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Current Affairs
Workbook

May 2025

Progress Tracking Table

Mains Questions

Ethics Case Studies

MCQs

Quick facts

Comprehensive Summary
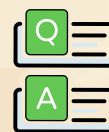
True/ False

Self-Evaluation

Progress Tracking Table

Activity Type	Total Questions	Correct Answers	Attempted	Score/Percentage
MCQ's				
True/False Statements				

Monthly Learning Summary

Top 3 Learnings/Insights

1.
2.
3.

Progress Comparison

Previous Month's Score
Current Month's Score
Areas of Improvement

Reflection Section

Strengths
Areas for Improvement
Goals for Next Month

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18 JULY, 5 PM | 22 JULY, 11 AM | 25 JULY, 2 PM | 30 JULY, 8 AM**

GTB Nagar Metro (Mukherjee Nagar): 10 JULY, 8 AM | 29 JULY, 6 PM

हिन्दी माध्यम 15 जुलाई, 2 PM

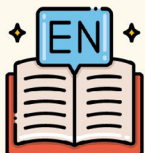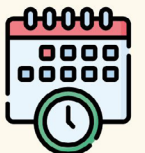| AHMEDABAD: 12 JULY | BENGALURU: 22 JULY | BHOPAL: 27 JUNE | CHANDIARH: 18 JUNE |
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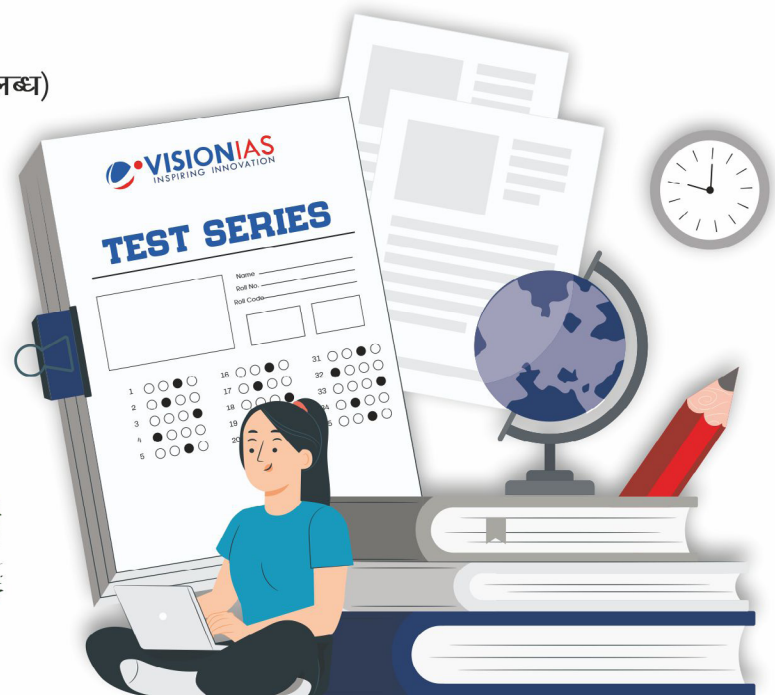
From the Editor's Desk

Dear Readers,

The May edition of the Workbook continues our mission to support your UPSC preparation with structured, analytical, and exam-focused current affairs coverage. By engaging with the Workbook after going through the Monthly Current Affairs Summary, you will strengthen your ability to recall, analyze, and apply complex issues—critical skills for success in the examination.

This month's Workbook offers rich insights into several key themes shaping India and the world. In **Polity**, we explore debates around the **Caste Census** and the significance of **Private Members' Bills**—topics that blend constitutional provisions with contemporary governance challenges. The **International Relations** section unpacks developments such as the **India–UK Free Trade Agreement**, concerns over **CPEC's extension to Afghanistan**, and India's evolving diplomatic posture in global counter-terrorism efforts.

Additionally, we examine pressing economic issues, security issues, social issues, environmental challenges, and advancements in science and technology that influence policymaking.

How the Workbook is Organized?

1. **Summary of the Monthly Magazine:** A concise overview of the month's major insights, key events, and trends. This section lays the foundation for understanding before delving into activities.

2. **Quick Facts Block:** A ready reference of essential facts, figures, and statistics—ideal for rapid revision and recall.

3. **Activities Block:**

MCQ's: Test comprehension of significant topics.

True/False Statements: Verify your understanding of key facts.

Mains practice Questions: Explore and articulate in-depth topics with clarity.

Ethics Case Studies: Apply current events to ethical dilemmas, refining decision making skills.

Answers and Explanation: Includes answers to MCQs and True/False questions for immediate feedback.

4. **Progress tracking table :** Monitor your progress with a dedicated section to record scores and reflect on areas for improvement.

Dedicate yourself to regular practice, embrace the process, and let this workbook be your trusted companion in your preparation. With focus, determination, and the right tools, you will not only master current affairs but also build the confidence to face any challenge.

Warm regards,
Team Current Affairs,
VisionIAS

> "Success is the sum of small efforts, repeated day in and day out."
> — Robert Collier

POLITY AND GOVERNANCE

1.1. Caste Census

Why in the News?

Centre issued notification for census which begins **from 2026 in Ladakh and 2027 across rest of India** which includes caste census.

More on the News

- **First Since Independence:** to collect **caste data (beyond Scheduled Castes and Scheduled Tribes).**
- **Discrepancies in State-Level Caste Surveys:** eg., Bihar, Karnataka etc.

Census in India

- It is a **decennial exercise** that provides **demographic, social, and economic data** relating to all persons in the country.
  - Censuses have been **conducted regularly every ten years since 1881 except** the last census **(2021)** -delayed due to covid19
- **Legal Framework**
  - **Constitutional Provision:** entry 69 of **union list under Seventh Schedule (Article 246)**
  - **Statutory Provisions: Census Act, 1948** and the **Census Rules, 1990** include duties and responsibilities of census officers.
    - The **Registrar General and Census Commissioner** (RG&CC) is **authorized** to design the census proforma.

History of caste census

- **Pre independence** –Regularly from 1881 to 1941, but 1941 data couldn't be published (world war).
- **Post-independence (1951)**- Discontinued caste enumeration **except for SC and ST.**
- **Since 1961 – states** could conduct their own survey of **OBCs**
- **2011**- along census socio economic caste census **(SECC)** was also conducted (data was not published).

Need for Caste Census

- **Constitutional mandate: Article 340.**
- **Data led Policy Making eg OBC's claim** of often getting neglected due to lack of data.
- **Affirmative Action:** Supreme Court has held caste as a '**relevant and sole criterion** for defining a backward class, and have demanded caste data.
  - **Demands** of OBC reservation (eg Marathas (Maharashtra), Jats (Haryana) etc.) can be ascertained.
- **Sub-categorization** of OBCs to ensure equitable distribution of benefits.
- **Comprehensive National Database** for **data led good governance.**

Issues associated with Caste Census

- **Data accuracy & reporting:** Self reported caste and untrained officials cause errors, duplicates, misspellings—**e.g., 2011 SECC** had huge inaccuracies
- **Classification:** Varying Centre/state lists cause inconsistencies **(e.g. Jats in Haryana vs UP).**
- **Political sensitivity:** Recognition prompts demands from others too **(e.g. Gujjar ST request)**.
- **Identity politics:** Data can fuel divisions.
- **Privacy:** eg data misuse

Way Forward

- ➽ **Consultative Process:** The Office of the Registrar General of India and the Census Commissioner must consult with academics, caste groups, political groupings and the public to devise a method of caste enumeration accurately.
- ➽ **Caste Directory:** A national directory of castes to standardize list across states.
- ➽ **Training** of officials and use of tech (AI ,Big data)

1.2. Private Members' Bill

Why in the News?

As per PRS Legislative Research report, the space for private members' bill has declined in both the Houses of the Parliament in recent years.

About private members' bill (PMB)?

- ➽ Any bill initiated and drafted by Member of Parliament **who is not a minister** (private member).
- ➽ **One month of notice** is to be given to the presiding officer of the house before its introduction. If selected then
  - ➡ **Lok Sabha** allots **last two-and-a-half hours every Friday** for discussion.
  - ➡ **Rajya Sabha** allots **two and a half hours** on **every alternate Friday.**
  - ➡ The **first such bill** passed was the Muslim wakfs bill,1952 (introduced by Syed Mohammed Ahmad Kasmi.)

Significance of PMB

- ➽ **Policy Innovation:** MPs can propose novel ideas .**E.g., Right to Disconnect** Bill 2019-employees can disengage from work-related communication beyond working hours.
- ➽ **Reform Potential E.g., The Rights of Transgender Persons Bill, 2014.**
- ➽ **Expression beyond Party Line:** frees the MP from whip **(10th schedule).**
- ➽ **Checks and Balances:** holds govt accountable.

Why are PMBs in Decline?

- ➽ **Disruptions: eg in 17th Lok sabha and Rajya sabha** only 2 out of 729 and 14 out of 705 PMBs were discussed.
- ➽ **Procedural Issues:** limited time allocated for PMBs and **Speaker/Chairman's discretionary power** to admit or reject bills.
- ➽ **Resource Constraints** with Private members
- ➽ **Low Success Perception: E.g., only 14 PMBs have become law** till date and the **last such bill was passed in 1970.**
- ➽ **Lack of Political Will.**

Way Forward

- ➽ **Streamlining Procedures:** Allocate **uninterrupted time** for PMB, **digital tracking** of such bills,
  - ➡ Amendments to the **Rules of Procedure** and Conduct of Business to protect the allotted time
- ➽ **Research Support:** dedicated research unit (like the UK's **Public Bill Committee**) to assist MPs
- ➽ **Institutionalized Mechanism:** introducing a **dedicated review committee** for screening Bills for recommending a priority list and encouraging cross-party support.
  - ➡ **UK's 10-Minute Rule Model** -MPs can introduce short bills to make their case

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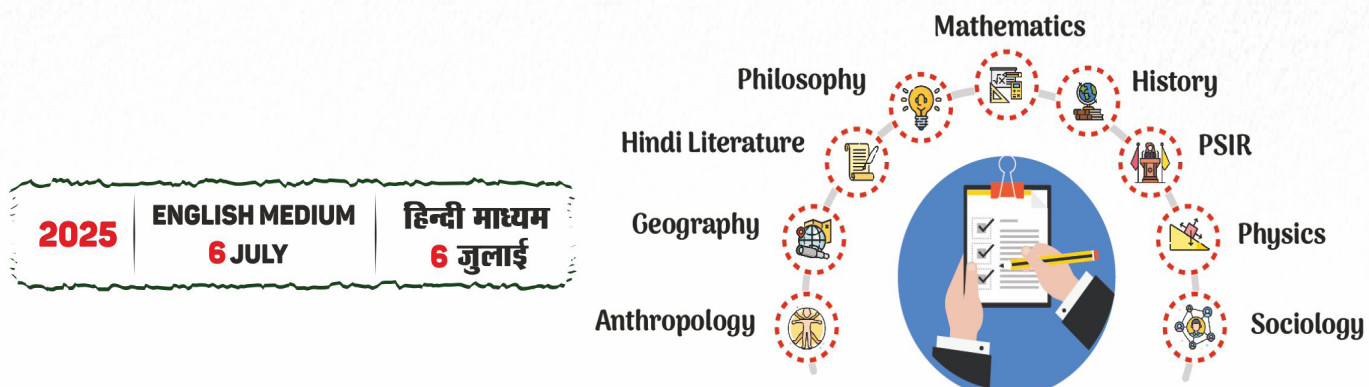
1.3. News in Shorts

1.3.1 Inclusive Digital Access Part Of Article 21: Supreme Court

Amar Jain V Union of India and Ors. judgment held that digital access is a part of the fundamental right to life and liberty.

Key Highlights of Judgment

- **Court issued direction to revise the digital KYC norms:** ensuring facially disfigured or visually impaired persons can access services, under the **Rights of Persons with Disabilities Act, 2016**
- **Invoking the 'principle of substantive equality':** Digital transformation must be both inclusive and equitable.
- **State's obligation: Under Articles 21, 14, 15, and 38** [State to promote Social Justice] to ensure digital infrastructure to all vulnerable populations.

Significance of inclusive digital access: Access essential governmental schemes, reducing rural-urban divide, access to online learning platforms, and financial technologies, inclusion of marginalised in development process, etc.

Other supreme court judgements related to Internet Access	
Sabu Mathew george vs union of india (2017): ordered blocking of prenatal sex determination of ads without restricting access or free speech	**Anuradha bhasin vs union of india(2020):** recognizing internet access as a funramental right under art 19

1.3.2 Power of Courts to Modify Arbitral Awards

SC in the **Gayatri Balasamy v. ISG Novasoft Technologies Limited** held that the power to modify arbitral awards is **limited** and can be exercised under **Arbitration and Conciliation Act, 1996** under the **following circumstances:**

- When the award is severable by **separating the invalid portion from the valid portion.**
  - Doctrine of **omne majus continet in se minus doctrine** (the greater power includes the lesser), i.e. the power to set aside an arbitral award necessarily includes the power to set it aside in part.
- Correct any **clerical, computation or typographical errors.**
- **Modify post-award interest** in some circumstances.
- Under **Article 142 (complete justice)** this power should be in consonance with the principles of the 1996 Act.

