplomacy.
7. **Frequency:** Annual exercise, promoting sustained military collaboration in the Asia-Pacific region.



Miscellaneous

TOPICS COVERED-

- **IREDA 'Excellent' Rating** – Indian green financing NBFC recognized for top performance in renewable energy sector.
- **Deep Seafloor Exploration** – Over 99% of Earth's deep oceans remain unexplored; India's Deep Ocean Mission underway.
- **Stingless Bees** – Native bees in Northeast India enhance crop yields and produce medicinal honey.
- **NeVA Digital Platform** – Paperless legislative workflow platform for real-time access and transparency.
- **Global Gender Gap Report 2025** – India ranks 131/148 with 64.1% parity; political empowerment lags.
- **UNFPA State of World Population 2025** – Highlights reproductive autonomy crisis despite India's population trends.
- **Women in Agriculture** – UNGA declares 2026 as International Year of Woman Farmer; women's land ownership challenges.
- **Operation Rising Lion** – Israel's preemptive airstrikes on Iran's nuclear and missile sites.
- **Socotra Island Programme** – UAE-WHO initiative addressing child and maternal malnutrition in Yemen.
- **Fordow Nuclear Facility** – Deep underground Iranian nuclear site with near-weapons-grade enrichment.
- **Kosi River Sand Mining Halt** – Uttarakhand HC orders stop to illegal mining due to ecological risks.
- **Amrit Bharat Station Scheme** – Redevelopment of 1,309 railway stations integrating modern amenities and heritage.
- **India Elected to IAS Presidency** – India wins first ballot-based IAS election for 2025–28.
- **Industrial Iron Pollution in Oceans** – Disrupts nutrient cycles and triggers harmful algal blooms.
- **Miniratna Status to 3 DPSUs** – MIL, AVNL, IOL gain autonomy to boost efficiency and competitiveness.
- **RGI Birth Certificate Directives** – States to issue certificates within 7 days, enabling universal legal identity.
- **Bonnet Macaque Sterilisation Plan** – Kerala to curb macaque population and human-wildlife conflict.
- **CRISPR for Climate-Resilient Crops** – Targeted gene activation in stress conditions enhances crop resilience.
- **Project Elephant Review** – Population estimation, conflict mitigation, and genetic profiling of elephants.
- **Male Mahadeshwara Hills Wildlife Sanctuary** – Pending Tiger Reserve to strengthen corridors in Karnataka.
- **Rhone Glacier Avalanche** – Climate-driven glacier retreat highlights vulnerability in Swiss Alps.
- **Shiva-Vishnu Dual-Faced Lamp** – 15th-century artifact showing syncretism in Karnataka temple art.
- **International Day Against Drug Abuse 2025** – Focus on stopping organized crime linked to drugs.
- **Enhanced Rock Weathering** – Climate mitigation via crushed basalt capturing CO₂ in soils.
- **Rice Yellow Mottle Virus** – Threatens food security in Africa; spreading to new regions like Turkey.
- **Lead to Gold at CERN** – Nuclear transmutation demonstration using Large Hadron Collider.
- **Nothopegia Fossil Leaves** – Evidence of ancient tropical vegetation in Northeast India.
- **Urban Migration and Womanhood** – Educated women's migration reshapes autonomy, kinship, and gender norms.
- **Cultural Appropriation (Kolhapuri Chappals)** – IP concerns over misuse of GI-tagged Indian handicrafts.
- **Tier-2 Influencers Redefining Digital Culture** – Local creators shaping vernacular content and cultural capital.
- **Manosphere** – Online misogynistic communities threatening gender equality.

- **Women in Armed Forces** – First female NDA batch graduates; expanding combat and leadership roles.
- **Global Tobacco Epidemic 2025** – India progresses in advertising bans and digital content regulation.
- **WHO Report on Social Connection** – Loneliness affects youth and elderly, impacting health and productivity.
- **Gender Budgeting Knowledge Hub Portal** – Centralized platform for integrating gender equality in budgets.
- **India's Vaccine Revolution** – Reduced zero-dose children to 0.06%, recognized by UN IGME.
- **Hydraulic Systems and Applications** – Fluid power systems transmitting force for industrial and transport use.



MISCELLANEOUS

SOURCE – DRISHTI

IREDA Bags 'Excellent' Ratings

Recent Context :-

Indian Renewable Energy Development Agency Ltd. (IREDA) received an 'Excellent' rating for FY 2023-24 from the Department of Public Enterprises (DPE), marking the fourth consecutive year of top recognition.

About IREDA :

- Full Form & Type:** Indian Renewable Energy Development Agency Ltd.; a Navratna Public Sector Company under the Ministry of New and Renewable Energy (MNRE).
- Established:** 1987 as a Non-Banking Financial Institution (NBFC).
- Purpose:** Promotes, develops, and finances renewable energy and energy efficiency projects.
- Sectoral Role:** Largest green financing NBFC in India, encouraging lending from banks and financial institutions.
- Recognition:** Awarded 'Excellent' rating by DPE for exceptional performance in Power and NBFC sectors.
- DPE Ratings:** Assess CPSEs on MoU targets like profitability, efficiency, and governance; grades range from Poor to Excellent.
- Significance:** Reflects leadership in sustainable energy financing and contribution to India's green energy transition.

Deep Seafloor Exploration

Recent Context :-

A study shows that ~99.999% of the Earth's deep seafloor (below 200 m) remains visually unexplored, with most dives concentrated in a few countries and geomorphic hotspots.

Key Points

1. Deep Ocean Definition & Characteristics:

- Depth: >200 meters, where sunlight cannot penetrate.
- Temperature: ~4°C.

- Pressure: 40–110+ times atmospheric pressure.
- Nutrient-poor but hosts diverse life adapted to extreme conditions.

2. Mesopelagic Zone (200–1,000 m):

- Contains ~90% of global fish biomass.
- Inhabitants: fish, squid, krill.

3. Exploration Status:

- 97% of deep-sea dives done by US, Japan, New Zealand, France, Germany.
- Focused mainly on ridges, canyons; abyssal plains largely unexplored.

4. India's Initiatives:

- Deep Ocean Mission (DOM), launched 2021, aims to explore and sustainably utilize deep-sea resources.

Stingless Bees

Recent Context:

Researchers in Nagaland identified native stingless bees (*Tetragonula iridipennis* and *Lepidotrigona arcifera*) as safe and effective pollinators that enhance crop yields and produce medicinal honey, suitable for Northeast India.

ABOUT

1. Classification:

- Tribe: **Meliponini**
- Family: **Apidae**
- Region: Tropical and subtropical zones

2. Key Characteristics:

- **Size & Colour:** Small, black or dark-bodied with yellow markings
- **Body Features:** Two pairs of wings, short antennae, large oval eyes, oval face with pointed chin
- **Behaviour:** Eusocial, live in colonies

3. Habitat & Nesting:

- Nest Sites: Tree trunks, termite mounds, wall cavities, wooden boxes
- Nest Construction: Made of **resin, mud, and wax**
- Nest Structure: Contains honey pots and brood cells arranged **spirally or randomly**

NeVA Digital Platform

Recent Context:

The **National e-Vidhan Application (NeVA)** platform was inaugurated for the **Puducherry Legislative Assembly** under the “One Nation, One Application” initiative.



Key Features of NeVA:

- Digitisation:** Workflow-based platform for paperless, efficient, and transparent legislative functioning.
- Funding & Hosting:** Fully funded by the **Ministry of Parliamentary Affairs**, hosted on **NIC Cloud – MeghRaj**.
- Accessibility:**
 - Device-neutral, member-centric
 - Accessible via tablets, handheld devices, and **mNeVA mobile app** (Android/iOS)
- Functionality:**
 - Real-time access to rules, notices, business lists, bills, bulletins, questions, and reports
 - Secure portal for legislators to submit questions and notices
 - Live-streaming of proceedings for transparency
 - Unified digital repository across all States/UTs
- Implementation:** First implemented in **Nagaland (2022)**.

Global Gender Gap Report 2025

Recent Context -:

India ranked 131st out of 148 countries in the World

Economic Forum’s Global Gender Gap Report 2025, scoring 64.1% parity, slipping two spots from 2024 despite certain sectoral improvements.

About -:

- Publisher & Year:** Released annually by the World Economic Forum since 2006; measures gender parity across 148 countries.
- Dimensions Covered:** Economic Participation & Opportunity, Educational Attainment, Health & Survival, Political Empowerment.
- Scoring Method:** Scale of 0 to 1 — 1 = full parity, 0 = complete inequality.
- India’s 2025 Rank & Score:** 131st with 64.1% parity; improvements in education (97.1%) and health; decline in political empowerment.
- Top Global Performers:** Iceland (1st for 16th year), followed by Finland, Norway, UK, New Zealand.
- South Asia Ranking:** Bangladesh (24th) leads; Pakistan lowest globally at 148th; India trails Bhutan, Nepal, Sri Lanka.
- India’s Policy Moves:** Nari Shakti Vandan Adhinyam (2023), Beti Bachao Beti Padhao, Stand-Up India, Mahila e-Haat, PMJDY for financial inclusion, 33% political reservation.

UNFPA State of World Population Report 2025

Recent Context -:

UNFPA’s 2025 report, “*The Real Fertility Crisis*”, reaffirms India as the world’s most populous nation, highlighting sub-replacement fertility, demographic shifts, ageing, and the need to prioritise reproductive autonomy over population control.

About -:

- Publisher & Establishment:** Released by UNFPA (est. 1969, renamed 1987), UNGA subsidiary focusing on sexual and reproductive health in 150+ countries.
- India’s Population (2025):** 146.39 crore; projected peak at 170 crore in early 2060s, then decline.
- Fertility Rate:** TFR at 1.9 (below replacement level); Bihar, Meghalaya, and UP still above 2.7.

4. **Demographic Profile:** 68% working-age (15–64), median age 28.2 years; elderly (65+) at 7%.
5. **Reproductive Autonomy Barriers:** Financial, housing, job insecurity, poor maternal care, social pressure; report calls for universal access to contraceptives and safe abortion.
6. **Climate Vulnerability:** Over 80% of India's population lives in climate risk zones; dependency ratio at 47%.
7. **UNFPA Goals by 2030:** Zero unmet need for family planning, zero preventable maternal deaths, zero gender-based violence and harmful practices.

Strengthening Women's Role in Agriculture

Recent Context -:

The UNGA has declared 2026 as the International Year of the Woman Farmer, acknowledging women's pivotal but under-recognised role in food production, especially in developing countries and South Asia.

About :

1. **Women's Contribution Globally:** Women produce 60–80% of food in developing countries; comprise 39% of South Asia's agricultural labour force.
2. **India's Participation:** 80% of rural women engaged in agriculture; 3.6 crore women farmers and 6.15 crore agricultural labourers (Census 2011).
3. **Key Challenge – Land Ownership:** Only 14% own agricultural land; NFHS-5 estimates just 8.3% have land titles, limiting access to credit, subsidies, and technology.
4. **Government Schemes:** MKSP, SMAM, NFSM (30% budget for women farmers), Per Drop More Crop, Rainfed Area Development, Mahila Kisan Yojana.
5. **Innovative Initiatives:** ENACT project (climate advisories), flood-resistant rice, Namo Drone Didi (15,000 SHGs with drones), Lakhpati Didi Scheme.
6. **Market & Mobility Issues:** Gender-based discrimination, lack of transport, and

information asymmetry restrict fair price access.

7. **Climate Change Vulnerability:** Women farmers disproportionately affected by floods, droughts, and increased domestic workload due to extreme weather.