Arbitration in India

- **Meaning:** An out-of-court, consensual dispute-resolution process—part of **Alternative Dispute Resolution (alongside mediation, conciliation).**
- **Significance:** Less adversarial, Flexible, Quicker, etc.
- **Legal Framework:** The **Arbitration and Conciliation Act, 1996** modelled as per the **United Nations Commission on International Trade Law (UNCITRAL) Model Law on International Commercial Arbitration, 1985.**
  - **Section 34(1)** of the Act stipulates **'recourse'** to a court only by an application **for setting aside the award.**
  - **Section 37** states **instances** where an appeal may lie against orders.

1.3.3 Rohingyas and Provisions Related to Refugees and Deportation

The Supreme Court (SC), while hearing petitions related to **Rohingya refugees,** highlighted that they **cannot claim reliefs based on the UNHCR cards.**

- **UNHCR (UN High Commissioner for Refugees)** is a global organization to protect refugees, forcibly displaced communities, and stateless people.

Other provisions related to refugee	
India follows the **non refoulment** principle (**Bangkok principles,1966**)	**Mohammad salimullah vs union of india (2021)** right not to be deported is ancillary or concomitant to **the right to reside or settle under art 19**

Statutory Provisions in India related to Refugees and Deportation

- India **has no dedicated refugee legislation (**so decision is based on case to case basis based on policy of bilateralism**)** and is **not a signatory to the 1951 Refugee Convention** or its **1967 Protocol.**
- Refugees are treated as **"foreigners" or "aliens,**
- **Foreigners Act, 1946** vest the **Central Government** powers to **detain and deport illegal** foreign nationals
- **Passport (Entry into India) Act, 1920: Centre** may direct the **removal** of any foreigner **without passport & visa.**
  - According to **Articles 258(1) and 239(1)** of the Constitution, **States/UTs** are also entrusted with these powers.

1.3.4 Rights of Pedestrians

The **Supreme Court (SC)** passed an **order affirming the constitutional rights of pedestrians.**

About the SC Order

➲ SC stated that the **Right to have unobstructed and disabled-friendly footpaths** is guaranteed under **Article 21.**

➲ **The SC issued directions:**

➔ **All public roads** must have **footpaths** and must be **accessible** and usable by **persons with disabilities.**

➔ **Removal of encroachments** from footpaths is **mandatory.**

➔ **States/UTs** must evolve **policies** to ensure the availability and maintenance of footpaths and footways.

1.3.5 50th Anniversary of Sikkim's Statehood

About Sikkim Statehood

➲ Sikkim was made a **full-fledged State of the Union of India** under the **Constitution (36th Amendment) Act, 1975.**

➔ Earlier, **Constitution (35th Amendment) Act, 1974** granted Sikkim the status of an **"Associate State" of the Union of India** under **Article 2A.**

◇ **Article 2A was repealed** by the **Constitution (36th Amendment) Act, 1975.**

➲ It became **22nd State of India.**

➲ **Article 371F** grants certain **special provisions** to Sikkim.

INTERNATIONAL RELATIONS

2.1. India-UK Free Trade Agreement (FTA)

Why in the News?

India and the **UK** concluded an **FTA** after **three years** of formal negotiations.

More on the News

- ➲ FTA will be implemented after **legal finalisation,** covering **27 chapters** (e.g., **digital trade, environment)**.
- ➲ Both agreed to a **Double Contributions Convention (DCC)** – a **Social Security Agreement.**
  - ➜ DCC ensures employees and employers pay **social security** in only **one country** (for assignments up to **3 years).**
- ➲ **India-UK trade relation:** USD 60 billion of bilateral trade, projected to double by 2030

Key Highlights of the India-UK FTA

- ➲ **Zero-duty Market Access: ~99% of Indian exports** to UK get **zero-duty** access.
  - ➜ India to reduce tariffs on **90% of British products,** with **85% becoming tariff-free** within 10 years.
- ➲ **Mobility for Indian Professionals:** Covers **Service Suppliers, Business Visitors, Investors, Intra-Corporate Transferees** (with dependents), and **Independent Professionals** (e.g., yoga instructors).
- ➲ **Government Procurement Access:** UK firms can bid for **goods, services, and construction** across central and state-owned entities.

About Free Trade Agreement (FTA)

- ➲ **FTAs** are deals between countries/blocs to reduce or eliminate **tariff** and **non-tariff barriers** on substantial trade.
- ➲ Covers **goods, services,** and areas like **intellectual property rights (IPs).**
  - ➜ **Early Harvest Scheme** is a **precursor** to FTAs.
- ➲ FTAs are an **exception** to WTO's **Most Favoured Nation** principle.
- ➲ **Status:** India signed **13 FTAs** in the last five years (e.g., **Mauritius, UAE, Australia)** – SBI Report.

India's Experience with FTA's

- ➲ **Trade Imbalance: Exports** to FTA partners rose **31%,** while **imports** surged **82%** (2017–2022).
- ➲ **Low Utilisation:** FTA use in India is just **~25%** as compared to **70–80%** in developed countries.
- ➲ **Non-Tariff Barriers:** From 2020–24, over **26,000 trade/investment restrictions** were globally imposed (Global Trade Alert).
- ➲ **Unequal Competition:** E.g., **South Korea** & **ASEAN** outperformed India in key sectors like **electronics.**
- ➲ **Other Issues:** Include **certification complexity** and **rules of origin.**

Note: Trade balance alone doesn't reflect FTA value. There are other potential gains such as **tech transfer, value chains, investment flows,** and **diversified access** to goods/services.

How the India-UK FTA can help shape Future FTAs?

- ⮑ **Swift Negotiations:** Unlike prolonged **India–EU talks** (since 2007), this FTA shows faster progress is possible.
- ⮑ **Safeguard of Sensitive Sectors: Sensitive agri-products** (e.g., dairy) and **industrial goods** (e.g., plastics) kept on **exclusion list,** protecting India's interests.
- ⮑ **Gradual Removal of Duties: Phased tariff cuts** give **domestic industries** time to adapt to competition.
- ⮑ **Emphasis on Mutual Benefits:** E.g., **UK car makers** get **reduced tariffs** (100% - 10%) under a **quota** system.

Conclusion

The **India–UK FTA** acts as a **strategic template** for future deals with developed nations—balancing **growth, modern trade issues,** and **domestic safeguards.**

2.2. China Pakistan Economic Corridor (CPEC)

Why in the News?

China, Pakistan, and **Afghanistan** agreed to extend **CPEC** to **Afghanistan.**

What is CPEC?

- ⮑ **Flagship project** of China's **Belt and Road Initiative (BRI),** launched in **2015.**
- ⮑ Connects the **Silk Road Economic Belt** with the **Maritime Silk Road.**
- ⮑ **Focus: Energy** and **Infrastructure** projects.
- ⮑ Includes **3000 km** of **roads, railways, pipelines** linking **Gwadar Port** (Pakistan) to **Kashgar** (Xinjiang, China).

> ### Belt and Road Initiative (BRI)
>
> - ⮑ Proposed by **China** in **2013** to enhance **connectivity** and **cooperation** across continents.
> - ⮑ Also known as **One Belt One Road (OBOR):**
>   - ➜ **Silk Road Economic Belt (the "Belt"):** Links **China** to **Central & South Asia,** then to **Europe.**
>   - ➜ **New Maritime Silk Road (the "Road"):** Connects **China** to **Southeast Asia, Gulf, East/North Africa,** and **Europe.**

India's Concerns over CPEC Extension to Afghanistan

- ⮑ **Geo-strategic:** CPEC in Afghanistan limits the strategic utility of India's initiatives like **Chabahar Port** and **International North-South Transport Corridor (INSTC).**
  - ➜ **Strategic Encirclement:** China deepens presence via **String of Pearls** (e.g., **Hambantota (Sri Lanka), Gwadar (Pakistan), and Chittagong (Bangladesh))**; Afghanistan extension adds pressure on India's **western front.**
- ⮑ **China–Pakistan–Afghanistan Axis:** Strengthens **Pakistan's hold** over Afghanistan and sidelines India's **soft power and development influence (Zaranj-Delaram highway,** etc**.).**
- ⮑ **Security Risks:** Taliban regime, backed by **Chinese funds** and **Pakistani intelligence,** may support terror groups like **Jaish-e-Mohammed** and **Lashkar-e-Taiba.**
- ⮑ **Economic Concerns: Afghanistan's lithium and rare earths** may fall under Chinese control via CPEC, disadvantaging India.

China - Pakistan Economic corridor map showing Kashgar, China, Gilgit-Baltistan, Islamabad, Lahore, Dera Ismail khan, Gwadar, Karachi, Afghanistan, Iran, India, Arabian Sea. Legend: Original proposed route; Proposed alternative route; KP Khyber Pakhtunkhwa; FATA Federally Administred Tibal Areas.

Steps taken by India to counter CPEC

- ⮑ **Chabahar Port:** Offers direct access to **Afghanistan** and **Central Asia,** bypassing **Gwadar** and **CPEC.**
- ⮑ **INSTC:** India–Iran–Russia-led **multi-modal route** connecting **Indian Ocean** to **Europe** via **Caspian Sea.**
- ⮑ **India-Middle East-Europe Economic Corridor (IMEC) (2023):** Connects **India, Middle East,** and **Europe** via **UAE, Saudi Arabia, Jordan, Israel,** and **EU.**
- ⮑ **Quadrilateral Security Dialogue (QUAD):** Forum of **India, US, Japan, Australia** to ensure **free Indo-Pacific** and counter **China.**

Conclusion

India must advance **Chabahar,** engage with **Afghans,** and push for **transparent, inclusive,** and **sustainable** regional infrastructure to safeguard national interests.
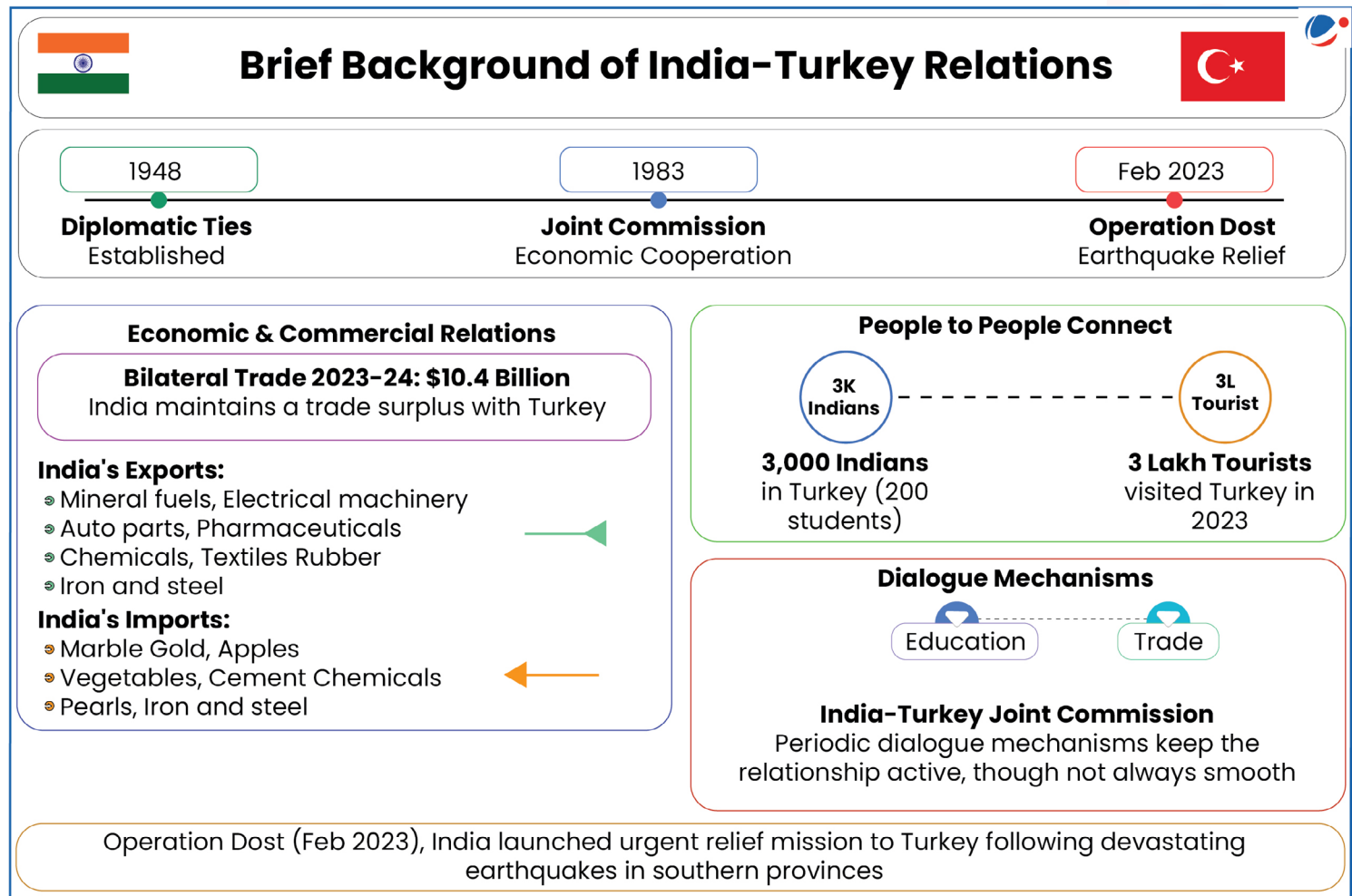
2.3. India–Turkey Relations

Why in the News?

India–Turkey ties deteriorated after Turkey criticized India's counter-terror strikes in Pakistan post-Pahalgam attack.

More on the News

➲ **Turkey condemned Operation Sindoor,** calling it "provocative" and warned of escalation.
→ **Turkish-made Songar drones,** used by Pakistan, were neutralized by Indian air defense.
➲ **India revoked security clearance** of Turkish firm Celebi Aviation at 9 Indian airports.

Brief Background of India-Turkey Relations

1948	1983	Feb 2023
Diplomatic Ties Established	**Joint Commission** Economic Cooperation	**Operation Dost** Earthquake Relief

Economic & Commercial Relations

Bilateral Trade 2023-24: $10.4 Billion
India maintains a trade surplus with Turkey

India's Exports:
➢ Mineral fuels, Electrical machinery
➢ Auto parts, Pharmaceuticals
➢ Chemicals, Textiles Rubber
➢ Iron and steel

India's Imports:
➢ Marble Gold, Apples
➢ Vegetables, Cement Chemicals
➢ Pearls, Iron and steel

People to People Connect

3K Indians — **3L Tourist**

3,000 Indians in Turkey (200 students)

3 Lakh Tourists visited Turkey in 2023

Dialogue Mechanisms

Education　Trade

India-Turkey Joint Commission
Periodic dialogue mechanisms keep the relationship active, though not always smooth

Operation Dost (Feb 2023), India launched urgent relief mission to Turkey following devastating earthquakes in southern provinces

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Why Turkey Matters for India?

➲ **Strategic Location:** Turkey bridges Europe and Asia; part of **International North-South Transport Corridor (INSTC)**, etc.
➲ **Regional Influence:** Turkey's clout in the **Middle East and Black Sea** offers India strategic leverage.
➲ **Global Forums:** Both are **G20 members;** Turkey supports **India's bid for permanent UNSC seat**, etc.

Contemporary Challenges in India–Turkey Relations

➲ **Military Support to Pakistan:** Turkey is **Pakistan's 2nd largest arms supplier,** aiding drones, missiles, and F-16 upgrades.
➲ **Kashmir Meddling:** Turkey **opposes Article 370 abrogation** and backs Pakistan's stand at the **UN.**
➲ **Narrative Destabilization:** Turkey-linked platforms **amplify anti-India content** on Kashmir and internal issues.
➲ **Turkey–Azerbaijan–Pakistan Axis:** Joint condemnation of **Operation Sindoor** reflects growing trilateral coordination.
→ Turkey and Pakistan also share historical ties through the **Baghdad Pact, Central Treaty Organization (CENTO),** and **RCD (Regional Cooperation for Development).**
➲ **Islamist Rhetoric:** Erdogan's **Pan-Islamist stance** fuels criticism of India's domestic affairs, straining ties.

Conclusion

India–Turkey ties remain **strained** due to **Turkey's pro-Pakistan tilt.** India must **counter narrative threats, leverage multilateral forums,** and **deepen ties** with Turkey's **regional rivals** to maintain **strategic balance** and explore **pragmatic re-engagement** where possible.

2.4. Concerns raised by India over IMF's Lending to Pakistan

Why in the News?

The **International Monetary Fund (IMF)** completed the first review of **Pakistan's Extended Fund Facility (EFF)** program.

More on the News

- **IMF disbursed $1 billion (Special Drawing Rights (SDR)** 760 million) under the **Extended Fund Facility (EFF).**
  - ➜ EFF supports countries with **serious payment imbalances** due to **structural issues, slow growth**, or **weak balance-of-payments.**
- Also approved **$1.4 billion** (SDR 1 billion) under the **Resilience and Sustainability Facility (RSF).**
- **India abstained** from voting and **criticized the approval.**

Key Lending Instruments of IMF Funds		
General Resources Account (GRA)	**Poverty Reduction and Growth Trust (PRGT)**	**Resilience and Sustainability Trust (RST)**
• **Lending Type:** Non-concessional (market-based interest rates) via **Financial Transactions Plan.** • **Aim:** Address **balance of payments (BoP)** problems. • **Lending Facilities:** Stand-by Arrangement (SBA); **Extended Fund Facility (EFF);** Rapid Financing Instrument (RFI); Flexible Credit Line (FCL); etc.	• **Lending Type: Concessional and interest-free** for **Low-Income Countries (LICs).** • **Aim:** Resolve BoP crises in LICs with **longer duration support.** • **Lending Facilities:** Rapid Credit Facility (RCF); Standby Credit Facility (SCF) and Extended Credit Facility (ECF).	• **Lending Type: Affordable long-term financing.** • **Aim:** Help **low- and vulnerable middle-income countries** build **resilience to climate change** and **pandemic shocks.** • **Lending Facilities:** Resilience and Sustainability Facility (RSF)

Concerns raised by India over IMF's Lending

- **Misuse of Funds:** Risk of use in **military** or **cross-border terrorism.**
- **Role of military:** Strong **military involvement** may reverse reforms.
- **Undermining Global Values:** Lending may **legitimize terror-linked regimes,** risking **donor credibility.**
- **Prolonged Use of IMF Resources:** Pakistan received IMF aid in **28 of 35 years,** increasing **debt burden.**
- **Undermines effectiveness of the IMF program:** Repeated support questions **IMF's monitoring** and **Pakistan's commitment.**

Other Key Challenges/Concerns associated with IMF

- **Ineffective voting process:** No option to **formally vote against loans** (e.g., India abstained).
- **Undemocratic Governance Structure:** Voting power favours **US, EU, Japan** (e.g., Greece bailout rules changed in 2010).
- **Ineffective Evaluation Process:** Independent Evaluation Office (IEO) set up by IMF lacks **true independence,** funded and governed by IMF.
- **Varied success:** IMF conditionalities may results into reduced social spending due to austerity-driven fiscal consolidation.

Conclusion

The **IMF remains essential** to global economic stability but is hindered by **imbalanced governance, opaque lending,** and **inequitable conditionalities.** To stay **relevant,** it must ensure **quota reforms, fair voting rights,** and **transparent oversight** that reflect the voice of **emerging economies.**

2.5. United Nations Peacekeeping
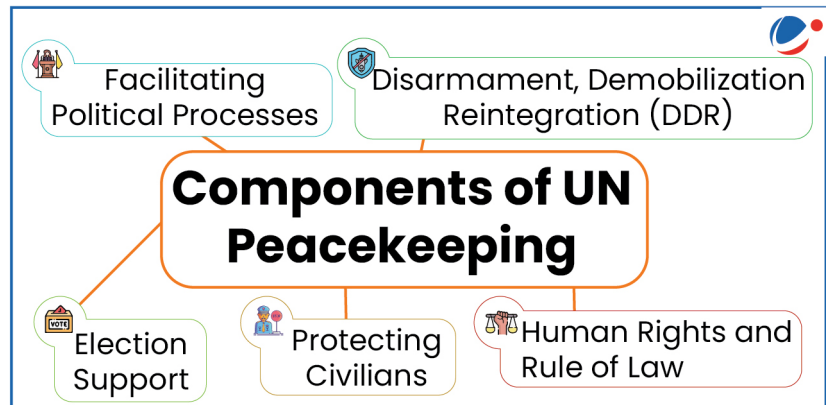
Why in the News?

The **United Nations Peacekeeping Ministerial 2025** concluded in **Berlin, Germany.**

About UN Peacekeeping Ministerial 2025

- **Hosted by Germany** as a high-level forum on the future of peacekeeping.
- At the ministerial, India pledged one **Quick Reaction Force (QRF) Company,** one **women-led Police Unit,** a **SWAT Police Unit and peacekeeping training,** etc.

About United Nations Peacekeeping

- **Origin:** Began in **1948** with **UNTSO** in the Middle East.
- **Mandate:** Given by the **UN Security Council** through resolutions.
    - **Funding:** Approved by the **UN General Assembly.**
- **Core Principles:**
    - **Consent** of parties
    - **Impartiality**
    - **Non-use of force,** except in self-defense or defense of the mandate
- **Governance:** Managed by the **Department of Peace Operations (DPO)** since 1992
- **Recognition:** Received the N**obel Peace Prize** in **1988**
- **Doctrines**
    - **Capstone Doctrine:** Defines **principles, objectives,** and **training standards** for peacekeepers.
    - **Responsibility to Protect (R2P)** – 2005: A political pledge to prevent **mass atrocities** like **genocide** and **ethnic cleansing.**

Components of UN Peacekeeping

- Facilitating Political Processes
- Disarmament, Demobilization Reintegration (DDR)
- Election Support
- Protecting Civilians
- Human Rights and Rule of Law

India's Key Contribution to UN Peacekeeping

- **Highest Troops Contribution:** Over **2.9 lakh peacekeepers** in **50+ missions.**
    - Currently **4th largest** after Nepal, Rwanda, Bangladesh.
- **Capacity Building:** Hosts Centre for **United Nations Peacekeeping (CUNPK)** in New Delhi for **peacekeeping training.**
- **Promoting Gender Parity: First country** to deploy **all-women Formed Police Unit** (2007, Liberia).

Key Challenges Faced by Peacekeeping

- **Targeting Peacekeepers:** E.g., **UNIFIL** personnel injured in the **Israel–Lebanon conflict.**
- **Opposition from Host Countries:** E.g., **Sudan** opposed **African Union-United Nations Hybrid Operation in Darfur (UNAMID)**
- **Credibility Issues:** E.g., UN failed to prevent Rwanda and Srebrenica genocides in the 1990s.
- **Changing Nature of Conflicts:** Rise in **intra-state conflicts, terrorist tactics,** and spread of **modern weapons.**
- **Other:** Movement restrictions, delayed political solutions, ill-equipped troops, and **limited say** of major troop contributors.

Conclusion

UN peacekeeping needs reforms per the **Brahimi Report (2000)** and **UN High-Level Independent Panel on Peace Operations (HIPPO) (2015)**—including **early action, adaptation to modern threats, gender and rights focus,** and ensuring **trained, accountable, and well-equipped forces.**

2.6. News in Shorts

2.6.1. New Development Bank (NDB)

Algeria became the **9th member** of NDB.

About NDB (Hq: Shanghai, China)

- **Established: 2015** by **BRICS – Brazil, Russia, India, China, South Africa**
- **Purpose:** Mobilize funds for **infrastructure and sustainable development** in **EMDCs**
- **Members:** Brazil, Russia, India, China, South Africa, **Bangladesh, UAE, Egypt, Algeria**
  - ➡ **Prospective Member: Uruguay** (awaiting formal accession)
  - ➡ **Membership** is **open** for all **UN members** (borrowing & non-borrowing)
- **Capital: $100 billion** authorized; **$50 billion** equally shared by 5 founding members
- **Voting Power:** Founding members must hold **at least 55%**

Other Prominent Regional Financial Institutions

🏛 Institution	📋 Purpose	🌟 Members
Asian Development Bank (HQ: Manila, Philippines) 1966	Social and economic development, regional integration **across Asia and the Pacific.**	69 (50 from Asia-Pacific, 19 from outside the region), **including India.**
Asian Infrastructure Investment Bank (HQ: Beijing, China) 2016	Finances sustainable infrastructure and development projects, **primarily in Asia** with global reach.	110 approved (100 Full + 10 Prospective) members, **(India, a full member).**

Significance of Regional Financial Institutions

- **Sustainable Development:** India has **20+ projects** worth **$4.87 billion** via NDB (2024)
- **Bridging Gaps:** Enables **long-term infrastructure finance** and boosts **private investment**
- **Regional Integration:** Strengthens **South-South cooperation** (e.g., India's role in NDB & AIIB)

2.6.2. IAEA

The **Defence Minister of India** urged **IAEA** oversight of **Pakistan's nuclear arsenal.**

About International Atomic Energy Agency (IAEA)

- **Established:** 1957 as an autonomous international organisation within the UN
- **Members:** 180 (including **India**)
- **General Conference:** Annual meeting of all member states in Vienna

- **Recognition: Nobel Peace Prize (2005)** for promoting peaceful nuclear use and global safety
- **IAEA and the Non-Proliferation Treaty (NPT)**
  - ➡ IAEA is not a party to the **NPT,** but has key **verification**

The role of IAEA

🔴 **Global Focal Point** Serves as the global focal point for nuclear cooperation	➕ **Peaceful Applications** Assists Member States in using nuclear science for peaceful purposes
✳ **Safety Standards** Develops nuclear safety standards & promotes maintenance of high safety levels	✅ **Verification & Compliance** Verifies that States comply with commitments to use nuclear facilities only for peaceful purposes

responsibilities under it
  - ➡ All **non-nuclear-weapon states** under NPT must sign a **Comprehensive Safeguards Agreement (CSA)** with IAEA to verify compliance
- **HQ:** Vienna, Austria

About NPT

- A legally binding treaty to **prevent the spread of nuclear weapons and technology**
- **Came into force** in 1970; **extended indefinitely** in 1995
- **191 member countries,** including all five recognised nuclear-weapon states (China, France, Russia, UK, US)
  - ➡ **India, Israel, and Pakistan** have never joined; **North Korea withdrew in 2003**

Other Treaties to Prevent Nuclear Proliferation

- **Partial Test Ban Treaty (1963):** Bans tests in the atmosphere, outer space, and underwater **(India signed and ratified)**
- **Comprehensive Nuclear Test Ban Treaty (CTBT, 1996):** Bans all nuclear explosions **(India did not sign)**
- **Treaty on the Prohibition of Nuclear Weapons (TPNW, 2017):** Bans all nuclear weapon activities **(India did not sign)**

2.6.3. UN Security Council's (UNSC) 1267 Sanctions Committee

Indian officials briefed the **UNSC 1267 Sanctions Committee's monitoring team** on the activities of **The Resistance Front (TRF).**

About 1267 Sanctions Committee

- Also known as the **ISIS and Al-Qaeda Sanctions Committee.**
- **Established in 1999** to combat terrorism linked to **ISIS, Al-Qaeda, and associated groups.**
- Composed of **all permanent and non-permanent members** of the UN Security Council.
- Oversees sanctions, **travel bans, asset freezes,** and **arms embargoes** under **UNSC Resolutions 1267 (1999), 1989 (2011), and 2253 (2015).**

2.6.4. Asian Productivity Organization

India has formally assumed the **Chairmanship of the Asian Productivity Organization (APO)** for 2025–26.