SOURCES – INSIGHTS

Operation Rising Lion

Recent Context -:

Israel launched **Operation Rising Lion**, a large-scale airstrike targeting Iran's nuclear and military infrastructure after IAEA reported Iran's secret uranium enrichment, aiming to curb nuclear advancement and strategic threats.

ABOUT :

1. **Natanz Nuclear Facility (Isfahan Province):** Iran's primary uranium enrichment site, heavily damaged.
2. **Fordow Enrichment Plant (Qom Province):** Deep underground facility for high-grade uranium enrichment, partially targeted.
3. **Bid Kaneh Missile Complex:** Key missile development and production site hit by precision strikes.
4. **Kermanshah Missile Base:** Central hub for short/medium-range missiles, struck to limit retaliation.
5. **Tabriz Military Bases & Research Centre:** Targeted to disrupt command and destroy ballistic storage.
6. **Tehran Command Centre:** Underground IRGC air force leadership base hit.
7. **Reason for Operation:** Preemptive strike due to Iran's nuclear violations and perceived existential threat to Israel.

Socotra Island

Recent Context -:

The **UAE and WHO** launched a two-year humanitarian programme on **Yemen's Socotra Island** to combat severe child and maternal malnutrition amid complex geopolitical and security challenges.

ABOUT :

1. **Location:** 340 km southeast of Yemen, in the Indian Ocean near the Horn of Africa.
2. **Biodiversity:** Known as the “Galápagos of the Indian Ocean”; over 37% of plant species are endemic.
3. **UNESCO Status:** Designated a **World Heritage Site** in 2008.
4. **Geography:** Features coastal plains, limestone plateau, and Hagghier Mountains; semi-desert climate.



5. **Political Control:** Part of Yemen, influenced by UAE-backed forces and Southern Transitional Council (STC).
6. **Neighbouring Islands:** Socotra Archipelago includes **Abd Al-Kuri, Samhah, and Darsa**.
7. **Unique Flora & Fauna:** Home to **Dragon’s Blood trees, frankincense, myrrh, and endemic aloes**; isolated historically by monsoon winds.

Fordow Nuclear Facility

Recent Context :-

Amid rising Israel-Iran tensions, the **Fordow nuclear facility** is in the spotlight as reports suggest only the **US GBU-57 bunker buster** could potentially destroy its fortified underground site.

ABOUT :

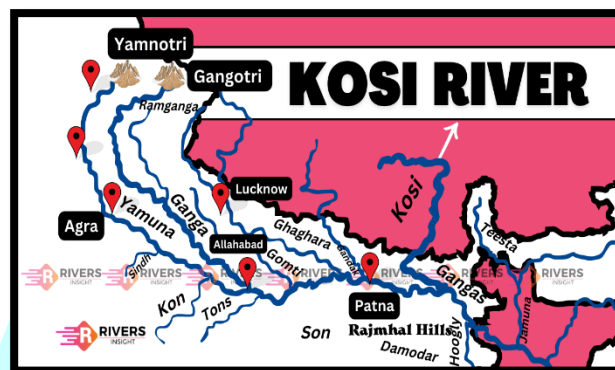
1. **Location:** Near **Qom**, southwest of Tehran, Iran.
2. **Depth & Fortification:** Buried **80 metres underground** inside a mountain, reinforced with soil, rock, and concrete.
3. **Air Defences:** Protected by multi-layered systems, including **Iranian and Russian missiles**.
4. **Operational Since:** **2009**, verified by IAEA.

5. **Uranium Enrichment:** Capable of enriching uranium up to **60%**, near weapons-grade levels.
6. **Strategic Significance:** Central to Iran’s **nuclear breakout potential** and resistance to Western oversight.
7. **Resilience:** Designed to withstand **standard military airstrikes**, making it a highly secure nuclear site.

Kosi River

Recent Context :-

Uttarakhand High Court ordered an **immediate halt to illegal sand mining** in the Kosi River (Bazpur) after a public interest petition highlighted severe ecological damage and flooding risks.



ABOUT :

1. **Origin:** Confluence of **Sun Kosi, Arun Kosi, and Tamur Kosi** streams from Nepal and Tibet.
2. **Countries Flowed Through:** **China (Tibet), Nepal, and India**; mainly Bihar in India.
3. **Tributaries:** Major ones include **Sun Kosi, Tama Koshi, Dudh Koshi, Indravati, Likhu, Arun, Tamor**.
4. **Confluence:** Joins the **Ganges River** south of Purnea, forming part of the **Ganga basin**.
5. **Length & Drainage:** **~724 km** long; drainage area **74,500 sq km** (11,070 sq km in India).
6. **Flood Risks:** Called “**Sorrow of Bihar**” due to frequent floods and shifting channels; highly braided with no permanent course.
7. **Uses & Management:** Controlled via **Chatra Gorge dam** for flood moderation, irrigation, hydropower, fisheries; supports **maize cultivation** on fertile sandy soils.

Amrit Bharat Station Scheme (ABSS)

Recent Context -:

Prime Minister inaugurated **103 redeveloped railway stations** across 86 districts in 18 States/UTs under ABSS, aiming to transform stations into modern, culturally integrated, and accessible transport hubs.

ABOUT :

1. **Launch:** Introduced by **Ministry of Railways** in **December 2022**; plans to redevelop **1,309 stations** across India.
2. **Redevelopment Approach:** Combines **modern amenities** with **regional architecture**, customized to local cultural heritage.
3. **Examples:** Stations reflect local culture— **Dwarka** (Dwarkadheesh Temple), **Ahmedabad** (Modhera Sun Temple), **Kumbakonam** (Chola style), **Gurugram** (modern urban design).
4. **Passenger Amenities:** Includes **waiting halls, clean toilets, roofed platforms, Wi-Fi, escalators, lifts, lounges, business areas, improved signage.**
5. **Inclusivity:** Aligned with **Accessible India Campaign (Sugamya Bharat Abhiyan)**; ramps, Braille signage, tactile paths, accessible toilets, lifts in subways/FOBs.
6. **Urban Integration:** Stations act as **multimodal city centres**, connecting bus, metro, and city infrastructure.
7. **Sustainability Focus:** Incorporates **eco-friendly and noise-reducing infrastructure** to enhance urban mobility and environmental standards.

India Elected to IAS Presidency

Recent Context -:

India has been elected **President of the International Institute of Administrative Sciences (IIAS)** for **2025–2028**, securing **61.7% votes**, the first ballot-based election in IIAS history.

ABOUT :

1. **About IIAS:** Founded in **1930**, headquartered in **Brussels**; international nonprofit promoting **scientific public administration.**

2. **Membership:** Global federation—**31 member countries, 20 national sections, 15 academic research centres.**
3. **Notable Members:** India, Japan, China, Germany, Italy, Korea, Saudi Arabia, South Africa, Switzerland, Mexico, etc.
4. **India's Membership:** Member since **1998**, represented by **Department of Administrative Reforms and Public Grievances (DARPG).**
5. **UN Collaboration:** Works with **UN CEPA** and **UNPAN** on public administration issues; **not formally a UN body.**
6. **Significance:** Platform for **developing solutions to contemporary governance and policy challenges** globally.
7. **Election Milestone:** First-ever IIAS election through **ballot**, India won with **61.7% votes.**

Industrial Iron Pollution Disrupts Ocean Nutrient Cycles

Recent Context -:

A study reveals **industrial iron pollution** accelerates nutrient depletion, disrupts **marine ecosystems**, triggers harmful algal blooms, and threatens the marine food chain amid climate change.

ABOUT :

1. **Phytoplankton:** Microscopic algae with chlorophyll; base of the marine food chain; require sunlight; excess iron can cause **harmful algal blooms (HABs).**
2. **Marine Food Chain Impact:** Nutrient depletion affects **zooplankton, fish, whales**, especially species unable to migrate or adapt.
3. **Iron Source:** Human activity, particularly **industrial iron and steel production**, releases iron into oceans.
4. **India's Contribution:** Iron and steel sector contributes **~5% of India's GHG emissions.**
5. **Pollutants Released:** SO_x, NO_x, CO₂, CO, particulate matter (PM_{2.5} & PM₁₀), polycyclic aromatic hydrocarbons (PAHs).
6. **Waste Generation:** Industrial operations produce **wastewater, hazardous waste, and**

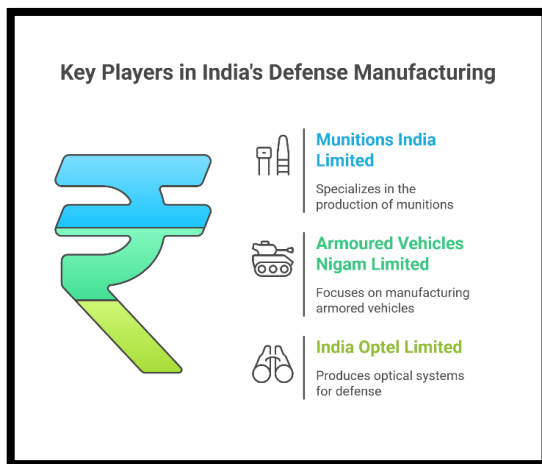
solid waste, causing air, water, and soil pollution.

- Ecological Risk:** Excess iron accelerates **phytoplankton blooms**, leading to **oxygen depletion** and disruption of ocean nutrient cycles.

Miniratna Status to 3 DPSUs

Recent Context :-

The Ministry of Defence granted **Miniratna (Category-I)** status to **Munitions India Limited, Armoured Vehicles Nigam Limited, and India Optel Limited**, enhancing autonomy and efficiency of key Defence PSUs.



ABOUT :

- DPSUs Involved:** MIL, AVNL, IOL – carved out of **Ordnance Factory Board (OFB)** in 2021.
- MIL Products:** Ammunition (small to high calibre), mortars, rockets, grenades, explosives.
- AVNL Products:** Main Battle Tanks (Arjun, T-90), BMP-II Sarath, Defence mobility vehicles (Stallion, LPTA).
- IOL Products:** Opto-electronic systems, vision equipment for tanks, artillery, naval weapons.
- Eligibility Criteria for Miniratna-I:** Profit for last **3 consecutive years**, pre-tax profit \geq Rs. 30 crores in at least one year, **positive net worth**.
- Autonomy Benefits:** Can **invest, raise capital, and make decisions** without extensive government approval.

- Significance:** Boosts **efficiency, competitiveness**, and global reach of Indian Defence PSUs.

SOURCE – VISION MONTHLY

RGI Directives on Birth Certificates

Recent Context :

The Registrar General of India has directed states to issue birth certificates within 7 days, preferably before hospital discharge, aligning with digital registration reforms and global commitments for universal legal identity.

About

- Authority:** Issued by Registrar General of India (Ministry of Home Affairs).
- Timeline:** Birth certificates to be issued within 7 days of registration.
- Coverage:** Government hospitals conduct over 50% of institutional births in India.
- Legal Framework:** Registration under RBD Act, 1969; free within 21 days.
- 2023 Amendment:** Made digital registration mandatory; electronic certificates recognized as official proof.
- Governance Use:** Digital birth certificates now sole proof for school, jobs, marriage, passports, etc.
- Global Alignment:** Supports UN ESCAP CRVS Decade goals and SDG 16.9 for universal legal identity.