About Asian Productivity Organization (APO)

- **Established** in **1961** by **8 founding members; India** is one of them.
- **Objective:** Enhance **productivity** in the **Asia-Pacific** region through **mutual cooperation.**
- **Members:** Includes **21 economies** from the Asia-Pacific region.
- **Key Roles:**
  - → Conducts **research** on emerging member needs.
  - → Promotes **bilateral and multilateral alliances.**
  - → Surveys **economic and development policies and performance** of members.

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Performance and Progress Analysis

ECONOMICS

3.1. Northeast as 'Frontrunner of Growth'

Why in the News?

PM inaugurates **Rising North East Summit 2025** by **DoNER.**

More on the News

- ➲ Highlighting Northeast's strategic importance, PM outlined **EAST vision (Empower, Act, Strengthen, Transform).**
- ➲ Termed region's eight States as **'Ashta Lakshmis'.**
- ➲ Identified bio-economy, bamboo, tea, petroleum, sports, and eco-tourism as **key emerging sectors** of region.

Key highlights of focus sectors of NER in the Rising North East Summit 2025

Sectors	Highlights
Textiles, Handlooms & Handicrafts	➲ Contributes to over 53% looms, 78.5% traditional garments, and featuring unique GI-tags.
Renewable Energy	➲ NER holds 60 GW hydropower potential, 40% national.
IT & ITES	➲ Rapid IT growth with parks, SEZs, and innovation hubs.
Infrastructure and Logistics	➲ Bridges **(Dhola-Sadiya, Bogibeel),** airports, and J**ogighopa IWT terminal-linked logistics park.**
Tourism and Hospitality	➲ NER boasts UNESCO sites (Kaziranga, Manas) and Swadesh Darshan & SPRASHAD schemes.
Education	➲ High literacy, young population drives innovation and entrepreneurship.
Health	➲ Phytopharmaceutical potential and PPP-led healthcare boost urban medical infrastructure.
Agriculture	➲ Agro-rich region mainly grows organic and high-value crops; 70% are farmers.
Sports	➲ **Indigenous sports** (archery, thang-ta, polo etc). Produces national/international athletes.
	➲ Stadiums: Indira Gandhi Athletic (Assam), Khuman Lampak (Manipur) can become hubs with investment.

Potential of NER to become 'frontrunner of growth'

- ➲ **Geo-strategic:** Gateway to **Southeast Asia,** vital to India's **Act East Policy.**
- ➲ **Energy:** Coal, uranium, oil, natural gas, and hydropower.
- ➲ **Diverse cultural heritage:** Fosters tourism and handicrafts investment.

- **Low-cost manufacturing hub:** Low labour costs.
- **India's green hub:** Rich biodiversity supports ecotourism and **agro-based industries.**

Challenges in North-Eastern Region

- **Poor connectivity:** via **Siliguri Corridor** isolates region, affecting movement and logistics.
- **Insurgency and armed conflicts:** Demands autonomy or tribal rights, **e.g.,** NSCN-IM, Kuki –Meitei clashes.
- **Narco terrorism:** thrives near Golden Triangle, exploiting **porous borders.**
- **Human Rights concerns:** over AFSPA's prolonged enforcement.
- **Environmental vulnerabilities:** Floods, landslides, and earthquakes, notably Brahmaputra floods.

North East States of India

(Map showing North East States of India with China (Tibet), Bhutan, Bangladesh, Myanmar, West Bengal, Sikkim (Gangtok), Arunachal Pradesh (Itanagar), Assam (Dispur), Nagaland (Kohima), Meghalaya (Shillong), Manipur (Imphal), Mizoram (Aizawl), Tripura (Agartala), Bay of Bengal)

Initiatives for Development of NER

India	International
- **NESIDS:** Develops infrastructure in water, power, connectivity, tourism, and social sector. - **PM-DevINE:** Funds developmental projects, based on States' needs. - **MOVCDNER:** Promotes certified organic value chain development. - **Peace and security initiatives:** NLFT and ATTF Peace Agreement 2024, Adivasi Assam Peace Accord, 2022, DNLA Peace agreement 2023, ULFA Peace Accord 2023 etc.	- **Regional connectivity projects:** Kaladan, India-Myanmar-Thailand Trilateral Highway, BBIM, Mekong-Ganga Cooperation. - **Act East Forum** (India and Japan): Boosts NER and Southeast Asia connectivity. - **SASEC:** Fosters regional prosperity among South Asian nations.

Way Forward

- **Diversify access routes:** E.g. Hili–Mahendraganj corridor bypassing Siliguri.
- **Reduce insurgency:** Tripura's **peace** and rehabilitation **(Bru tribals)** offer lessons.
- **Address illegal migration and border security:** With advanced Surveillance, CIBMS.
- **Improving Integration of NER with rest of India: Prevent discrimination and racial attacks** through legal measures, media campaigns, etc. **(Bezbaruah Committee).**

3.2. Revamped Periodic Labour Force Survey (PLFS)

Why in the News?

NSO revamped PLFS from January 2025.

About PLFS

- **Conducted by:** National Statistics Office (NSO)
- **Ministry:** Ministry of Statistics and Programme Implementation (2017)
- **Objectives:**
  - Estimate **employment/ unemployment indicators quarterly** for urban areas (Now including rural also) in '**Current Weekly Status' (CWS).**
  - Estimate **annual** employment/ unemployment in **Usual Status and CWS for rural and urban areas.**
- **Key Terminologies used in PLFS**
  - **Labor Force Participation Rate (LFPR):** Percentage of population working or seeking or available for work.
  - **Worker Population Ratio (WPR):** Percentage of employed persons in population.
  - **Unemployment Rate (UR):** Percentage unemployed among within labour force.

➜ **Activity Status-** Determined by activities during reference period.
➜ **Usual Status:** Activity over last 365 days (principal and subsidiary activity).
➜ **Current Weekly Status (CWS):** Activity during last 7 days.
➜ **Current daily activity status (CDS):** Worked 1 hour or more in a day.

Key changes in PLFS Introduced:

⟳ **Monthly estimates of key labour market indicators:** For rural and urban areas in CWS.
⟳ **Quarterly CWS estimates:** extended to rural areas.
⟳ **Calendar year reporting:** Annual PLFS results from 2025.
⟳ **Enhanced sample size**
⟳ **Improved Geographical Representation:** District made **primary geographical unit (basic stratum). National Sample Survey (NSS) region** elsewhere.
⟳ **Improved social indicators data availability**

Significance of Changes introduced in PLFS

- Enhanced Sample Size
- Industry Decision Support
- Timely updation of India's labour market statistics
- Assist in timely Rural Labour Interventions
- District Level Planning
- Survey Improvements
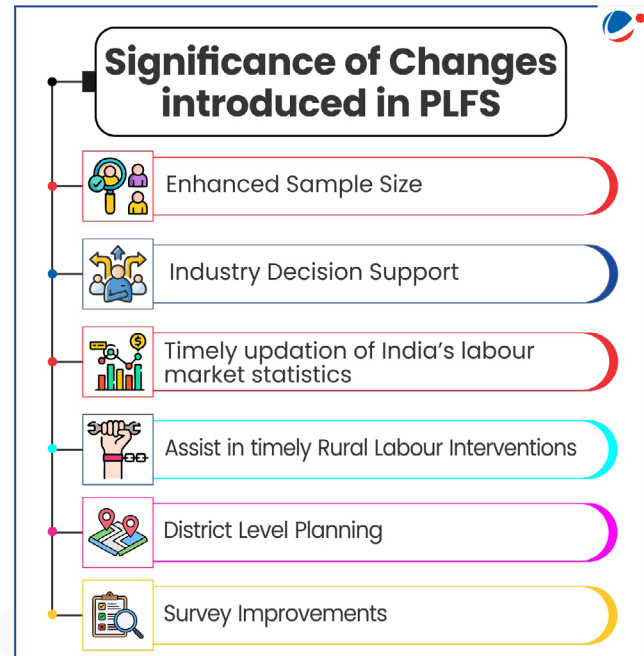
Other methodologies/Reports to compute Employment related indicators in India

⟳ **Employment Market Information Programme:** Provide frequent update on public/ private sectors employment trends at all levels.
  ➜ Implemented under **Employment Exchange Act, 1959.**
⟳ **ILO reports: World Employment and Social Outlook etc.**
⟳ **Census:** Collects data on main/ marginal workers.
⟳ **Labour Bureau:** Attached office of Ministry of Labour & Employment (headquartered Chandigarh). Collects labour statistics through the Annual Survey of Industries (ASI), Rural Labour Inquiry, and Rural Retail Prices for CPI, etc.

Issues with methodologies to compute Employment related indicators in India

⟳ **Inconsistencies in data:** Due to varied sampling, timing, and questions asked.
⟳ **Relaxed criteria:** CWS considers ≥1 hour work/ week as employed, which often undercounts unemployment.
⟳ **Unmatching definition:** Indian employment definition does not meet international standards.
⟳ **Restrictive nature:** QES silent on unemployment data.
⟳ **Inadequate sample size.**
⟳ **Time lag, Poor Quality and Poor Response.**

Way forward

⟳ **Adopt definitions of UN System of National Accounts.**
  ➜ ILO urges India to follow 19th ICLS standards.
⟳ **Use AI** to ensure data quality, data validation and processing.
⟳ Increase frequency of **enterprise surveys** and **Economic Census at regular intervals.**
⟳ **Centralized government data** with uniform methods.
⟳ **Eliminate Surveys Duplication** and **Harmonize Reports.**
⟳ **Data accessibility:** Greater public awareness and engagement with statistical insights by NSS.

3.3. Vizhinjam International Seaport

Why in the News?

PM inaugurated Vizhinjam International Transhipment Deepwater Multipurpose Seaport in Kerala.

About Seaport

⟳ India's **First Deep-Water Container Transshipment Port**.

- **Purpose:** Handles **container, multi-purpose and break-bulk cargo.**
- **Developmental model: Landlord model** with **PPP** on **DBFOT basis.**
- **Advantages**
  - **Strategic Location:** Near key international shipping route connecting Europe, Persian Gulf and Far East.
  - **Naturally Advantaged:** Deep draft supports ultra-large next-gen container ships.
  - **Scalable infrastructure:** To match cargo growth and minimal siltation with capacity for **18,000+ TEU.**

Strategic location of Vizhinjam Port

What is transshipment?

- It involves **transfer of cargo** between vessels during transit to the final POD.
- Transshipment hub integrated via:
  - **Hub-and-spoke:** Links regional feeders with long distance (global) deep-sea lines.
  - **Intersection:** Connects large ships on major routes.
  - **Relay:** Links regional routes with different port calls.

Need to develop India as Transshipment hub

- **High Foreign Dependency:** Nearly **75%** of India's transshipped cargo handled abroad, mainly at Colombo, Singapore and Klang.
- **Trade routes proximity:** Liners prefer **minimum deviation.**
  - **Vizhinjam and Galathea Bay** lie **~6-10 NM** from the Suez route.
- **Revenue Loss:** Indian ports loses **$200-220 Million** of potential revenue each year.
- **Shallow drafts:** Indian ports lack **18-meter draft.**
- **Infrastructure:** Upgrade to global standards with productivity and superstructures.

Challenges in developing India as Transshipment hub

- **High Cost:** Due to vessel related charges, in comparison to global ports.
- **Far distance to international maritime trade route:** Indian ports lie over **5 hours f**rom key routes, Colombo is just **0.5-1 hours** away.
- **No major tax incentive available:** For setting up transshipment **free trade zone.**
- **Land scarcity:** Islands lack **minimum 25 hectares** needed for **Free Trade Zone.**
- **Complex Custom: Time-consuming** clearance processes.

Other Initiatives taken to promote Transshipment in India

- **ICTP, at Galathea Bay:** Offers proximity to Malacca Strait and Singapore.
- **Kochi International Transhipment Terminal:** Handles cargo up to **one million TEUs** annually.
- **Amrit Kaal Vision 2047:** aims for **world-class ports.**
- **Cabotage Law Relaxation:** To allow foreign ships to transport **EXIM** containers.
- **Cabotage: Practice of imposing restrictions** for movement of **domestic cargo by foreign flagged vessels.**

Way Forward

- **Competitive Logistics:** Aim for 15–20% lower costs than Colombo via reduced port charges and service tax waiver.
- **Global Standards:** Government should share dredging costs, as done in the US and Sri Lanka.
- **Mega Ports:** Vadhavan, Paradip, and Deendayal to exceed 300 MTPA capacity.
- **Customs Reform:** Digitize processes; exempt transshipment cargo.
- **Infrastructure:** Shift to landlord model, boost private participation.

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20

3.4. National Road Safety Board

Why in the News?

Supreme Court questions Centre over delay in road safety board.

More on the News

- Section 215B mandates National Road Safety Board.
- MORTH issued constitution notification for the Board in 2021.

About National Road Safety Board (NRSB)

- **Composition:** Chaired by one person with 3–7 members, appointed by the Central Government.
- **Head Office:** Located in the NCR; may have offices across India.
- **Functions:** Promote road safety, innovation, and traffic regulation; advise governments; support Good Samaritans; crash investigations.

Challenges of road safety in India

- **High Fatality Rate:** India had 11% of global road deaths in 2022.
- **Behavioural Issues:** Over-speeding caused 71.2% of deaths; wrong-side driving 5.4%.
- **Road Conditions:** Under 20% of national roads assessed for safety.
- **State-Level Gaps:** Most states lag in 2030 UN road safety goals.
- **Other Issues:** Poor standards, mixed vehicle fleet, bystander apathy, weak public transport.

Impact of Road Accidents

- **Economic:** Crashes cost 3–5% of India's GDP annually (World Bank).
- **Rising Inequality:** 75% of poor households report income loss after crashes.
- **Intangible Costs:** Trauma, loss of breadwinners—80% of victims are under 45.

Initiatives taken for Road safety:
Global

- **Global Plan for the Decade of Action for Road Safety 2021–2030**
  - **By:** **WHO** and **UN Regional Commissions** to guide road safety.
  - **Goal: 50% reduction in road deaths and injuries by 2030.**
- **Brasilia Declaration on Road Safety (2015):** SDG 3.6- half global road traffic deaths by 2030.

In India

- **National Road Safety Policy 2010:** Emphasizes awareness, road safety, database, safe infrastructure.
- **The Motor Vehicles Act of 1988 (MVA 1988)** and **Amendment:**
  - **Good Samaritan (section 134A):** protects helpers from legal liability
- **Cashless Treatment of Road Accident Victims Scheme, 2025**
  - By **MoRTH**
    - **Eligibility:** All road accident victims.
    - **Coverage:** 1.5 Lakhs for 7 days at designated hospitals.
    - **Nodal Agency:** State Road Safety Council.
    - **Payments:** Verified by State Health Agency, paid from Motor Vehicle Accident Fund.
- **Vehicle engineering:** Enhanced standards for Airbags, ABS, Crash test, etc.
- **Road engineering:** Safety embedded in design.
- **Bharat NCAP:** Star rating for vehicle safety.

Measures Required:

- **Improving Governance:** Standardize road assessments, conduct audits; KS Radhakrishnan panel recommended third-party audits.

- **Technology:** Implement ATMS, explore AI solutions like Nagpur's iRASTE.
- **Safe System:** Focus on transport planning, infrastructure, vehicle safety, road use, post-crash response.
- **Emergency Care:** Build trauma and pre-hospital systems.
- **Other:** Promote safe driving, helmets, reducing alcohol/ drug use, etc.

3.5. District Mineral Foundation (DMF)

Why in the News?

Standing Committee reported on DMF fund and PMKKKY implementation.

About District Mineral Foundation (DMF)

- **Enactment**: Created in 2015, via amendment to Mines and Minerals Act, 1957.
- **Concept:** DMF is a non-profit trust for districts affected by mining operations.
- **Objective:** Benefit persons and areas impacted by mining as prescribed by states.
- **Structure:** Two-tier setup with Governing Council (policy) and Managing Committee (execution).
- **Funding of DMF**: Mining leaseholders contribute 10–30% of royalty based on lease date.
  - ➜ Funds used at district level under PMKKKY guidelines.

Mining Jurisdiction in India

- **Constitutional Framework**
  - ➜ **Entry 54 of Union List:** Parliament can regulate mines and mineral development in the public interest.
  - ➜ **Entry 23 of State List:** States can regulate mines and mineral development subject to Union List provisions.
- **Minor Mineral Authority**
  - ➜ **Central Government:** Can notify any mineral as a "minor mineral".
  - ➜ **State Government:** Can make rules for granting concessions for minor minerals within their territory.
- **MMDR (Amendment) Act, 2023**
  - ➜ **Critical and Strategic Minerals:**
    - ◇ Central Government is empowered to exclusively auction mining leases and composite licences.
    - ◇ Applies to minerals listed in Part D of the First Schedule of the MMDR Act.
- **DMF (District Mineral Foundation) Jurisdiction**
  - ➜ **Central Government:** Can direct how DMF funds are composed and used.
  - ➜ **State Government:** Manages implementation and daily operations.
- **Significance and status:**
  - ➜ DMF guided by Constitution Schedules, PESA 1996, FRA 2006.
  - ➜ **645 districts (23 States)** have DMFs.
  - ➜ **Over ₹1-lakh crore** collected
  - ➜ **Top states by DMF funds**: Odisha (29%); Chhattisgarh (14%); Jharkhand (13%)

Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)

- **Launch:** 2015 under MMDR Act, 1957.
- State integrate PMKKKY into DMF rules.
- **Objective:** Sustainable development in mining areas; fund healthcare, education, infrastructure, water, livelihoods.
- **2024 Revisions**
  - ➜ 70% funds for priority sectors; 30% cap on others.
  - ➜ **Livelihood Focus:** Expanded, agriculture added.
  - ➜ **Directly Affected Areas:** 70%
  - ➜ **Endowment Fund:** 10%
  - ➜ **Strengthened Planning:** 5-year based on needs assessment.

Challenges Associated with the District Mineral Foundation (DMF)

- **Governance Issues:** DMFs are dominated by district collectors, with limited mining community representation; only five states include affected people in Governing Councils.
- **Planning & Beneficiary Identification:** No district publishes five-year plan. Gram Sabha engagement is lacking.
- **Fund Utilization:** Only 40% of funds used; major states show low spending. Funds favor infrastructure over human development, contradicting PMKKKY goals.
- **Weak Grievance & Monitoring**: Complaint systems often non-functional; no public data or utilization index for transparency.
- **No Social Audits:** Effectiveness assessments absent.
- **Aspirational Districts Gap**: 106 of 112 ADP districts are DMF districts, yet mining impact mitigation remains unmet.

Reforms

- Ensure DMFs are independent, community-led with at least one-third mining-affected representation.
- Develop participatory five-year plans.
- Enforce 70% fund allocation to critical sectors under PMKKKY.
- **Mandate Social Audits & Financial Reviews** by i**ndependent agencies**
- Support 'Just Transition' with Endowment Funds for post-mine economies.

3.6. News in Shorts

3.6.1. India overtakes Japan to become 4th Largest Economy

Recent IMF World Economic Outlook shows India has surpassed Japan as the 4th largest economy.

Ten Largest Economies (Based on GDP)

Country	GDP
United States	$30.507 Trillion
China	$19.231 Trillion
Germany	4.744 Trillion
India	**$4.187 Trillion**
Japan	$4.186 Trillion
United Kingdom	$3.839 Trillion
France	$3.211 Trillion
Italy	$2.422 Trillion
Canada	$2.225 Trillion
Brazil	$2.125 Trillion

Key drivers for India's Economic Leap:

- **Structural**: Urbanization, rising income, demographic dividend (median age ~29), strong domestic demand (private consumption ~70% GDP).
- **Policy**: GST, IBC, tax cuts, infrastructure pushes (NIP, PM Gati Shakti), Atmanirbhar Bharat, production-linked incentives.
- **Technological**: Digital infrastructure (UPI, JAM), strong IT/software exports.
- **External**: Increased FDI, global supply chain shifts.

Future prospects:

- India aims to be 3rd largest economy in 2.5–3 years with renewable energy growth (500 GW by 2030), global green leadership, and regulatory stability (bank reforms, RBI).

3.6.2. US House Approves 3.5% Outward Remittance Tax

US House Approves 'One, Big, Beautiful Bill' with 3.5% Outward Remittance Tax

- **Effective:** January 1, 2026, a 3.5% excise tax on remittances applies to non-US citizens (e.g., H-1B, F-1, Green Card holders); US citizens exempt.
- **Remittances**: Funds sent from abroad to home countries; totalled $656B in 2023. India received 14.3% of global remittances in 2024.
- **Impact**: May hurt remittance-dependent economies, including India ($32.9B from US), and shift funds to informal channels.

3.6.3. Alternative Investment Funds (AIFs)

RBI Revises Investment Rules for **Alternative Investment Funds (AIFs)**

About AIFs: Privately pooled investment vehicles in India for sophisticated investors, regulated by SEBI under 2012 regulations.

Categories:

- **Category I:** Invest in start-ups, SMEs, infra (e.g., VC, Angel funds)
- **Category II:** No leverage (e.g., PE, Debt funds)
- **Category III:** Use leverage (e.g., Hedge funds, PIPE).

3.6.4. Predatory Pricing

CCI Notifies Cost Regulations, 2025 to Tackle Predatory Pricing

About Predatory Pricing: Selling below cost to reduce competition, defined under Section 4(2) of the Competition Act, 2002.

Impact: Short-term consumer benefit; long-term harm due to reduced choices and monopolistic pricing. Hurts competitors, enabling dominant firms to recover losses later.

3.6.5. Payments Regulatory Board

RBI Notifies Payments Regulatory Board Regulations, 2025

Replaces 2008 regulations under the Payment and Settlement Systems Act, 2007.

About Payments Regulatory Board:

- **Chairperson:** RBI Governor
- **Members:** Deputy Governor, 1 RBI officer, 3 government nominees (4-year fixed term, no re-nomination)
- **Experts** may be invited
- **Meets** twice a year, Quorum: 3
- **Majority decisions**; Chairperson has casting vote.

3.6.6. RBI (Digital Lending) Directions, 2025

Key **Directions to Strengthen Digital lending practices.**

Key Objectives: Enhance borrower protection, ensure data transparency, and promote responsible digital lending.

Key Highlights of the RBI Directions

- **Defines digital lending** as fully digital loan processing.
- **Applies to:** Banks, NBFCs, co-operative banks, and AIFIs.
- Defines **Digital Lending Apps:** via CIMS
- Requires **due diligence on LSPs**
- Ensures clear borrower disclosures on terms, policies, and privacy.
- **Grievance redressal Officer:** Appointed by LSPs to deal with digital lending-related complaints and issues.

Need for RBI Directions on Digital Lending

- **Exorbitant interest rates & hidden charges**: Due to information asymmetry.
- **Unethical recovery practices**: Harassment & coercion by recovery agents.

- **Proliferation of unregulated & fraudulent apps**: Many apps operated without proper oversight, leading to consumer harm.
- **Mis-selling:** Borrowers are not fully aware of loan terms
- **Data privacy breaches:** Sensitive borrower data can be mishandled by third-party service providers.

3.6.7. Opinion Trading Platforms

SEBI cautions against opinion trading platform.

About Opinion trading platforms

- **Concept:** Allow participants to earn money by predicting outcomes of events in sports, etc.
- **Legal Status:** not regulated by SEBI as predictions aren't classified as securities.
- **Economy:** Over **Rs 50,000 crore transactions and 5 crore users.**

3.6.8. India Achieves Highest Ever Exports

India's exports rise to $824.9 billion in 2024–25 despite global headwinds.

Key data

- **Merchandise:** Marginally increased to US$437.4 billion
- **Services Exports:** $387.5B (13.6% growth), led by IT, transport, and financial services.

Factors Driving Export Growth

- **Policy Push**: New Foreign Trade Policy, Trade Facilitation, Districts as Export Hubs Initiatives and MSME support.
- **Diversification of export markets**: Rising demand offsets global slowdowns.
- **Trade Agreements:** New bilateral and multilateral deals, such as **India–UAE CEPA**, opened markets and lowered barriers.
- **Supply Chain Realignment**: India becoming reliable alternative to China-plus-one strategies.