Bonnet Macaque

Recent Context

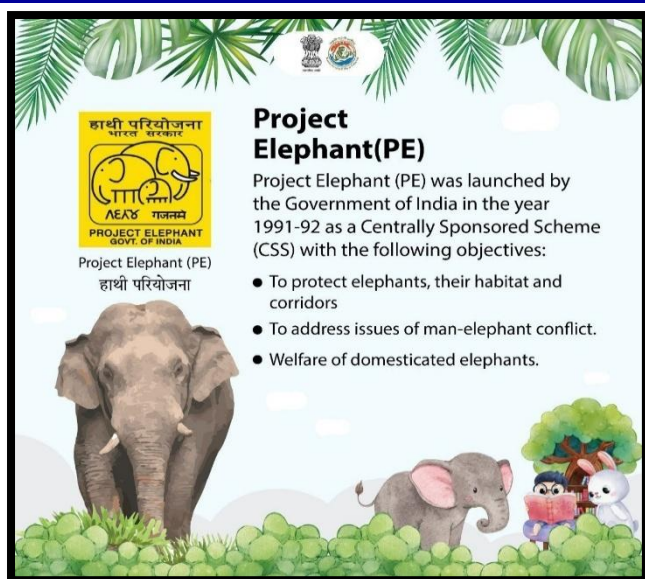
Kerala is planning mass sterilisation of Bonnet Macaques to curb their rising population and mitigate growing human–wildlife conflicts in both rural and urban landscapes.

About

- Scientific Name:** *Macaca radiata*, native to southern India's Oriental region.
- Distinct Feature:** Bonnet-like hair whorl on head.

- Habitat:** Western Ghats' evergreen & dry deciduous forests, also urban/agricultural areas.
- Conservation Status:** WPA 1972 – Schedule I; IUCN – Vulnerable.
- Behaviour:** Arboreal & terrestrial, diurnal, social troops of ~30.
- Diet:** Omnivorous – fruits, leaves, insects, bird eggs, lizards; raids human food sources.
- Communication:** Visual, tactile, vocal signals; can recognise alarm calls of other primates.

CRISPR Technology for Climate-Resilient Crops



Recent Context

Bose Institute scientists (DST) have developed a **CRISPR-dCas9 molecular tool** enabling plants like tomato to activate stress-response genes only during heat or **pathogen stress, improving resilience and energy efficiency.**

About

- CRISPR-dCas9:** Modified CRISPR-Cas9 with inactive Cas9 that binds DNA but doesn't cut it; works as a gene switch.
- Stress Response Activation:** Turns on defense genes only during stress, conserving plant energy.
- Trigger Mechanism:** Uses tomato protein TM domain (NACMTF3) to control dCas9 entry into nucleus.
- Pathogen Defense Genes:** Activates *CBP60g* & *SARD1* under bacterial attack.

- Heat Stress Genes:** Activates *NAC2* & *HSFA6b* for water retention & thermotolerance.
- Tested Crops:** Tomato, potato, tobacco—best results in tomato.
- Benefit:** Enhances climate resilience without permanent DNA alteration.

Review of Project Elephant

Recent Context

The Environment Ministry reviewed Project Elephant (1992), completing Phase-I of synchronized elephant population estimation in the Northeast, and **addressed mortality mitigation, genetic profiling, and conflict management in elephant corridors.**

About

- Launched:** 1992, Ministry of Environment, Forest & Climate Change.
- Aim:** Protect elephants, their habitat, and migration corridors; address human–elephant conflict.
- Recent Measures:** High-risk railway zones mapped; 73 elephant deaths (2019–2024) from train collisions.
- Genetic Profiling:** Created profiles for captive elephants.
- Population:** ~29,964 elephants (2017 census), 60% of global Asian elephant population.
- Status:** IUCN – Endangered; WPA 1972 – Schedule I; CITES – Appendix I.
- Key Schemes:** Project REHAB, Gaj Yatra, MIKE Programme, Elephant Reserves & Corridors.

Male Mahadeshwara Hills Wildlife Sanctuary

Recent Context:

Karnataka's Male Mahadeshwara Hills Wildlife Sanctuary, a vital tiger corridor, is under a long-pending proposal for Tiger Reserve status, which would make Chamarajanagar India's first district with three tiger reserves.

About

- Location:** Chamarajanagar district, Karnataka; declared Wildlife Sanctuary in 2013.

- Habitat:** Dry deciduous dominant, with moist deciduous, semi-evergreen, evergreen & shola patches.
- Connectivity:** Links BRT Tiger Reserve, Cauvery Wildlife Sanctuary (Karnataka) & Sathyamangalam Tiger Reserve (Tamil Nadu).
- Fauna:** Tigers, leopards, elephants, rich prey base.
- Tiger Reserve Proposal:** Pending ~15 years; would be Chamarajanagar's 3rd Tiger Reserve (with Bandipur & BRT).
- Tiger Numbers:** Karnataka has 563 tigers (2nd after Madhya Pradesh).
- Communities:** Soligas (ST) & Lingayats reside in and around the sanctuary.

Rhone Glacier

Recent Context :

In May 2025, climate-driven instability caused an avalanche from Birch Glacier near Rhone Glacier, Switzerland, flooding parts of Blatten village and highlighting rapid glacier retreat in the Alps.

About

- Location:** Southern Swiss Alps near Furka Pass & Italian border; source of the Rhône River.
- River Course:** Rhône flows through Switzerland & France into the Mediterranean Sea.
- Ranking:** Fifth largest glacier in Switzerland; most accessible & extensively studied.
- Features:** Contains crevasses and ice caves.
- Retreat:** Shrinking since 19th century; may disappear by end of 21st century.
- Swiss Glaciers:** Switzerland has the highest number of glaciers in Europe.
- Alps Facts:** Spread across 8 countries; highest peak is Mont Blanc (France–Italy border).

Dual-Faced Lamp Depicting Shiva–Vishnu Syncretism

Recent Context: A rare 15th-century dual-faced lamp blending Shaiva and Vaishnava iconography was discovered at the Perdoor Anantapadmanabha Temple in Udupi district, Karnataka.

About

- Location:** Found in Perdoor Anantapadmanabha Temple, Udupi, Karnataka.
- Date:** Donated in 1456 CE (inscription evidence).
- Iconography:**
 - One face: Shiva as Nataraja in Pralaya Tandava with Parvati, Ganapati, Bringi, Khadga Ravana over Goddess Mari (Vismaya Mudra).
 - Other face: Vishnu as Anantapadmanabha with Brahma, Indra, Agni, Varuna.
- Significance:** Symbolizes syncretism of Shaiva–Vaishnava traditions.
- Art Style:** Figures in Samabhanga pose with distinctive headgear.
- Cultural Aspect:** Highlights coexistence of folk deity worship (Goddess Mari) with mainstream Hinduism.
- Terminology:**
 - Vismaya Mudra* – one-handed gesture of wonder (palm inward, fingers spread).
 - Samabhanga* – equal distribution of body weight along central axis.

International Day Against Drug Abuse and Illicit Trafficking 2025

Recent Context: On 26th June 2025, the Ministry of Social Justice and Empowerment organized a national event to mark World Drug Day with the theme “*Break the Cycle. #StopOrganizedCrime*”.

About

- Declaration:** Established by UNGA in 1987; observed annually on 26th June.
- Theme 2025:** *Break the Cycle. #StopOrganizedCrime*.
- UNODC:** Formed in 1997; publishes *World Drug Report* annually on 26th June.
- Major Drug Regions:** Golden Crescent (Iran, Afghanistan, Pakistan), Golden Triangle (Laos, Myanmar, Thailand), Triple Frontier (Argentina, Brazil, Paraguay).

5. **Common Drugs:** Cannabis (THC psychoactive compound), opioids, amphetamines, cocaine, ecstasy.
6. **India's Nodal Agency:** MoSJE for prevention, treatment, rehabilitation, awareness.
7. **Key Initiatives in India:** Nasha Mukta Bharat Abhiyaan (NMBA), NIDAAN Portal, NCORD Portal.

Enhanced Rock Weathering (ERW)

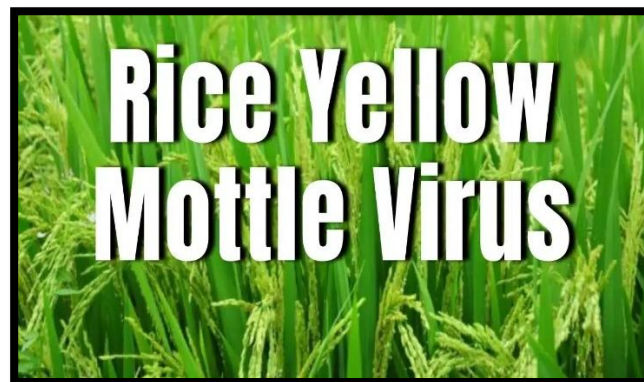
Recent Context: ERW is gaining traction globally as a climate change mitigation method, with Brazil issuing the first verified ERW carbon credits and tech giants like Google investing heavily.

About

1. **Definition:** Climate mitigation technique using finely crushed basalt spread on agricultural lands to accelerate natural rock weathering and capture CO₂.
2. **Process:** Basalt breakdown converts CO₂ into bicarbonates, eventually forming limestone; increased surface area speeds up sequestration.
3. **Benefits:** Enhances soil alkalinity, boosts crop yield, reduces downstream CO₂ emissions by neutralizing soil acids.
4. **Effectiveness:** Variable results — up to 10.5 tonnes CO₂/ha over 4 years in some studies, lower in others.
5. **Risks:** Potential release of heavy metals from certain rocks; risk of overestimating carbon capture leading to inflated carbon credits.
6. **Global Trials:** Implemented in India (Darjeeling tea estates), USA (soy, maize farms), Brazil (first verified ERW credits).
7. **Key Investments:** Google signed largest ERW deal (200,000 tonnes credits); Indian startup Mati Carbon won USD 50 million X Prize for carbon removal.

Rice Yellow Mottle Virus (RYMV)

Recent Context: RYMV is causing severe yield losses across Africa, threatening food security, with cases now reported beyond the continent, including Turkey.



About

1. **Origin:** Emerged in Eastern Arc Mountains, Tanzania (1800s) from wild grasses; spread across Sub-Saharan Africa.
2. **Causal Agent:** Belongs to *Sobemovirus*; high genetic variability enables rapid evolution.
3. **Transmission:** Via beetles (*Chrysomelidae*), grasshoppers, livestock, mechanical contact, root injuries; not seed-borne.
4. **Symptoms:** Yellow-green streaks, mottling, leaf twisting, stunted growth, poor panicle formation, sterility, plant death.
5. **Impact:** Yield loss ranges from 10% to 100%, with early infection most destructive.
6. **Geographical Spread:** Endemic to Africa; reported in Turkey.
7. **Control Measures:** Vector management, resistant rice varieties, and minimizing mechanical spread.

Turning Lead into Gold

Recent Context: In 2025, CERN scientists used the Large Hadron Collider to briefly transform lead into gold via ultra-peripheral collisions, demonstrating modern nuclear transmutation.

About

1. **Nuclear Transmutation:** Changing an element into another by altering proton/neutron number in the nucleus.
2. **Lead to Gold Conversion:** Achieved by removing 3 protons from lead (atomic no. 82) to form gold (atomic no. 79).
3. **Method Used:** Ultra-peripheral collisions (near-miss) between accelerated lead nuclei at LHC.

4. **Photon Emission:** Electromagnetic fields from nuclei interactions emit high-energy photons, causing electromagnetic dissociation.
5. **Other Elements Formed:** Depending on proton loss, thallium and mercury also produced.
6. **Timescale & Quantity:** Transformation lasted only a nanosecond and in minute quantities.
7. **Significance:** Advances understanding of atomic interactions under extreme conditions; example of artificial nuclear transmutation.

Nothopegia Fossil Leaves

Recent Context: Fossilized Nothopegia leaves, dated to the late Oligocene (24–23 million years ago), were discovered in Assam’s Makum Coalfield, revealing evidence of past tropical vegetation in Northeast India and its subsequent extinction due to climatic changes.