3.6.9. World Bank Land Conference

India named Country Champion at **World Bank Land Conference 2025.**

- Highlighted SVAMITVA (68,000 sq. km surveyed, ₹1.16 trillion land monetized) and Gram Manchitra as tech-driven rural governance models.
- **SVAMITVA:** Uses drones to map rural land for clear ownership.
- **Gram Manchitra: Empowers Panchayats for climate-resilient, data-driven planning.**

Efficient Land Management Systems and Economic Growth

- **Jobs and Growth:** Streamlined access to property, facilitate entrepreneurship and alternate livelihoods.

- **Private Capital:** Collateral access, **boosting private credit and investment opportunities**.
- **Infrastructure Funding:** Generate **stable government revenue.**
- Land and property taxes 0.6% of GDP in low-income countries & 2.2% in industrialized nations.
- **Urban Management**: Help cities plan
- **Food Security**: Can increase agricultural outputs by 4%.

3.6.10. Repairability Index

Committee under **Bharat Khera** submits Repairability Index (RI) framework Report to DoCA.

About RI Framework:

- **OEMs** must **self-declare RI** using scoring criteria.
- **RI** to be displayed at sale points, e-commerce, and via QR codes on packaging.
- **Smartphones and tablets prioritized** initially.
- RI rated on 5 points scale across 6 core parameters: Tools, Disassembly depth, repair information, spare parts availability, fasteners, software updates.

Significance of RI:

- Improved repair accessibility
- Promoting Sustainable Economy: Emphasizes on LiFE
- **Address issue of 'planned obsolescence'**
- **Employment generation**: via third-party repairs.

Right to Repair: Ensures availability of spare parts and repair info; DoCA launched portal in 2022.

3.6.11. World Audio Visual and Entertainment Summit (WAVES), 2025

PM highlights **Creative Economy** at WAVES Summit 2025

- **Creative economy** seen as key to GDP growth, innovation, and inclusivity.
- **WAVES** targets unlocking a $50B market by 2029.
- Indian Institute of Creative Technology (IICT) launched as a **National Centre of Excellence** by I&B Ministry with FICCI and CII.asteners, software updates.

About Creative Economy:

- **Also called 'orange economy'** is an evolving concept based on contribution & potential of creative assets contributing to economic growth and development.
- Covers **Animation, Gaming, Extended Reality, etc.**

India's Creative Economy

- **Contribution: $30 billion to GDP**, **employing 8% of the workforce**.
- **Challenges:** Misinformation, privacy, limited rural digital access, and lack of formal financing, etc.
- **Initiatives:** Creative economy fund, All India Initiative in Creative Economy, National Creators Awards, etc.

3.6.12. Indian Institute of Creative Technology(IICT)

IICT launched by **MoI&B** with **FICCI and CII.**

About IICT:

- National **Centre of Excellence (NcoE)** for **Animation, VFX, Gaming, Comics,etc.**
  - **Extended Reality (XR)** blend physical and digital worlds e.g. **VR, AR & Mixed Reality (MR).**
- Modeled on IITs/IIMs to become a global education hub.

Status of AVGC-XR sector

- **Globally** valued **over $366 billion** in 2021.
- **India: Less than 1%** of the global market. Projected to reach **$26 billion** by 2030 **(Karnataka** leading).

Emerging key growth drivers

- **Growing OTT User base:** Penetration rate of 38.4%.
- **Growth of Smartphone Users**
- **Wider Spectrum of Applications:** In Gaming, EdTech, Architecture etc.
- **Advent of New Technologies:** Investment increasing.
- **5G**
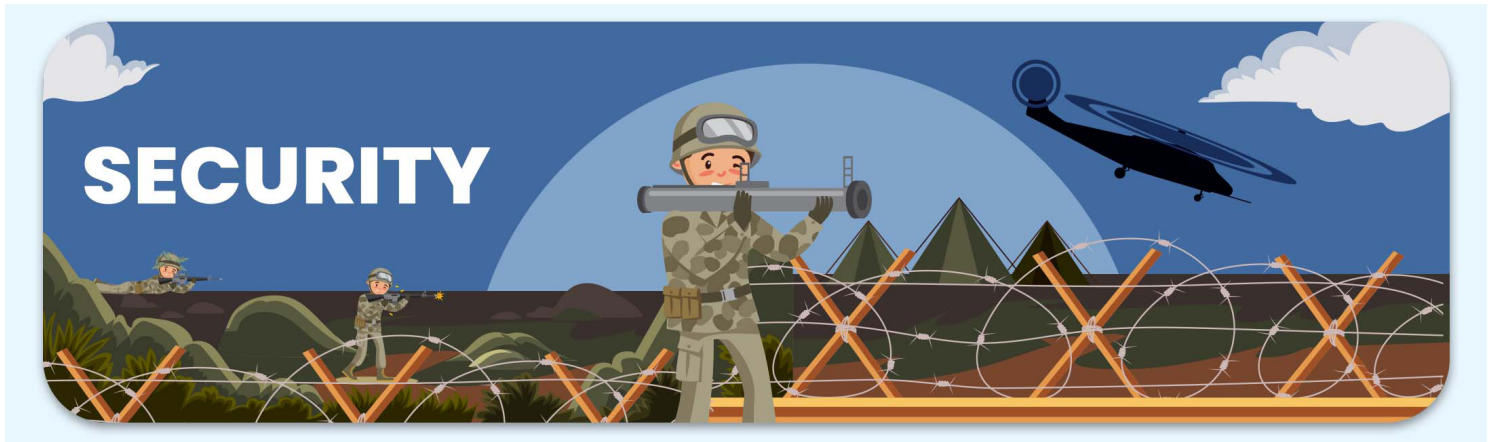
4.1. India's New Security Doctrine

Why in the News?

Prime Minister of India outlined India's **new security doctrine after successful Operation Sindoor**, marking a significant shift in India's counterterrorism doctrine.

Key changes in India's Security Doctrine

Operation Sindoor marks a **decisive departure in India's National Security Doctrine** with three core pillars:

India's Defense Doctrine: Three Strategic Pillars for National Security

Decisive Retaliation

Details	Shift and Significance
Any terrorist attack will be met with strong response. targeting terror hubs at their roots.	Lowered response threshold to deter future attacks. increasing military and economic costs of supporting terrorism.

No Tolerance for Nuclear Blackmail

Details	Shift and Significance
India will not be intimidated by nuclear threats and will strike terrorist safe havens operating under this pretext.	Ensures nuclear threats won't deter India's self. defense, shifting from past strategic restraint

No Distinction between Terror Sponsors and Terrorists

Details	Shift and Significance
India no longer sees terrorist leaders and sheltering governments as separate entities.	Establishes state-sponsored terrorism as state-sanctioned act of war through proxy actors.

Other key aspects of Security Doctrine during Operation Sindoor

- ➲ **Deterrence by Punishment:** Shift from 'Deterrence by Denial' to punishment strategy.
- ➲ **Economic Measures:** India placed Indus Water Treaty in abeyance.
- ➲ **Geopolitical Signalling:** Seven high-level delegations dispatched to present India's anti-terrorism stand internationally.
- ➲ **Strategic De-capacitation:** Struck eleven Pakistani airbases.
- ➲ **Coordinated and Tech-Driven Response:** Seamless integration of indigenous hi-tech systems including drone warfare.
- ➲ **De-escalation Strategy:** Aims to inflict punitive costs while limiting conventional conflict, putting onus on Pakistan.

Conclusion

Operation Sindoor represents a watershed in India's military evolution. **India's retaliation against cross-border terrorism marks a clear shift in posture, delivering a sophisticated campaign that redefines** South Asian conflict dynamics through operationalizing deterrence and neutralizing terror nodes.

4.2. Defense Technology in Operation Sindoor

Why in the News?

Operation Sindoor displayed India's technological superiority in military operations through its airspace capabilities.
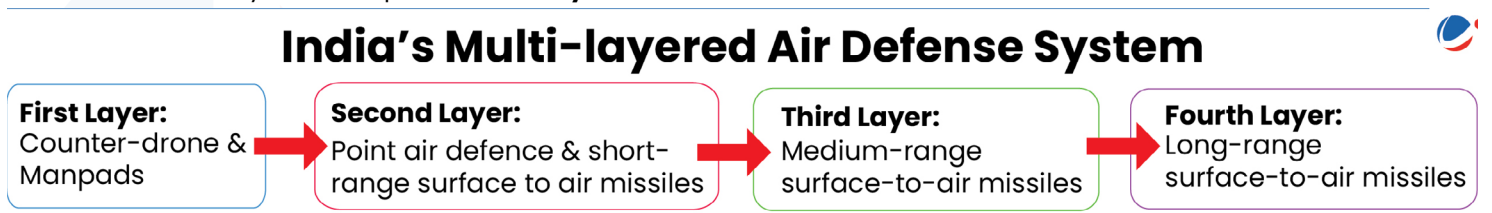
Key Defence technologies that enabled Operation Sindoor

India's Airspace Monitoring Systems

IN Indian Defense Systems
Advanced Integrated Command & Control Networks

IAF's IACCS

Integrated Air Command and Control System

- Automated system integrating data from all **air defence assets** including ground-based radar, airborne sensors, civilian radar
- Provides comprehensive battlefield picture. **Developed by BEL**

BMD Network's MCC

Ballistic Missile Defence Mission Control Centre

- Monitors airspace via Long-Range Tracking Radars (500+ km range) Including Swordfish Radars
- Receives data from ELM-2090 Terra systems, Netra AEW&C (200 km range), and Phalcon AWACS (400 km range)

Indian Army's Akashkeer

- Automates detection, tracking and engagement of enemy aircraft, drones and missiles
- Enables autonomous low-level airspace monitoring
- Developed by BEL

Indian Navy's TRIGUN

- Maritime domain awareness platform integrating sea-based radars, sonars, and communication nodes for real-time threat detection

NavIC Satellite Monitoring

Navigation with Indian Constellation

- ISRO developed system with 7 satellites providing Position, Velocity, and Timing service
- Uses dual-band signals with encrypted L5 for military use

India's Multi-layered Air Defense Systems

India's Air Defence System comprises of **four layers**.

India's Multi-layered Air Defense System

| **First Layer:** Counter-drone & Manpads | → | **Second Layer:** Point air defence & short-range surface to air missiles | → | **Third Layer:** Medium-range surface-to-air missiles | → | **Fourth Layer:** Long-range surface-to-air missiles |

Key Component of Each Layer

First Layer (Very Short Range)

- ➲ **D4 anti-drone system**: DRDO-developed with dual kill mechanism (Hard Kill: Laser; Soft Kill: RF Detection & Jamming).
- ➲ **MANPADS:** Russian Igla-M and Igla-S surface-to-air missiles carried by individuals.
- ➲ **Schilka systems:** Self-propelled radar-guided anti-aircraft weapon with 360-degree coverage.
- ➲ **Zu-23 mm system**: Twin-barrel anti-aircraft gun with 2.5 km range for air targets.
- ➲ **L/70 Anti-Aircraft Gun**: 40mm Bofors gun manufactured in India, 240-330 rounds/minute, 4 km range.

Second Layer (Short Range)

➲ **Akash:** DRDO-developed SRSAM with 30-35 km range, can engage multiple targets simultaneously.

➲ **SPYDER**: Israeli low-level SAM system with Python-5 and Derby missiles, 35 km range.

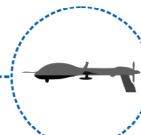➲ **Legacy Soviet Systems**: S-125 Pechora, 9K33 Osa-AK, and 2K12 Kub/Kvadrat.

Third Layer (Medium Range)

➲ **Barak-8:** India-Israel co-developed system with naval LRSAM (100 km) and MRSAM (70 km) versions.

Fourth Layer (Long Range)

➲ **S-400 Sudarshan Chakra:** Russian system with four missile types (40-400 km range), can engage all aerial targets up to 30 km altitude.

➲ **BMD Programme**: Two-tiered system with PAD (80 km altitude) and AAD (30 km altitude) for ballistic missile interception up to 2,000 km range.

Other Weapons Systems that were potentially used

Weapons	Details
BrahMos missiles	India-Russia supersonic cruise missile (2-3 Mach), **290 km range, fire-and-forget operation with pinpoint accuracy.**
Rafale Weapon Systems	French fighter jets with **SCALP cruise missiles (450 km), AASM HAMMER bombs (70 km), and METEOR air-to-air missiles.**
Drones	**Types of Drones used by India** **Surveillance and Reconnaissance Drones (ISR Drones):** These drones are primarily used for intelligence, surveillance, and reconnaissance purposes. **India currently has:** **TAPAS-BH-201** (Tactical Advanced Platform for Aerial Surveillance) **Rustom** (developed by DRDO) **Heron** (Israel) **Armed/Combat Drones (UCAVs):** Unmanned combat aerial vehicles (UCAVs) are capable of launching missiles or dropping bombs. **India has:** **DRDO's Ghatak** (under development) **Heron TP** (from Israel) **Swarm Drones:** Multiple drones operate in coordination to overwhelm enemy defenses, DRDO and private firms are working on swarm drone technology **Loitering Aerial Munitions (LAM) or kamikaze drone or Suicidal drone (crashes onto target)** These drones are designed to loiter over a target area & strike when a target is identified. **India has:** **Nagastra** (made by Solar Industries and ZMotion) **Warmate** (Polish origin) **SkyStriker** (Developed in collaboration with Israel)

Conclusion

During Operation Sindoor, India's indigenous air **defence technology showcased efficiency and reliability through fusion of public-private partnerships, innovation incentives, robust public sector execution and long-term defence vision.**

4.3. Social Media Influencers' and National Security

Why in the News?

A YouTube vlogger/influencer from Haryana, has been **arrested on charges of espionage.**

More on the News

- The Social Media influencer was booked under **Sections 3 and 5 of the Official Secrets Act and Section 152 of the Bharatiya Nyaya Sanhita (BNS).**
- Section 152 of the BNS deals with 'Act **endangering sovereignty, unity and integrity of India.'**

Salient Provisions of Official Secrets Act, 1923 (OSA)

- **Objective:** To safeguard government privacy and confidentiality for national security purposes.
- **Applicability:** OSA extends to whole of India including government departments and applies to individuals, contractors and citizens outside India.
- **Important Features of OSA, 1923**
  - OSA addresses espionage, sedition, and threats to national integrity.
  - Section 22 of RTI Act, 2005 gives it precedence over OSA and other laws.
  - Section 8(2) of RTI Act permits disclosure if public interest outweighs harm.
  - Section 8(1) lists exemptions from mandatory information disclosure.
- **Important Sections:**
  - **Section 3:** Penalties for spying activities like accessing restricted areas or sharing secret codes.
  - **Section 5:** Wrongful communication of secret official information**.**

Social Media Influencers as a Threat to National Security

- **Psychological Warfare**: Spread foreign-led misinformation to manipulate public opinion.
  - **Example**: China uses influencers to counter global criticism.
- **Espionage:** Some influencers leak sensitive data; **e.g.,** Jyoti Malhotra allegedly tied to Pakistan's intelligence.
- **Social Polarization**: Govt. blocked 1,093 accounts for fake news and hate speech in West Bengal.
- **Foreign Influence**: Pro-Khalistani accounts spread secessionist propaganda; India banned "Punjab Politics TV" for SFJ links.
- **Terror Propaganda**: Extremists exploit platforms like YouTube (e.g., Anwar al-Awlaki) for radicalization.

Key Terms

- **Psychological Warfare:** Planned use of propaganda and non-combat techniques to mislead and demoralize enemies.
- **Disinformation:** Intentionally false information spread to deceive recipients.
- **Misinformation:** False information spread without intention to deceive.

Steps Taken by India to Tackle Influencers' Threat to National Security

Legal Framework & Policies

- **IT Act, 2000**: Section 69A grants government power to **block online content for national security**.
- **IT Rules, 2021**: Requires platforms **to remove unlawful content** within 36 hours and trace message originators.
- **Fact Check Unit (FCU):** Official body under **PIB to tackle fake news**.
- **Regular sensitization:** Of government **officials on OSA and conduct rules** to prevent unauthorized disclosure.

Tackling Propaganda Warfare during Operation Sandor

- MHA directed Border States **to maintain strict vigil on anti-national propaganda** on social media.
- States instructed to block social media accounts spreading fake narratives **under Section 69A.**
- Government urged **public to report fake news to PIB Fact Check.k.**

Conclusion

India's multi-layered approach combines OSA with modern IT regulations, creating a comprehensive framework addressing traditional espionage and contemporary digital threats through influencer networks**.**

4.4. India's Diplomatic Outreach against State Sponsored Terrorism

Why in the news?

India launched a global diplomatic outreach after **the Pahalgam terror attack and Operation Sindoor, targeting Pakistan-sponsored cross-border terrorism.**

More on the News

- ⮑ India dispatched high-level multi-party delegations to more than 30 countries, comprising **Members of Parliament, senior political leaders, and experienced diplomats.**
- ⮑ These delegations are tasked with countering Pakistan's narrative rooted in the **'two-nation theory.' Colombia retracted its earlier statement** and reaffirmed support for India's anti-terror stance.

Key Objectives of the outreach

- ⮑ **Reframe the Kashmir Issue:** Present Kashmir as an internal constitutional matter, **not a bilateral one**.
- ⮑ **Expose Terror as State Policy:** Show Pakistan's use of terror as **a global threat to international anti-terror norms.**

Effectiveness of India's Global Outreach against State Sponsored Terrorism

- ⮑ **Legitimizing Self-Defence:** India invoked Article 51 of the UN Charter, **justifying Operation Sindoor as lawful response to armed aggression.**
- ⮑ **Support for Zero-Tolerance Policy on Terror:** India emphasized **firm approach to terrorism** and renewed calls for adoption of Comprehensive Convention on International Terrorism (CCIT) at the UN.
- ⮑ **Building Global Support:** Major Powers like **USA, Russia, Saudi Arabia, Israel, and Japan** condemned the Pahalgam attack and backed India's position.
- ⮑ **Winning Support from Muslim Majority Nations**: Indonesia, Egypt, and **Bahrain blocked Pakistan's anti-India move at the Organization of Islamic Cooperation (OIC).**
  - ➡ The OIC has 57-member states and is the **2nd largest organization after the UN.**

Effectiveness of India's Global Outreach Against State-Sponsored Terrorism

- ⮑ **Legitimizing Self-Defence:** India invoked Article 51 of the UN Charter, justifying *Operation Sindoor* as a lawful response to aggression.
- ⮑ **Zero-Tolerance on Terror:** Renewed calls for adoption of *CCIT* at the UN.
- ⮑ **Global Backing:** Major Powers like the US, Russia, and Japan condemned the *Pahalgam attack*.
- ⮑ **OIC Support:** Muslim-majority nations like Indonesia, Bahrain and Egypt blocked Pakistan's anti-India move at the 57-member OIC.

Long Term Impact Expected of Global Diplomatic Outreach

- ⮑ **Strengthening India's Global Standing**: Showcased India as a responsible global power, **acting firmly against terrorism within international norms.**
- ⮑ **Isolation of Pakistan:** Sends a strong deterrent message to **Pakistan sponsors of terrorism**, signaling diplomatic isolation and reputational costs.
- ⮑ **Leadership in Counter-Terrorism:** Enhances India's role in setting the **agenda on counter-terrorism and international security.**

Key Hurdles in India's Diplomatic Outreach Against State-Sponsored Terrorism

- ⮑ **Re-hyphenation with Pakistan:** Global discourse revives India-Pakistan parity, especially on Kashmir (e.g., Trump's ceasefire remarks).
- ⮑ **Weak Global Consensus:** No unified sanctions or actions against Pakistan despite evidence of state-sponsored terrorism.
- ⮑ **Pakistan's Diplomatic Gains**: Backed by China, Pakistan chairs key UNSC committees (Taliban Sanctions, Counter-Terrorism).
- ⮑ **Economic Leverage Gaps:** Pakistan secures major loans (IMF, World Bank, ADB) despite Indian objections.
- ⮑ **Bilateral Backing:** China and Turkey sustain support; Pakistan deploys teams to counter India's narrative.
- ⮑ **Short Media Focus:** Global crises divert attention, letting Pakistan regroup diplomatically.

Conclusion

India's assertion of sovereign prerogative marks strategic maturity. **The global order respects clarity more than compromise. The contest will unfold in minds, not maps, and narrative clarity** will determine who inherits the future. India's challenge is to own the story, as the side that frames the question often controls the answer.

4.5. Brahmos Aerospace Testing Facility Launched

Why in the News?

The Defence Minister recently inaugurated **the Brahmos Aerospace Testing Facility in Lucknow**, Uttar Pradesh.

More on the News

- Alongside the testing facility, **a Brahmos missile production unit was also inaugurated.**
- These units are part of **the Uttar Pradesh Defence Industrial Corridor.**

> ### Defence Industrial Corridors
>
> Two Defence Industrial Corridors to strengthen **defence manufacturing** and promote the sector are being established, one in Uttar Pradesh and the other in Tamil Nadu.
>
> - **Uttar Pradesh Defence Industrial Corridor:** Agra, Aligarh, Chitrakoot, Jhansi, Kanpur and Lucknow.
> - **Tamil Nadu Defence Corridor:** Chennai, Coimbatore, Hosur, Salem, and Tiruchirappalli.
> - **Significance of the Defence Industrial Corridors:** Make in India and Self-reliance, Employment Generation, Domestic Manufacturing, Export Facilitation.

About Brahmos Missile

- It is a universal long-range supersonic cruise missile system **that can be launched from land, sea and air.**
- It is developed by Brahmos Aerospace, a joint venture between **DRDO, India and NPOM of Russia.**

Key Features

- **Type**: Universal supersonic cruise missile (launch-capable from land, sea, air).
  - **Supersonic**: Speed = **2–3 Mach** (1 Mach = speed of sound).
- **Developed by**: BrahMos Aerospace (DRDO-India & NPOM-Russia JV).
  - **Name**: Derived from **Brahmaputra** (India) & **Moskva** (Russia) rivers.

Features:

- **Two-stage system**: **Solid-fuel booster** (achieves supersonic speed) & **Liquid ramjet** (cruises at ~3 Mach).
- **Range**: **290 km**.
- **Fire-and-Forget**: Autonomous guidance with multiple flight paths.
- **Variants**: **BrahMos-NG**: Lighter, smarter next-gen version; **BrahMos-II**: Hypersonic (>5 Mach, under development).

Significance of Brahmos Missile

- **High Speed and Precision**: High supersonic speed and **pin point accuracy.**
- **Stealth Feature:** Low radar signature **and can cruise as low as 10 meters.**
- **Defense Self Sufficiency:** Over **200 public and private Indian industries** contribute to its sub-systems.
- **Defense Export:** The Philippines became the first **country to procure Brahmos**.
- Comparison with other Missiles

Features	Brahmos (India-Russia)	Tomahawk (USA)	Kalibr (Russia)	Kinzhal (Russia)	Scalp (France)
Speed	Supersonic (2–3 Mach)	Subsonic (Mach 0.7–0.9)	Subsonic (boost to Mach 2.5 near target)	Hypersonic (up to Mach 10)	Subsonic (~Mach 0.8)
Range	290 km (extendable up to 800 km)	1,250–2,500 km	220–2,500 km	1,500–2,000 km	140 –550 km
Launch Platforms	Land, Sea, Air	Land, Sea, submarines	Sea, Submarine, Air	Air	Air, Ship, Submarine

Conclusion

The inauguration of the **Brahmos Aerospace Testing Facility marks a strategic step towards advancing** India's defence self-reliance and positioning the country as a key player in the **global defence export landscape**.

4.6. Golden Dome

US President has unveiled an **ambitious missile defense system named Golden Dome.**

About Golden Dome

➲ The Golden Dome is a **ground- and space-based missile defense system** designed to protect all of the U.S.A.

➲ It will be **a multi-layered defense system against hypersonic and cruise missile threats**, integrating space-based interceptors and advanced tracking technologies.

➲ The Dome will detect, track and stop missiles at multiple stages of flight, **potentially destroying them before takeoff or intercepting them in mid-air.**

➲ **Components include existing American missile defense assets:** Patriot missile batteries, THAAD, Aegis Ballistic Missile Defense, and Ground-based Midcourse Defense.

Concerns about Golden Dome

➲ **Weaponization of space**: China raised concerns saying it **"heightens the risk of space becoming a battlefield" and "fueling an arms race."**

➲ **Against the spirit of Outer Space Treaty**: States shall not place **nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies.**

Country	System and Details
Russia	➲ **S-400 Triumph (SA-21 Growler):** Advanced phased-array radar with 40–400 km range
USA	➲ **THAAD (Terminal High Altitude Area Defense):** ➲ Hit-to-kill technology, 1,000 km detection, surveillance, target identification, and tracking, Mach 8 interceptors.
Israel	➲ **Iron Dome:** System includes **Tamir interceptor** with launcher, battle management and weapon control system (BMC), serves as fire control radar for **David's Sling.** ➲ **Iron Beam:** High-energy laser (100–150 kW), unlimited magazine, complements Iron Dome.
China	➲ **HQ-9:** Draws from S-300 and Patriot tech, less advanced than S-400's radar.
India	➲ **Barak-8:** A joint Indian-Israeli surface-to-air missile defense system with 360° coverage, naval/land variants ➲ **Akash:** Rajendra radar, mobile, 100% indigenous, surface-to-air missile, can fly at supersonic speeds, Uses Ramjet-rocket propulsion system

Conclusion

The deployment of space-based interceptors raises **legitimate concerns about adherence to international space law and the risk of triggering a new arms race.** The challenge lies in balancing national security imperatives with preserving space as a peaceful **domain for all humanity.**

4.7. Naxalism

Why in the news?