About

1. **Genus & Family:** Nothopegia belongs to family *Anacardiaceae* (same as mango).
2. **Current Distribution:** Found only in the Western Ghats, a UNESCO World Heritage biodiversity hotspot.
3. **Fossil Age & Location:** Late Oligocene fossils (24–23 Mya) discovered in Makum Coalfield, Assam.
4. **Climate Reconstruction Tool:** CLAMP (Climate Leaf Analysis Multivariate Program) used to estimate ancient climate.
5. **Reason for Northeast Extinction:** Himalayan uplift altered temperature, rainfall, and wind patterns, making region unsuitable.
6. **Leaf Morphology:** Broad leaves with reticulate venation, adapted to warm and humid tropical climates.
7. **Biogeographical Insight:** Example of climate-driven species migration and survival in climatically stable Western Ghats.

SOURCE – INDIAN EXPRESS

Urban Migration and Redefinition of Womanhood & Kinship

Recent Context :

Urban migration of educated, working middle/upper-class women in India is reshaping notions of

womanhood, autonomy, and kinship, challenging patriarchal restrictions and signalling shifts in gender relations under globalisation.

About:

1. Migration Trends –

- Earlier male-dominated; now more educated/unmarried women move to metros for education & jobs.
- Driven by aspirations, opportunities, service-sector growth, suburbanisation.

2. Breaking Patriarchy –

- Small towns: restrictive norms → cities: autonomy, career choice, financial independence.
- NSSO PLFS (2023-24): Urban female labour force participation ↑ to **28% (from 23.8% in 2021-22)**.

3. Changing Womanhood & Kinship –

- Marriage reimagined as *mutual contract*; rise in inter-caste, inter-community, court marriages.
- Trends: Higher marital age, emphasis on self-love, “me time,” informed reproductive choices.
- Families more accepting; modernity linked with autonomy.

4. Social Backlash & Concerns –

- NCRB (2022): Overall crime ↓ but crimes against women ↑, concentrated in metros (15.5% of cases vs 13.8% population share).
- Moral policing, restrictions in housing, surveillance of women’s choices.
- Women deploy resilience & new strategies to navigate constraints.

5. Class & Caste Dimensions –

- **Middle/Upper class women:** Pull migration (aspiration, opportunity).
- **Lower caste/tribal women:** Push migration (agrarian crisis, poverty, survival).
- Experiences of “freedom” vary across social location.

Cultural appropriation

Recent context -

Italian luxury brand Prada faced accusations of cultural appropriation for selling leather sandals resembling India's GI-tagged Kolhapuri chappals, raising concerns over IP gaps and artisan livelihood protection.

About:

1. **Definition:** Cultural appropriation is adoption of elements from one culture by another, often dominant over marginalised, in ways seen as disrespectful or exploitative.
2. **Kolhapuri Chappals Origin:** 12th century, during King Bijjal's rule; handcrafted leather sandals from Maharashtra & Karnataka.
3. **GI Tag:** Granted in 2019 under India's Geographical Indications of Goods Act, 1999; made from bag-tanned vegetable leather.
4. **Global GI Protection Issue:** GI rights are territorial; no automatic international GI protection—action abroad depends on bilateral agreements or foreign IP laws.
5. **Ethical Angles:** Violates Kantian ethics, utilitarian principles, and Amartya Sen's Capability Approach; harms dignity and livelihoods of artisans.
6. **Current Challenge:** Only 95 authorised users registered under GI despite over 10,000 artisan families involved.
7. **Examples of Appropriation:** Starbucks' "Golden Latte" (Haldi Doodh), Gucci's kaftan resembling Indian kurta.

Tier-2 Influencers Redefining Cultural Capital in Digital India

Recent Context -:

The rise of Tier-2 and Tier-3 city influencers in India is reshaping cultural capital, decentralizing influence, promoting vernacular content, and integrating local traditions into mainstream digital culture.

About :

1. **Cultural Capital (Pierre Bourdieu):** Non-economic assets like education, language, and cultural knowledge enabling social mobility; earlier dominated by metro cities, elite institutions, and English.

2. **Tier-2 Influencer Base:** Creators from cities like Jaipur, Patna, Surat, Guwahati; regional identity drives audience connection; aided by platforms like YouTube, Instagram, ShareChat.
3. **Vernacular Content Power:** Over 50% of urban internet users prefer regional languages; ShareChat has 180M+ monthly users across 15 languages.
4. **Revival of Traditions:** Digital promotion of folk music, local cuisines, and rituals (e.g., Manganiyar music, Village Cooking Channel with 20M+ subscribers).
5. **Subaltern Voices:** Platforms for Dalit, tribal, OBC creators; e.g., Khabar Lahariya run by Dalit women journalists.
6. **Economic Impact:** ~80% of creators on ShareChat/Moj from Tier-2 & Tier-3 cities; monetisation via microtransactions and brand deals.
7. **Challenges:** Digital divide, algorithmic bias, stereotyping, commodification of culture risk distorting authentic representation.

Manosphere

Recent Context -:

UN Women has flagged the growing "manosphere" online misogynistic communities spreading anti-feminist rhetoric as a global threat to gender equality, with rising influence among young men worldwide.

About :

1. **Definition:** Manosphere = online communities promoting aggressive masculinity, misogyny, and the belief that feminism harms men's rights.
2. **Growth Factors:** Internet expansion (954M users in India, 2024), algorithmic promotion, lifestyle "coaches", rising conservatism, anonymity.
3. **Core Narratives:** Equates male worth with dominance, wealth, physical appearance, and emotional control; promotes slogans like AWALT ("All women are like that").
4. **Impacts:** Increases misogyny, normalises violence, links to radicalisation, worsens

men's mental health, and reverses gender equality progress.

5. **Notable Example:** Gamergate harassment campaign targeting female gamers.
6. **Global Mechanisms:** Beijing Declaration (1995), UN Women research, UNFPA's "Making All Spaces Safe", EU Digital Services Act.
7. **Indian Laws & Initiatives:** Indecent Representation of Women Act (1986), IT Rules (2021), Digital Shakti (NCW), IT Amendment Act (2008), BNS provisions on online harassment.

Women in Armed Forces

Recent Context -:

The National Defence Academy saw its first-ever batch of 17 female cadets graduate, marking a significant milestone in integrating women into India's traditionally male-dominated defence forces.

About -:

1. **Constitutional Backing:** Supports Articles 14, 15, and 16—equality, non-discrimination, and equal public employment opportunity.
2. **Permanent Commission:** Granted to women in 11 arms/services, alongside AMC, ADC, and MNS.
3. **Women as Agniveers:** Same selection/training standards as men under the Agnipath scheme.
4. **Combat & Command Roles:** Women allowed as Army Aviation pilots (since 2021) and posted on warships as Navigation Officers.



5. **Operational Significance:** Enhances talent diversity, improves decision-making, and strengthens humanitarian operations in culturally sensitive areas.

6. **Notable Examples:** Col. Sofia Qureshi and Wing Cdr. Vyomika Singh in Operation Sindoor.
7. **Key Challenges:** Gender bias, inadequate facilities in remote areas, physical standard debates, and work-life balance issues.

Global Tobacco Epidemic 2025

Recent Context -:

WHO's 10th report on the Global Tobacco Epidemic highlights India's progress in tobacco advertising bans, large health warnings, and digital content regulation, but slow adoption of taxation measures.

About -:

1. **MPOWER Measures:** Six strategies—Monitor, Protect, Warn, Offer help, Enforce bans, Raise taxes—launched in 2007.
2. **India's Achievement:** First country to extend tobacco control regulations to digital streaming platforms.
3. **Production Rank:** India is 2nd largest tobacco producer (after China) and exporter (after Brazil).
4. **Major States:** Gujarat (45% production), Andhra Pradesh, UP, Karnataka, West Bengal, Telangana, Bihar.
5. **Key Law:** COTPA, 2003—prohibits smoking in public, bans sales to minors.
6. **WHO FCTC:** India party since 2005; global treaty for tobacco control.
7. **Ban on E-cigarettes:** Prohibition of Electronic Cigarettes Act, 2019

SOURCE-PIB

WHO Report on Social Connection

Recent Context -:

WHO's "From Loneliness to Social Connection" report reveals that 1 in 6 people experience loneliness, with youth and elderly most affected, causing health, mental, and socio-economic challenges globally.

About -:

1. **Definition:** Social connection = positive relationships; disconnection includes loneliness & social isolation.

2. **Loneliness Rate:** 1 in 6 people globally (2014–2023), highest among 13–29 age group.
3. **Elderly Isolation:** 1 in 3 older adults socially isolated (1990–2022).
4. **Teenage Isolation:** About 1 in 4 teenagers socially isolated (2003–2018).
5. **Income Gap:** Loneliness in 24% of low-income vs 11% of high-income countries.
6. **Health Impact:** ~871,000 deaths (2014–2019) linked to loneliness; increases risk of depression, anxiety, dementia.
7. **Socio-Economic Impact:** Leads to poor academic performance and productivity loss.

State of World Population Report 2025

Recent Context -:

UNFPA's 2025 report highlights that the real fertility crisis is about reproductive agency, not population size, urging rights-based policies enabling informed, voluntary family planning worldwide.

About -:

1. **Released by:** United Nations Population Fund (UNFPA).
2. **Title:** *The real fertility crisis: The pursuit of reproductive agency in a changing world.*
3. **Core Argument:** Issue is reproductive agency — not overpopulation/underpopulation.
4. **Definition:** Reproductive agency = ability to make informed, empowered reproductive decisions free from constraints.
5. **Unfulfilled Aspirations:** Includes unintended pregnancies and underachieved pregnancies.
6. **Policy Call:** Shift focus from population control to individual rights and choice.
7. **Goal:** Create stable, rights-based conditions enabling desired family size.

Gender Budgeting Knowledge Hub Portal

Recent Context -:

Union Ministry of Women and Child Development launched the Gender Budgeting Knowledge Hub Portal to centralize resources, tools, and training applications for integrating gender equality in planning and budgeting processes nationwide.

About -:

1. **Launched by:** Ministry of Women and Child Development.
2. **Purpose:** Central repository with policy briefs, best practices, and gender-disaggregated data.
3. **Target Users:** Central/state ministries, departments, and stakeholders.
4. **Feature:** Online portal for training and capacity-building proposals in gender budgeting.
5. **Definition of GB:** Integrates gender equality into government planning/budgeting; analyses gender impact of allocations.
6. **Need:** Promotes gender-sensitive policies, participatory budgeting, and responsive governance.
7. **Legal Linkages:** Supports enforcement of laws like Criminal Law Amendment Act 2013 & Sexual Harassment at Workplace Act 2013.

From Zero-Dose to Zero-Gap: India's Vaccine Revolution

Recent Context -:

India reduced zero-dose children to 0.06% in 2024, received UN IGME recognition and Measles-Rubella Champion Award, marking significant strides in immunization coverage and maternal-child mortality reduction.

About -:

1. **Zero-Dose Reduction:** Decline from 0.11% (2023) to 0.06% (2024) of total population.
2. **Recognition:** UN IGME 2024 exemplar in child health; Measles-Rubella Champion Award (March 2024).
3. **Maternal & Child Mortality:** MMR down 86% since 1990; U5MR fell 78%; NMR down 70%.
4. **Universal Immunization Programme:** 12 vaccine-preventable diseases, 2.9 crore pregnant women & 2.6 crore infants annually.
5. **Key Campaigns:** Mission Indradhanush, Zero Dose Implementation Plan 2024, Measles-Rubella Campaign 2025, Pulse Polio.
6. **Coverage Stats:** DTP-1 at 93%, dropout rate down to 2%; Measles coverage 93%.

7. **Governance Tools:** U-WIN digital tracking, VHNDs, mass media campaigns, multi-tier task forces (STFI, DTFI, BTFI).

Hydraulic System and its Applications

Recent Context: Hydraulic systems remain vital in industries ranging from construction to aviation, enabling the movement of heavy loads with minimal input force by using fluid power.

About

1. **Definition:** Uses incompressible fluid (usually oil) to transmit force and motion.
2. **Principle:** Works on **Pascal's law** — pressure applied to a fluid is transmitted equally in all directions.
3. **Key Formula:** Pressure (P) = Force (F) / Area (A); SI unit: Pascal (Pa) = N/m².
4. **Force Multiplication:** Small input force can generate large output force by increasing contact area at constant pressure.
5. **Common Fluids:** Mineral oil or synthetic hydraulic fluids due to lubrication and non-compressibility.
6. **Applications:** Cranes, excavators, brakes, clutches, landing gears, industrial presses, harvesters.
7. **Advantages:** High power-to-weight ratio, smooth operation, precise control, good heat dissipation.

QUESTIONS TO PRACTICE

1. Under which Article of the Constitution does the President summon each House of Parliament?

- A. Article 74(1)
- B. Article 85(1)
- C. Article 93(2)
- D. Article 110(1)

Answer: B

2. Consider the following statements about the summoning of Parliament:

1. The maximum gap between two sessions of Parliament cannot exceed six months.
2. The President summons Parliament solely at his discretion.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer: A

3. With reference to the Census of India, consider the following statements:

1. The Office of the Registrar General and Census Commissioner functions under the Ministry of Home Affairs.
2. The Census Act, 1948 provides a legal basis for conducting the decennial Census.
3. The first synchronous Census in India was conducted in 1872 under Lord Mayo.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

4. With reference to the Delimitation in India, consider the following statements:

1. The Delimitation Commission is established by the President under Article 170 of the Constitution.

2. The 42nd Constitutional Amendment froze the allocation of seats and constituency boundaries based on the 1971 Census.
3. The orders of the Delimitation Commission are binding and cannot be challenged in court.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: B

5. With reference to the constitutional amendments during and after the Emergency of 1975–77, consider the following statements:

1. The 38th Amendment made the President's satisfaction in declaring Emergency immune from judicial review.
2. The 42nd Amendment gave primacy to Directive Principles of State Policy over Fundamental Rights.
3. The 44th Amendment ensured that Fundamental Rights under Articles 20 and 21 cannot be suspended even during an Emergency.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: D

6. With reference to Zonal Councils in India, consider the following statements:

1. They are statutory bodies established under the States Reorganisation Act, 1956.
2. The Union Home Minister is the common Chairman of all Zonal Councils.
3. Their recommendations are binding on the States concerned.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

7. With reference to the PM-WANI scheme, consider the following statements:

1. It was launched in 2020 by the Department of Telecommunications to expand public Wi-Fi access.
2. Public Data Offices (PDOs) under the scheme are required to obtain a licence from TRAI.
3. The Central Registry of the scheme is managed by the Centre for Development of Telematics (C-DoT).

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 1 and 3 only
- C. 2 and 3 only
- D. 1, 2 and 3

Answer: B

8. With reference to Foreign Portfolio Investment (FPI) in India, consider the following statements:

1. FPIs invest primarily in financial assets such as shares, bonds, and mutual funds.
2. Registration of FPIs in India is regulated by the Securities and Exchange Board of India (SEBI).
3. FPI investment is considered more stable and long-term than Foreign Direct Investment (FDI).

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

9. With reference to the term *Reverse Flipping* recently seen in the news, consider the following statements:

1. It refers to the process of foreign-domiciled start-ups shifting their legal base back to India.
2. It can be structured through mechanisms such as inbound mergers or share swaps.
3. It primarily aims to access foreign capital markets and avoid Indian regulations.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

10. With reference to the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0, consider the following statements:

1. It focuses exclusively on water supply and sewerage management in statutory towns.
2. Public–Private Partnership (PPP) is mandatory in all cities covered under the scheme.
3. It introduces components such as Pey Jal Survekshan and Behaviour Change Communication.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 1 and 3 only
- C. 2 and 3 only
- D. 1, 2 and 3

Answer: B

11. With reference to the Kisan Credit Card (KCC) scheme, consider the following statements:

1. It was introduced in 1998 and later expanded to cover animal husbandry, dairying, and fisheries.
2. Only land-owning cultivators are eligible for the scheme.
3. The scheme provides credit for agricultural inputs, post-harvest operations, and allied activities.
4. The Kisan Rin Portal has been launched to improve transparency in loan management.

Which of the statements given above are correct?

- A. 1, 2 and 3 only
- B. 1, 3 and 4 only
- C. 2 and 4 only
- D. 1, 2, 3 and 4

Answer: B

12. With reference to India and the Shanghai Cooperation Organization (SCO), consider the following statements:

1. India became a full member of the SCO in 2017 along with Pakistan.
2. The SCO was originally founded in 2001 by China, Russia, and four Central Asian countries.
3. Decisions in SCO are taken by a majority vote of member states.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

13. With reference to the 51st G7 Summit held in 2025, consider the following statements:

1. It was hosted by Canada at Kananaskis, Alberta, and held in June 2025.
2. India, though not a G7 member, attended as an outreach country for the 12th time.
3. The European Commission President participated in the summit for the first time.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: D

14. With reference to *Operation Sindhu* recently in the news, consider the following statements:

1. It was launched by India to evacuate its nationals from Iran.
2. The evacuation route primarily passed through Armenia due to geographical feasibility and bilateral ties.
3. The operation was carried out in response to escalating tensions involving Israel and the United States.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: D

15. With reference to the *West Bank* in the context of the Israel–Palestine conflict, consider the following statements:

1. It is a landlocked territory bordering Israel and Jordan.
2. The Jordan River forms its eastern boundary.
3. Jerusalem is internationally recognized as part of the West Bank under United Nations resolutions.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

16. With reference to the *Netzarim Corridor* recently seen in the news, consider the following statements:

1. It is a militarized corridor established by Israel inside the Gaza Strip during the 2023–2025 conflict.
2. It effectively divides northern Gaza from southern Gaza, allowing Israel to control movement within the territory.
3. The corridor is located along the eastern border between Gaza and Egypt.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

17. With reference to the *India–Middle East–Europe Economic Corridor (IMEC)*, consider the following statements:

1. It was launched during the G20 Summit in New Delhi in 2023 under the Partnership for Global Infrastructure and Investment (PGII).
2. It seeks to provide a multi-modal connectivity route linking India with the Middle East and Europe, reducing dependence on the Suez Canal.

3. The IMEC project is jointly promoted by India, the European Union, and the United States, with no participation from Middle Eastern countries.

Which of the statements given above is/are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2 and 3

Answer: A

18. Consider the following pairs:

1. **Hodeidah Port** – Western Yemen, Red Sea coast, major entry point for humanitarian aid.
2. **International Association of Marine Aids to Navigation (IALA)** – Became an intergovernmental organization in 2021, HQ in France.
3. **India and IALA** – Hosting the 3rd General Assembly in Mumbai in 2025.

How many of the above pairs are correctly matched?

- A. Only one
B. Only two
C. All three
D. None

Answer: C

19. With reference to **Similipal Tiger Reserve (STR)**, consider the following statements:

1. It is located in Odisha and is part of a UNESCO Biosphere Reserve.
2. It is the only tiger reserve in India known for the presence of melanistic tigers.
3. It represents a unique blend of biodiversity from the Western Ghats, Eastern Ghats, and the Himalayas.

Which of the statements given above is/are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2 and 3

Answer: D

20. With reference to the *Integrated Biodiversity Assessment Tool (IBAT)*, consider the following statements:

1. It was launched in 2008 as a global data platform for biodiversity assessment.
2. It provides datasets such as the World Database on Protected Areas (WDPA), Key Biodiversity Areas (KBAs), and the IUCN Red List.
3. It is jointly managed by a coalition of global organizations to support conservation, corporate, and policy decision-making.

Which of the statements given above is/are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2 and 3

Answer: D

21. With reference to the **Kappatagudda Wildlife Sanctuary**, consider the following statements:

1. It is located in Karnataka and forms part of the northern stretch of the Western Ghats.
2. The sanctuary is characterized by dry deciduous forests, grasslands, and riverine ecosystems.
3. The Ghataprabha River flows through the sanctuary.
4. It has recently been declared an Eco-Sensitive Zone.

Which of the statements given above are correct?

- A. 1, 2 and 3 only
B. 2, 3 and 4 only
C. 1, 2 and 4 only
D. 1, 2, 3 and 4

22. With reference to the **Himalayan Brown Bear (*Ursus arctos isabellinus*)**, consider the following statements:

1. It is listed as *Critically Endangered* on the IUCN Red List and placed in Schedule I of the Wildlife Protection Act, 1972.
2. In India, it is found only in Ladakh and Arunachal Pradesh.
3. It is also included in Appendix I of CITES.

4. It represents one of the most ancient lineages of brown bears and is vital for alpine ecosystem health.

Which of the statements given above are correct?

- A. 1, 2 and 3 only
B. 1, 3 and 4 only
C. 2 and 4 only
D. 1, 2, 3 and 4

Answer: B

23. With reference to the **Bharat Forecast System (BFS)**, recently unveiled in India, consider the following statements:

1. It is one of the world's first indigenously developed high-resolution weather forecasting systems.
2. It has been launched by the Ministry of Earth Sciences.
3. Its primary objective is to provide short-range forecasts only for India's coastal regions.

Which of the statements given above is/are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2 and 3

Answer: A

24. With reference to the **Global Drought Outlook 2025**, consider the following statements:

1. It has been released by the Organisation for Economic Co-operation and Development (OECD).
2. The report highlights that around 40% of global land is facing increasingly frequent and severe droughts.
3. According to WMO (2021), droughts account for more than one-third of all disaster-related deaths globally.

Which of the statements given above are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2 and 3

Answer: D

25. The **Siang Upper Multipurpose Project (SUMP)** is proposed in which Indian state?

- a) Sikkim
b) Arunachal Pradesh
c) Assam
d) Nagaland

ANSWER: B

26. The term "**Manosphere**", recently flagged by **UN Women** as a global threat to gender equality, primarily refers to:

- a) Online platforms promoting men's health and wellness
b) Internet-based communities spreading misogynistic and anti-feminist rhetoric
c) A UN digital campaign for gender equality
d) An international coalition of men's rights NGOs

Answer: b) Internet-based communities spreading misogynistic and anti-feminist rhetoric

27. The climate intervention technique called **Stratospheric Aerosol Injection (SAI)**, recently in news, aims to:

- a) Capture and store carbon dioxide in deep geological formations
b) Release reflective particles into the upper atmosphere to reduce global warming
c) Increase ocean alkalinity to absorb excess atmospheric CO₂
d) Enhance afforestation by artificial seed dispersal in tropical regions

Answer: b) Release reflective particles into the upper atmosphere to reduce global warming

28. The recently commissioned **INS Aruna** is significant because it is:

- a) India's first nuclear-powered submarine
b) The first indigenously built aircraft carrier under Aatmanirbhar Bharat
c) India's first Anti-Submarine Warfare Shallow Water Craft (ASW-SWC)
d) The first long-range missile destroyer of the Indian Navy

Answer: c) India's first Anti-Submarine Warfare Shallow Water Craft (ASW-SWC)

29. With reference to **gene-editing in animals in India**, consider the following statements:

1. The recently developed **gene-edited sheep** in Kashmir used CRISPR-Cas9 technology targeting the *myostatin* gene to enhance muscle growth.
2. Unlike transgenic modification, this technique did not involve insertion of foreign DNA.
3. India's first attempt at livestock gene-editing was the creation of a gene-edited sheep embryo by NDRI.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Answer: a) 1 and 2 only

30. With reference to **Simhastha Kumbh Mela**, consider the following statements:

1. It is held every 12 years in **Nashik and Ujjain**, coinciding with Jupiter's entry into **Simha Rashi (Leo)**.
2. It is recognized by **UNESCO as part of the Intangible Cultural Heritage of Humanity**.
3. It is the only Kumbh Mela associated with an astrological configuration of Jupiter.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Answer: a) 1 and 2 only

31. With reference to the **Padmanabhaswamy Temple**, consider the following statements:

1. It is one of the **108 Divya Desams** dedicated to Lord Vishnu.
2. It was originally built in the **8th century** and later renovated by King Marthanda Varma.
3. The temple architecture represents the **Nagara style** of temple building.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Answer: a) 1 and 2 only

32. With reference to **Sikkim's integration with India**, consider the following statements:

1. Sikkim became the **22nd state of India** in 1975 after a referendum.
2. The **36th Constitutional Amendment Act, 1975** facilitated its full statehood.
3. Before integration, Sikkim was a **protectorate of India** under the 1950 treaty.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Answer: d) 1, 2 and 3

33. With reference to the **Birch Glacier** recently in news, consider the following statements:

1. It is located in the **Swiss Alps**.
2. The glacier's recent advance was likely triggered by **rockfall accumulation**.
3. Birch Glacier is part of the **Himalayan cryosphere system**.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Answer: a) 1 and 2 only

34. With reference to **Pokkali Paddy**, recently in news, consider the following statements:

1. It is a **salt-tolerant rice variety** traditionally cultivated in coastal Kerala.
2. The system integrates **paddy cultivation with fish farming** in the same fields.
3. **Vyttila-11** is a recently developed **high-yielding Pokkali variety**.

4. Pokkali fields are recognized as a form of **Globally Important Agricultural Heritage System (GIAHS)**.

Which of the statements given above is/are correct?

- a) 1, 2 and 3 only
b) 2 and 4 only
c) 1, 3 and 4 only
d) 1, 2, 3 and 4

ANSWER - A

35.. With reference to **Exercise Khaan Quest**, consider the following statements:

1. It was originally launched as a **bilateral initiative between the United States and Mongolia**.
2. The exercise is primarily aimed at preparing armed forces for **UN peacekeeping operations under Chapter VII of the UN Charter**.
3. India has been a **regular participant**, along with the US, Mongolia, and other nations.
4. It is conducted **biennially** in Ulaanbaatar, Mongolia.

Which of the statements given above is/are correct?

- a) 1, 2 and 3 only
b) 2 and 4 only
c) 1 and 3 only
d) 1, 2, 3 and 4

ANSWER-A

36. With reference to the **Amrit Bharat Station Scheme (ABSS)**, consider the following statements:

1. The scheme was launched by the Ministry of Railways in **December 2022** to redevelop over 1,300 stations across India.
2. It aims to integrate **modern amenities with regional architectural styles**, reflecting local culture and heritage.
3. The scheme is aligned with the **Accessible India Campaign (Sugamya Bharat Abhiyan)** to make stations inclusive for differently-abled passengers.
4. It is implemented as a **public-private partnership (PPP) scheme**, with all

redevelopment funded exclusively by private developers.

Which of the statements given above is/are correct?

- a) 1, 2 and 3 only
b) 2 and 4 only
c) 1 and 3 only
d) 1, 2, 3 and 4

ANSWER-A

37. With reference to the recent development of **CRISPR-dCas9 molecular tool** by Indian scientists, consider the following statements:

1. The technology allows plants to **activate stress-response genes only during adverse conditions**, such as heat or pathogen attack.
2. It improves plant resilience while maintaining **energy efficiency** under normal conditions.
3. Unlike conventional CRISPR-Cas9, the **dCas9 variant does not cut DNA** but regulates gene expression.
4. The tool was developed by the **National Botanical Research Institute (NBRI), Lucknow** under the Ministry of Agriculture.

Which of the statements given above is/are correct?

- a) 1, 2 and 3 only
b) 2 and 4 only
c) 1 and 3 only
d) 1, 2, 3 and 4

ANSWER - A

38. **With reference to the Greater Flamingo (Phoenicopterus roseus), recently in news, consider the following statements:**

1. It is listed as Vulnerable under the IUCN Red List of Threatened Species.
2. Its breeding habitat in India is restricted to the Great Rann of Kachchh, often referred to as "Flamingo City."
3. It is a highly philopatric species, but disperses widely outside the breeding season.
4. The recently notified Greater Flamingo Sanctuary in Tamil Nadu protects a critical stopover along the Central Asian Flyway.

Which of the statements given above is/are correct?

- a) 1, 2 and 3 only
- b) 2, 3 and 4 only
- c) 1 and 4 only
- d) 1, 2, 3 and 4

Answer: b) 2, 3 and 4 only

39. With reference to the Gaza Humanitarian Foundation (GHF), recently in news, consider the following statements:

1. It was established in 2025 as an American-based initiative to deliver humanitarian aid in Gaza.
2. The foundation is supported by Israel and the United States.
3. Its mandate includes facilitating relief supply distribution amid the ongoing Gaza crisis.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

Answer: d) 1, 2 and 3

40. With reference to the Giant African Snail, recently in news, consider the following statements:

1. It is listed by the IUCN as one of the world's worst invasive species.
2. It was introduced to India from East Africa in the 19th century.
3. It is hermaphroditic and capable of surviving long periods through hibernation and aestivation.
4. It poses both agricultural and public health risks, including the potential to cause Eosinophilic meningitis.

Which of the statements given above is/are correct?

- a) 1, 2 and 3 only
- b) 2 and 4 only
- c) 1, 3 and 4 only
- d) 1, 2, 3 and 4

Answer: d) 1, 2, 3 and 4

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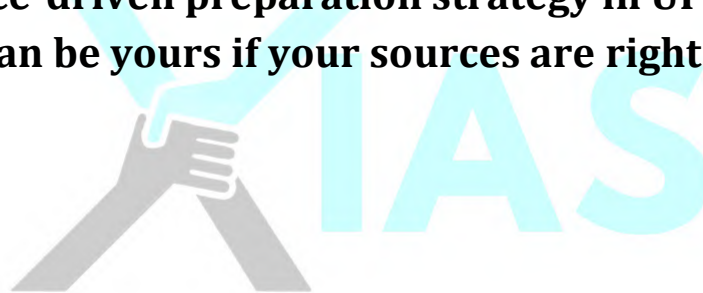
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14. Who among the following rulers in ancient India had assumed the titles 'Mattavilasa', 'Vichitrachitta' and 'Dunabhara'?

(a) Mahendravarmam I
(b) Simhavishnu
(c) Narasimhavarmam I
(d) Simhavarmam

Mahendravarmam I was a follower of Jainism in the early part of his career. He was converted to Saivism by the influence of the Saiva saint, Thirunavukarasar alias Appar. He built a Siva temple at Tiruvadi. He assumed a number of titles like Gunabhara, Sivayasantha, Chettakan (builder of temples) Chitrakarapuli, Vichitrachitta and Mattavilasa.

filed from Tamralipti (port@BoBengal) and Amaravati to Burma, and Indonesia. The ports of south India sent ships to Tenasserim, Trang, the Malacca, and Java.

ancient capital of Thailand was named after Ayodhya performed various Vedic sacrifices, including the *ashvamedha*.

later group of Pallava rulers, Mahendra-varman I (600-630) was. He was a contemporary of Thanesar and curiously enough was also a dramatist and poet of some being the author of a play *Mattavilasa-prahasana* (The Delight of the ...). It was during his reign that some of the finest rock-cut Pallava temples, including the famous temples at Mahabalipuram. Mahendra-varman began Jainism but was converted to Shaivism by the saint Appar. Mahendra-varman's wife was Pulakeshin II.

varman swept right into the capital of Badami and his occupation of the city claim to the title of *Vatapikonda*, 'the Conqueror of Vatapi'.

varman's play *Mattavilasa* was well-known and frequently performed by the actors of

XIAS LEVEL-1 BTS Class Notes X lecture


BTS LEVEL-2

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13. The irrigation device called 'Araghatta' was

(a) a water bag made of leather pulled over a pulley
(b) a large wheel with earthen pots tied to the outer ends of its spokes
(c) a larger earthen pot driven by bullocks
(d) a large water bucket pulled up by rope directly by hand

Whether the Persian wheel was in use in early medieval Rajasthan is debated, and hinges on the interpretation of the term *araghatta*. The key issue is whether the reference is to the Persian wheel or to the *noria*. The *noria* is a wheel which has pots or buckets attached to its rim without a chain for carrying the pots, or a gear mechanism to ensure continuous flow of water. It could only be used to draw water from close to the surface or from a river.



Explained in details in BTS class (LEVEL-2)

The Persian wheel, on the other hand, had gears and a chain to carry the pots and was associated with a well. *araghatta* seems to have been different from an ordinary well (*dhimada*) or a step well (*vapi*). **UPSC PYQ.**

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6. Consider the following statements :

I. India has joined the Minerals Security Partnership as a member.
II. India is a resource-rich country in all the 30 critical minerals that it has identified.
III. The Parliament in 2024 has amended the Mines and Minerals (Development and Regulation) Act, 1957 empowering the Central Government to exclusively auction mining lease and composite license for certain critical minerals.

Which of the statements given above are correct?
(a) I and II only (b) II and III only
(c) I and III only (d) I, II and III

MINERALS SECURITY PARTNERSHIP FINANCE NETWORK

Recent Update: India joined the US-led Minerals Security Partnership (MSP) Finance Network to ensure sustainable critical mineral supply chains.

About:

- Global Collaboration: Joint financing body for critical mineral projects worldwide.
- Objectives: Strengthen Indo-Pacific and European cooperation for sustainable supply chains.
- Critical Minerals: Includes lithium, cobalt, nickel, and rare earth elements crucial for modern technologies.

XIAS CURRENT X-Press Magazine

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9. Consider the following statements :

Statement I : Circular economy reduces the emissions of greenhouse gases.
Statement II : Circular economy reduces the use of raw materials as inputs.
Statement III : Circular economy reduces wastage in the production process.

Which one of the following is correct in respect of the above statements?
(a) Both Statement II and Statement III are correct and both of them explain Statement I
(b) Both Statement II and Statement III are correct but only one of them explains Statement I
(c) Only one of the Statements II and III is correct and that explains Statement I
(d) Neither Statement II nor Statement III is correct

XIAS Current X-press Magazine

VOLUNTARY VEHICLE MODERNIZATION PROGRAM

Recent Update: Union Ministry of Road Transport and Highways launched the **Vehicle Scrapping Policy** to promote a circular economy in the automotive sector.

About:

- Circular Economy: Aims to reduce raw material consumption and encourage recycling.
- Scrappage Certificate: Provided to owners of unfit vehicles to avail discounts on new purchases.
- Incentives: Discounts of up to 3% for commercial vehicles and 1.5% for passenger vehicles on ex-showroom prices.

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83. Consider the following space missions :

I. Axiom-4
II. SpaDeX
III. Gaganyaan

How many of the space missions given above encourage and support micro-gravity research?
(a) Only one (b) Only two
(c) All the three (d) None

SPADEX MISSION

Recent Update: India's SpaDeX mission will demonstrate spacecraft docking technology using PSLV-C59 on December 30.

About SpaDeX Mission:

- What it is: A technology demonstrator for spacecraft docking developed by ISRO.
- Objectives:
 - Primary: Demonstrate rendezvous, docking, and undocking.
 - Secondary: Power transfer between docked spacecraft.
- Technologies:
 - Docking system: Low-impact androgynous.

GAGANYAN MISSION

Recent Update: ISRO has selected Gaganyaan astronauts for training for the International Space Station (ISS) on the Axiom-4 mission, scheduled for October 2024. The mission will be a collaboration with NASA and Axiom Space, utilizing SpaceX's Dragon spacecraft.

About:

- Mission Details: The astronauts will undergo training in the US before the mission.
- Collaboration: India's space program cooperates with NASA and Axiom Space.
- Gaganyaan: India's first human space mission is expected post-2025, after successful uncrewed missions.

AXIOM MISSION 4 (AX-4)

Recent Update: Shubhanshu Shukla and Prasanth Balakrishnan Nair Selected for Axiom-4 mission.

About:

- AX-4: Fourth private astronaut mission to the International Space Station (ISS).
- Duration: 14 days.
- Launch Provider: SpaceX.

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48. With reference to **monoclonal antibodies**, often mentioned in news, consider the following statements :

- I. They are man-made proteins.
- II. They stimulate immunological function due to their ability to bind to specific antigens.
- III. They are used in treating viral infections like that of Nipah virus.

Which of the statements given above are correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

MONOCLONAL ANTIBODIES

Recent Update: Monoclonal antibodies (mAbs) continue to be widely used in diagnostics, treatments, and cell analysis, offering targeted therapies for diseases like cancer and autoimmune disorders.

About:

- Monoclonal antibodies (mAbs) are lab-made proteins designed to mimic natural antibodies.
- Antibodies are part of the immune system, targeting and destroying foreign materials (antigens).
- Key applications include:
 1. Diagnostics (e.g., ELISA),
 2. Treating diseases such as cancer, infections, and autoimmune disorders,
 3. Cell analysis in blood/tissue using fluorescent tags.

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24. Consider the following statements about **turmeric during the year 2022-23** :

- I. India is the largest producer and exporter of turmeric in the world.
- II. More than 30 varieties of turmeric are grown in India.
- III. Maharashtra, Telangana, Karnataka and Tamil Nadu are major turmeric producing States in India.

Which of the statements given above are correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

NATIONAL TURMERIC BOARD ESTABLISHED

Recent Update: The National Turmeric Board has been launched to support turmeric production and export.

About:

- Objectives: Farmer welfare, R&D, export promotion, quality control.
- India's Dominance: Produces 70% of the world's turmeric.
- Key Regions: Maharashtra, Telangana, Meghalaya.

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90. Which organization has enacted the **Nature Restoration Law (NRL)** to tackle climate change and biodiversity loss?

- (a) The European Union
- (b) The World Bank
- (c) The Organization for Economic Cooperation and Development
- (d) The Food and Agriculture Organization

EU NATURE RESTORATION LAW

Recent Update: The EU Nature Restoration Law has come into force.

About:

- First continent-wide legislation for nature restoration.
- Targets to restore 20% of degraded ecosystems by 2030, and 100% by 2050.
- Member States must prepare National Restoration Plans by 1st September 2026.
- Legally binding targets:
 - 30% of terrestrial, coastal, freshwater, and marine ecosystems to be restored by 2030.
 - 25,000 km of rivers to be restored to free-flowing status by 2030.
 - Plant three billion trees by 2030.

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Current
Affairs.

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30. Consider the following statements about the **Rashtriya Gokul Mission** :

- I. It is important for the upliftment of rural poor as majority of low producing indigenous animals are with small and marginal farmers and landless labourers.
- II. It was initiated to promote indigenous cattle and buffalo rearing and conservation in a scientific and holistic manner.

Which of the statements given above is/are correct?

- (a) I only
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

RASHTRIYA GOKUL MISSION

Recent Update: The Ministry of Fisheries, Animal Husbandry & Dairying highlighted the Rashtriya Gokul Mission (RGM) for indigenous bovine conservation and milk production.

About:

- RGM was launched in 2014 as part of the Rashtriya Pashudhan Vikas Yojna with a budget of ₹. 1400 crore (2021-2026).
- Aims to conserve indigenous bovine breeds like Punganur for climate resilience and high-quality milk production.
- Focuses on increasing genetic diversity, supporting Artificial Insemination (AI), and conservation efforts.
- Introduces National Digital Livestock Mission to enhance data management and services.

88. Consider the following statements :

- I. If any question arises as to whether a Member of the House of the People has become subject to disqualification under the 10th Schedule, the President's decision in accordance with the opinion of the Council of Union Ministers shall be final.
- II. There is no mention of the word 'political party' in the Constitution of India.

Which of the statements given above is/are correct?

- (a) I only
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

POWERS OF SPEAKER

- The Speaker, elected by a simple majority, has a key constitutional role, including overseeing the House, casting votes, and dealing with member disqualification.
- The Speaker has vast powers in conducting the House, deciding on questions, expunging remarks, and ensuring impartiality in procedures.
- The Speaker's casting vote resolves tie votes, typically favoring the government.

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AFFAIRS

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BTS GEOGRAPHY

29. Consider the following statements :

- Without the atmosphere, temperature would be well below freezing point everywhere on the Earth's surface.
- Heat absorbed and trapped by the atmosphere maintains our planet's average temperature.
- Atmosphere's gases, like carbon dioxide, are particularly good at absorbing and trapping radiation.

Which of the statements given above are correct?

- I and III only
- I and II only
- I, II and III
- II and III only

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84. With reference to India's defence, consider the following pairs :

Aircraft type	Description
I. Dornier-228	: Maritime patrol aircraft
II. IL-76	: Supersonic combat aircraft
III. C-17 Globemaster III	: Military transport aircraft

How many of the pairs given above are correctly matched?

- Only one
- Only two
- All the three
- None

ZORAWAR LIGHT TANK

Recent Update: The DRDO successfully completed the first phase of developmental field trials for the Zorawar Light Tank, designed for high-altitude deployment, especially in Ladakh.

About:

- Tested in desert terrain, met all performance goals.
- Developed by CVRDE and L&T.
- Weights 25 tonnes, highly mobile and versatile.
- Can be transported by C-17 aircraft.
- Integrates technologies like unmanned systems and loitering munition.

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27. Consider the following statements :

Statement I : In January, in the Northern Hemisphere, the isotherms bend equatorward while crossing the landmasses, and poleward while crossing the oceans.

Statement II : In January, the air over the oceans is warmer than that over the landmasses in the Northern Hemisphere.

Which one of the following is correct in respect of the above statements?

- Both Statement I and Statement II are correct and Statement II explains Statement I
- Both Statement I and Statement II are correct but Statement II does not explain Statement I
- Statement I is correct but Statement II is not correct
- Statement I is not correct but Statement II is correct

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20. Consider the following statements in respect of the Non-Cooperation Movement :

- The Congress declared the attainment of 'Swaraj' by all legitimate and peaceful means to be its objective.
- It was to be implemented in stages with civil disobedience and non-payment of taxes for the next stage only if 'Swaraj' did not come within a year and the Government resorted to repression.

Which of the statements given above is/are correct?

- I only
- II only
- Both I and II
- Neither I nor II

September 1920 At a special session in Calcutta the Congress approved a non-cooperation programme till the Punjab and Khilafat issues were removed and swaraj was established. The programme was to include—

- boycott of government schools and colleges;
- boycott of law courts and dispensation of justice through panchayats instead;
- boycott of legislative councils (there were some differences over this as some leaders like C.R. Das were not willing to include a boycott of councils, but bowed to Congress discipline; these leaders boycotted elections held in November 1920 and the majority of the voters too stayed away);
- boycott of foreign cloth and use of khadi instead; also practice of hand-spinning to be done;
- renunciation of government honours and titles, and
- acceptance of non-violence (including resignation from government service, and acceptance of non-violence).

During the Congress the participants were supposed to work for Hindu-Muslim unity and the removal of untouchability, all the time remaining non-violent.

December 1920 At the Nagpur session of the Indian National Congress—

- The programme of non-cooperation was endorsed.
- An important change in the programme was that the Congress decided to have the attainment of self-government through constitutional means as its goal. The Congress decided to have the attainment of swaraj through peaceful and legal means, thus committing itself to a non-violent mass struggle.
- Local level administrative changes were made: a Congress working committee (CWC) of 15 members was set up to lead the Congress from now onwards; provincial congress committees on legislative, local, revenue, education,

Explained in XIAS BTS Modern History classes.

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56. Consider the following statements :

With reference to the Constitution of India, if an area in a State is declared as Scheduled Area under the Fifth Schedule

- the State Government loses its executive power in such area and a local body assumes total administration
- the Union Government can take over the total administration of such area under certain circumstances on the recommendations of the Governor

Which of the statements given above is/are correct?

- I only
- II only
- Both I and II
- Neither I nor II

PEA Act, 1956

Recent Update: A recent study has found that providing political representation and decision-making power to tribal populations through acts like PESA has supported forest conservation in India's Scheduled Areas.

About

The PESA Act, enacted on 24th December 1996, aims to ensure self-governance for people in tribal areas (Scheduled Areas) through traditional village assemblies, or Gram Sabhas. It extends Panchayat provisions to tribal areas in Fifth Schedule states.

Legislation:

- The Act defines Scheduled Areas as those under Article 244(1), which applies to areas and tribes in states other than Assam, Meghalaya, Tripura, and Mizoram.
- Scheduled Areas are those notified by the President as per community list.

10 states have notified Fifth Schedule areas, covering districts in Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, and Telangana.

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55. Which one of the following launched the Nature Solutions Finance Hub for Asia and the Pacific?

- The Asian Development Bank (ADB)
- The Asian Infrastructure Investment Bank (AIIB)
- The New Development Bank (NDB)
- The International Bank for Reconstruction and Development (IBRD)

ASIA-PACIFIC CLIMATE REPORT 2024

Recent Update: The Asian Development Bank (ADB) highlighted alarming economic impacts of climate change on the Asia-Pacific region in the 2024 report.

About:

- Economic Impact:** APAC could face a 17% GDP reduction by 2070 under high emissions scenarios.
- Country-specific Risks:**
 - India: 24.7% GDP decline by 2070.
 - Bangladesh: 30.5% GDP loss.
 - Vietnam: 30.2% reduction.
 - Indonesia: 26.8% decline.
- Long-term Projections:** Potential 41% GDP loss by 2100.

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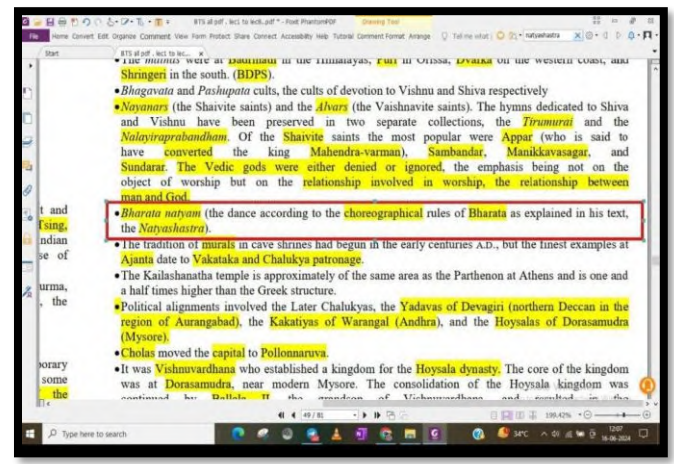
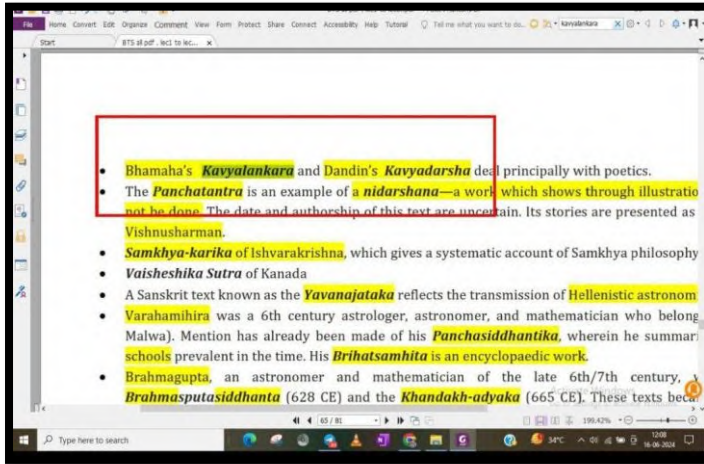
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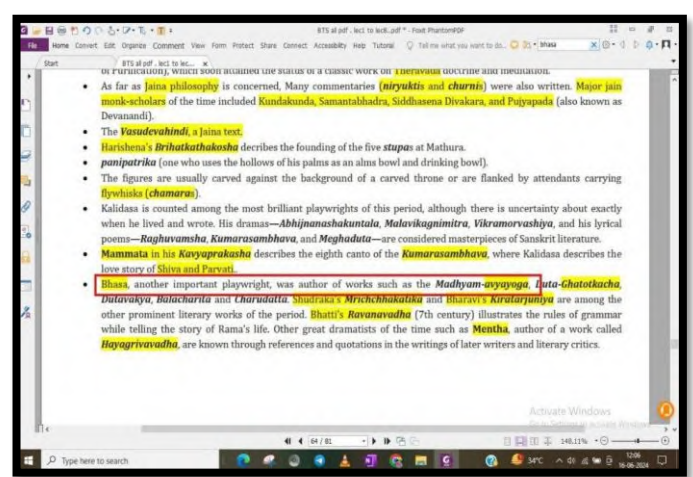
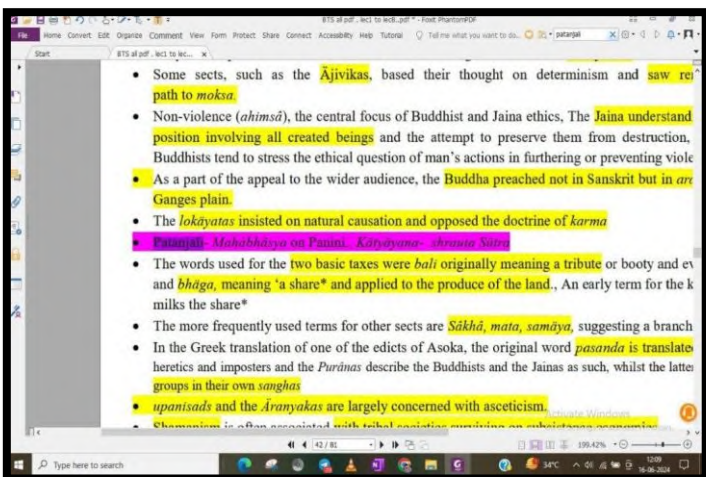
33 Which one of the following is a work attributed to playwright Bhasa?

(a) ~~Kavyalankara~~ Swapanamsha

(b) ~~Natyashastra~~ Playwright

(c) ~~Madhyama-vyayoga~~ Buddhist Tone

(d) ~~Mahabhashya~~ Ratanjali



58. Consider the following statements :

1. There are no parables in Upanishads.
2. Upanishads were composed earlier than the Puranas.

Which of the statements given above is/are correct ?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Advanced : Level-1

- The oldest script in the subcontinent is the Harappan script, but the oldest deciphered script is Brahmi, known from about the 4th century BCE, and the two scripts seem to be quite different.
- The oldest surviving texts in the Indian subcontinent—the Vedas—are in Sanskrit. Sanskrit belongs to the Indo-Iranian branch of the Indo-European family of languages, as do ancient Pali and Prakrit. There were various dialects of Prakrit—e.g. Maharashtri, Shauraseni, and Magadhi. Apabhramsha is a term used for the further development of Prakrit up to the end of the 1st millennium CE. Among the Dravidian languages, Tamil has the oldest literature, followed by Kannada.
- The pre-classical Sanskrit of the Rig Veda is different from the classical Sanskrit of Kalidasa's poetry. The term 'classical Sanskrit' refers to the language whose rules were codified in Panini's Mahabhasya (3rd century BCE). The oldest surviving Prakrit grammar is Vararuchi's Prakitopaniṣad, whose date is debated. The ancient Tamil of the Sangam poems is different from modern Tamil. The Tolappiyam is the oldest surviving Tamil grammar.
- A number of supplementary texts known as Vedāṅga (literally, 'limbs of a Veda') aimed at helping the proper recitation, use, and understanding of the Vedas. These include works on phonetics (śikṣha), metre (chanda), grammar (vyākaraṇa), etymology (nirukta), ritual (kalpa), and astronomy (jyotiṣa). The broad period of composition of Vedāṅga literature is c. 600–200 BCE. Yaska's Nirukta, a work on the etymology of words in the Rig Veda, belongs to the 6th century BCE.
- Rama story—a Jaina version (the Pannachariyam of Vimalasuri, in Prakrit), a Buddhist version (the Dasharatha Jataka in Pali), a 12th century Tamil version by Kamhan (the Iramavataram), and the Ramcharitmanas (16th century) by Tulsiidas, to name only a few.
- Shams Siraj Ali's Tarikh-i-Firuz Shahi.
- The dynastic lists end with the Guptas (4th–6th centuries), indicating that most of the Puranas were compiled at about this time.

Sanghabhuti, an Indian Buddhist monk, who travelled to China at the end of the fourth century AD, was the author of a commentary on :

(a) Prajnaparamita Sutra
(b) Visuddhimagga
(c) Sarvastivada Vinaya
(d) Lalitavistara

- The Nettigandha or Nettipakarana (The Book of Guidance) belongs to the same period and gives a connected account of the teaching of the Buddha.
- The Pali or Sri Lankan chronicles—the Dipavamsa (4th–5th centuries) and the Mahavamsa (5th century)—contain a historical-cum-mythical account of the Buddha's life, the Buddhist councils, the Maurya emperor Ashoka, the kings of Sri Lanka, and the arrival of Buddhism on that island.
- Apart from texts in Pali, there are several Buddhist works in Sanskrit. Sanskrit intensified in the Mahayana schools. Mahavamsa, which has some Mahayana elements, gives a hagiography (sacred biography) of the Buddha and describes the emergence of the monastic order in mixed Sanskrit-Prakrit. The Lalitavistara (1st–2nd centuries), a hagiography of the Buddha associated with the Sarvastivada school but strongly tinged with Mahayana elements.

- The small island of Elephanta, off the coast of Mumbai, was given this name by the Portuguese after a large elephant sculpture once located here. The great sculpture of Mahadeva.
- Among the countless Buddhas and bodhisattvas, a few became the especial focus of monastic and lay worship. These included the heavenly Buddha named Amitayus (infinite radiance). The heavenly bodhisattvas included Maitreya (the kind one). The bodhisattva Avalokiteshvara (the lord who looks down, i.e., with compassion) was supposed to be one of Amitayus's assistants and was considered the epitome of compassion. This aspect is best reflected in the fact that he is supposed to have refused to take the final step into Buddhahood because he wanted to help all beings attain this state. In his fully evolved iconography in later sculpture and painting, Avalokiteshvara wears royal clothes and a crown in which is embedded an image of Amitayus; the lotus bud he holds in one of his hands symbolizes the beauty of his compassion. Sometimes his hands are cupped around a chintamani (wish-granting jewel). Manjusri (sweet glory) was supposed to be an assistant of the heavenly Buddha Shakyamuni and was associated closely with wisdom. His images show him holding a lotus on which there is a copy of the Prajnaparamita Sutra; he also wields a flaming sword, which stands for the wisdom which he cuts through demonic attachments. Vajrapani, the bodhisattva whose symbol was the vajra (thunderbolt), he was considered a protector of snakes and guardian of the elixir of life. The goddess Tara was the feminine personification of compassion. Tradition describes her either as born out of Avalokiteshvara's teardrop (he was shedding tears of despair at the enormous task of liberating all sentient beings) or from a lotus that grew in his tears. Tara was supposed to save people from eight great fears—lions, elephants, fires, serpents, robbers, water, imprisonment, and demons (these can also be interpreted metaphorically).
- Buddhaghosa translated several scriptural commentaries into Pali and wrote a work called the Visuddhimagga (Path of Purification), which soon attained the status of a classic work on Theravada doctrine and meditation.
- As far as Jaina philosophy is concerned, Many commentaries (niryuktis and churnis) were also written. Major Jain monk-scholars of the time included Kundakunda, Samantabhadra, Siddhasena Divakara, and Pujyapada (also known as Devanandi).

With reference to ancient India, Gautama Buddha was generally known by which of the following epithets?

1. Nayaputta
2. Shakyamuni
3. Tathagata

Select the correct answer using the codes given below :

(a) 1 only
(b) 2 and 3 only
(c) 1, 2 and 3
(d) None of the above are epithets of Gautama Buddha

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...the small island of Elephanta, off the coast of Mumbai, was given this name by the Portuguese after a large elephant sculpture once located here. The great sculpture of Mahadeva.

Among the countless Buddhas and bodhisattvas, a few became the especial focus of monastic and lay worship. These included the heavenly Buddha named Amitayus (infinite radiance). The heavenly bodhisattvas included Maitreya (the kind one). The bodhisattva Avalokiteshvara (the lord who looks down, i.e., with compassion) was supposed to be one of Amitayus's assistants and was considered the epitome of compassion. This aspect is best reflected in the fact that he is supposed to have refused to take the final step into Buddhahood because he wanted to help all beings attain this state. In his fully evolved iconography in later sculpture and painting, Avalokiteshvara wears royal clothes and a crown in which is embedded an image of Amitayus; the lotus bud he holds in one of his hands symbolizes the beauty of his compassion. Sometimes his hands are cupped around a chintamani (wish-granting jewel). Manjusri (sweet glory) was supposed to be an assistant of the heavenly Buddha Shakyamuni and was associated closely with wisdom. His images show him holding a lotus on which there is a copy of the Prajnaparamita Sutra; he also wields a flaming sword, which stands for the wisdom which he cuts through demonic attachments. Vajrapani, the bodhisattva whose symbol was the vajra (thunderbolt), he was considered a protector of snakes and guardian of the elixir of life. The goddess Tara was the feminine personification of compassion. Tradition describes her either as born out of Avalokiteshvara's teardrop (he was shedding tears of despair at the enormous task of liberating all sentient beings) or from a lotus that grew in his tears. Tara was supposed to save people from eight great fears—lions, elephants, fires, serpents, robbers, water, imprisonment, and demons (these can also be interpreted metaphorically).

Buddhaghosa translated several scriptural commentaries into Pali and wrote a work called the Visuddhimagga (Path of Purification), which soon attained the status of a classic work on Theravada doctrine and meditation.

As far as Jaina philosophy is concerned, Many commentaries (niryuktis and churnis) were also written. Major Jain monk-scholars of the time included Kundakunda, Samantabhadra, Siddhasena Divakara, and Pujyapada (also known as Devanandi).

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