Recently, security forces conducted the **largest ever anti-Naxal operation at Karreguttalu Hill** on the Chhattisgarh-Telangana border.

More in the News

The operation was conducted in line with the goal of **achieving a Naxal-free India by March 31, 2026.**

Naxalism in India

➲ **Background:** Naxalism or Left-Wing Extremism (LWE) originated from **the Naxalbari movement of 1967 in West Bengal.**

➲ **Ideology:** Rooted in socio-economic inequalities and driven by **Maoist principles, impacting remote, underdeveloped, and tribal-dominated regions.**

➲ **Aim:** The movement aims to undermine the Indian state through **armed rebellion and parallel governance structures.**

➲ **India's Red Corridor:** Refers to Naxalism affected states like **Chhattisgarh, Jharkhand, Odisha, Maharashtra, Kerala, West Bengal, and Madhya Pradesh.**

- **Modus Operandi:** Includes armed **violence, extortion, destruction of infrastructure, and recruitment of children and civilians.**

Reasons for the decline of Naxalism:

- India's multi-pronged counter LWE **strategy combining security, development, and community outreach has significantly reduced Naxal activity.**

Strengthened Security Architecture:

- **SAMADHAN doctrine:** Comprehensive strategy for security operations.
- **Security Related Expenditure Scheme:** Reimburses states' security costs.
- **Special Infrastructure Scheme:** Funds State Intelligence and Special Forces.
- **Intelligence and Operations:** Real-time, multi-agency coordination.
- **Financial Crackdown:** Targets funding via PMLA enforcement.

Development Interventions:

- **Special Central Assistance for most affected districts** to fill critical infrastructure gaps.
- Financial Inclusion efforts including **banking services and skill development initiatives.**
- Focus on strengthening Road connectivity, **Mobile connectivity, and Financial connectivity.**

Community Engagement:

- **Civic Action Programme** humanizes security forces and builds rapport with local people.

Persistent Challenges to Eliminating Naxalism

- **Violent Ideology**: Maoist doctrine promotes armed rebellion against the state.
- **Front Organizations**: Legal fronts aid recruitment, funding, and propaganda.
- **Difficult Terrain**: Dense forests and hills hinder security operations.
- **Trust Deficit**: Tribal alienation limits cooperation with authorities.

Way Forward

- **Addressing Trust Deficit:** Enhance local participation in administration and ensure tribal-friendly policies.
- **Countering Ideological appeal:** Promote democratic principles as countermeasure to violent Maoist ideology.
- **Security and Capacity building:** Prioritize modernization of local police forces and utilize intelligence-driven units.
- **Centre-state coordination:** Strengthen synchronized efforts to combat radicalization and facilitate development.

4.8. Crypto Currency Hawala Nexus

Why in the News?

The Supreme Court recently observed that **Bitcoin trading** resembles a refined form of **hawala** while hearing a bail plea.

More on the News

- Supreme court highlighted the absence of a clear **regulatory framework** for virtual currencies in India.
- Earlier in 2020, the Supreme Court quashed the **RBI's 2018 circular** prohibiting banks from offering services for virtual currencies.

About Cryptocurrency and Hawala System

- It is any form of currency that exists digitally or virtually and uses **cryptography** to secure transactions.
- **Hawala System:** Hawala is an **informal funds transfer system** used for transferring funds through service providers known as **hawaladars**.
  - It has alleged role in financing **illegal money laundering** and **terrorist activities.**

Cryptocurrency-Hawala Nexus

- The crypto hawala nexus refers to the convergence of traditional hawala with modern **cryptocurrency technologies**, creating a channel for **laundering illicit funds**.
- The **Enforcement Directorate** uncovered that ₹1,300 crore was routed through such **hybrid channels**.

## Reasons for linking Crypto Currency and Hawala

- **Anonymity and Complexity:** The combination makes tracking financial flows difficult.
- **Bypassing Traditional Finance:** Both systems bypass formal, regulated financial institutions.
- **Facilitating Illicit Activities:** Both are attractive for **money laundering** and **terror financing**.
- **Block chain reinforces Hawala:** Adding transparency and **smart contracts** strengthens hawala's trust-based model.

Concerns of the Cryptocurrency Hawala Nexus

- **Tracking Challenges:** Cryptocurrency's **pseudo-anonymity** enables large illicit transfers.
- **Use in Illicit Finance:** Exploited for money laundering and terror financing, including terrorist groups raising millions.
- **Regulatory Challenges:** Existing regulations need adaptation for cryptocurrency transactions.
- **Tax Avoidance:** Used to transfer remittances and **black money** to tax havens.
- **Security Risks:** Digital wallets are targets for hackers leading to significant losses.

CRYPTOCURRENCY –HAWALA NEXUS

1. **A transaction is requested** (Sender in Hawala)
2. **A block that represents the transaction is created** (unique encryption)
3. **The block is sent to every node in the network.** (Nodes acting as Hawaladars)
4. Nodes validate the transaction.
5. **The block is added to the existing blockchain.** (Transactions recorded anonymously)
6. **The transaction is complete.** (Receiver in Hawala)

Way Forward

- **International Cooperation:** Global collaboration and evolving regulations are vital for tracking funds.
- **Enhanced Compliance: Blockchain technology** can be used to track fund usage and ensure proper allocation.
- **Strengthening Regulations:** Clear laws on virtual currencies with **FATF guidelines** as references.
- **Comprehensive Approach:** Involving strict regulations, combating money laundering, and utilizing **AI and machine learning**.
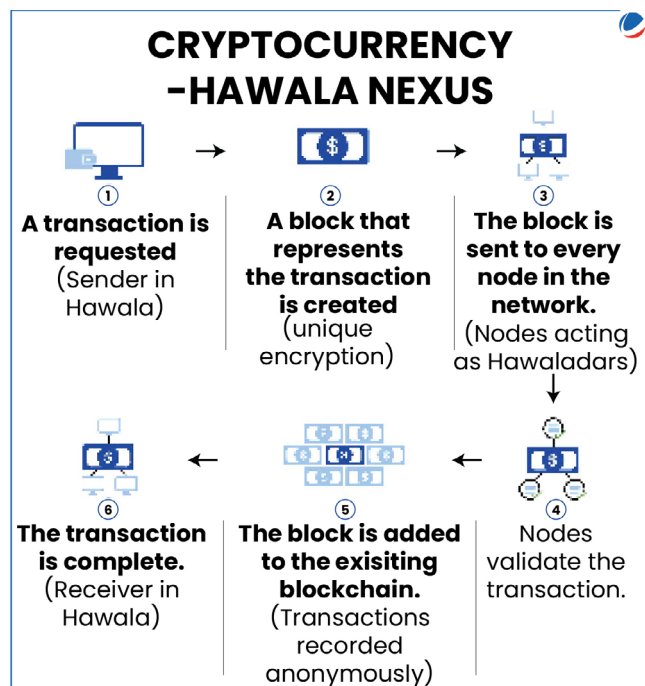
4.9. News in Shorts

4.9.1. Financial Fraud Risk Indicator

The Department of Telecommunications (DoT) has introduced a **Financial Fraud Risk Indicator (FRI) to combat mobile-based cyber fraud**. The Indicator allows for **swift, targeted action against suspected frauds in telecom and financial domains.**

What is Financial Fraud Risk Indicator (FRI)?

- **Risk-based classification** system for mobile numbers (Medium/High/Very High fraud risk)
- **Data sources:**
  - National Cybercrime Reporting Portal (NCRP)
  - DoT's Chakshu facility
  - Digital Intelligence Platform (DIP)
  - Bank/financial institution intelligence
- **Enables banks/NBFCs/UPI providers to take protective actions**

Status of Cyber Financial Frauds in India

- ₹3,207 crore lost (2020-2024) across 5.82 lakh cases
- Common fraud types:

  - KYC, UPI, card frauds
  - Customer care, digital arrest scams
  - Investment frauds

Measures Against Cyber Financial Frauds in India

- **Digital Intelligence Platform (DIP):** Facilitates real-time intelligence sharing between enforcement agencies, banks, and financial institutions.
- **Chadshu on Sanchez Sachik:** Enables citizens to report fraudulent calls, SMS, or WhatsApp messages.
- **Mulehunter (2015):** AI-based tool to identify money mules; recommended for banks.
- **Citizen Financial Cyber Fraud Reporting System (2021):** Allows instant fraud reporting and prevention under the Indian Cyber Crime Coordination Centre (I4C).
- **F-Zero ITR:** Automatically converts cyber fraud complaints (above ₹2.1 lakh) into Income Tax Returns (ITRs) via helpline/portal.

4.9.2. National Security Advisory Board (NSAB)

The Center has appointed a new chairman along **with 7 new members in the National Security Advisory Board (NSAB).**

About NSAB

- Constituted in 1998 as an advisory body of experts from industry, media & civil society.
- Supported by National Security Council Secretariat (NSCS).
- Functions:
  - ➜ Provides long-term analysis on national security to the NSC.
  - ➜ Recommends policy measures on NSC-referred issues.**FAO's first major assessment of soil 'Global Status of Salt-Affected Soils', report released**

4.9.3. Victims of Terrorism Associations Network (VOTAN)

The UN Office of Counter-Terrorism (UNOCT) launched VoTAN, a global network to support victims and survivors of terrorism.

About VoTAN

- **Background:** The Group of Friends of Victims of Terrorism, **chaired by Spain and Iraq,** was established six years ago to **uphold victims' rights.**
- **Genesis:** The network is a key outcome of the 2022 **UN Global Congress on Victims of Terrorism**.
- **Goal:** To provide a safe space for victims and survivors to **support each other and engage as advocates and peacebuilders.**
- **Financial Support:** Received from Spain.

4.9.4. Bhargavastra

India has successfully test-fired an indigenously developed anti-drone system, Bhargavastra.

About Bhargavastra

- It is a low-cost, **'hard kill' anti-drone system** designed to neutralize **threats from drone swarms**.
- **Developed By:** Solar Defence and **Aerospace Limited (SDAL)**.

Key Features:

- **Two-layer security system**: Layer 1 uses unguided micro-rockets with **20m lethal radius for swarm drones. Layer 2 uses guided micro-missiles for precision strikes.**
- **Range:** Detects drones from up to 2.5 km. **Radar detects aerial threats from 6–10 km.**
- **Terrain adaptability:** Above 5000 meters.

- **Modular design:** Allows integration of soft **kill options like jamming and spoofing**.
- **C4I-enabled command centre:** Enhances network-centric **warfare integration**

4.9.5. Multi-Influence Ground Mine (MIGM)

The Indian Navy and DRDO successfully **tested the indigenously developed MIGM.**

About MIGM

- Advanced underwater naval mine designed to enhance the **Indian Navy's capabilities against modern stealth ships and submarines.**
- **Designed and Developed by**: Naval Science and **Technological Laboratory (NSTL) under DRDO.**

Features:

- Uses multiple sensors to **detect acoustic, magnetic, and pressure signals from marine vessels.**
- Has **built-in electronics with processors to process data** and trigger actions.
- Deployable **from ships, submarines etc.**

4.9.6. Hawkeye 360 Technology

The US has recently approved sale **of HawkEye 360 technology to India to boost the country's surveillance capabilities.**

About HawkEye 360 technology

- It uses clusters of three satellites in Low Earth Orbit to detect, geolocate, and analyze radio frequency (RF) signals.

Significance for India

- **Detects** vessels switching off AIS to evade tracking in disputed zones.
- **Enhances** India's maritime domain awareness in the Indo-Pacific.
- **Enables** monitoring of illegal fishing, smuggling, and hostile surveillance.

4.9.7. Igla-S

Indian Army received new Russian **Igla-S missiles to counter drones, choppers, jets.**

About Igla-S

- It is a man-portable, shoulder-launched **surface-to-air missile (SAM) system designed for mobile ground units in high-threat environments**.
- It is an improved version of Very **Short-Range Air Defence Systems (VSHORADS).**

Key Features:

- **Uses** infrared (IR) homing to track heat signatures of aerial targets.

- **Automatically** locks onto engine heat, effective against drones and helicopters.
- **Range:** Engages targets up to 6 km away and 3.5 km in altitude.

4.9.8. Operation Hawk

Operation Hawk was launched by CBI to crack down on **global cybercrime networks involved in online child sexual exploitation.**

- The operation follows **Operation CARBON (2021) and Operation Megh Chakra (2022)** to dismantle networks with international links.

4.9.9. Exercises in News

Exercise	Details
IMDEX Asia 2025	⮞ Asia's premier naval & maritime defence event (since **1997**). ⮞ Organized by the **Republic of Singapore Navy**.
Nomadic Elephant	⮞ **17th India–Mongolia joint military drill** held in **Ulaanbaatar, Mongolia**.

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ENVIRONMENT

5.1. 2025 Conferences of the Parties to the BASEL, Rotterdam, and Stockholm Convention

Why in the News?

The 17th Basel, 12th Rotterdam, and 12th Stockholm Convention meetings were **recently held consecutively in Geneva.**

Key Outcomes of the Three COPs:

- ➲ **Joint Commitment:** All three COPs emphasized **enhanced collaboration with other environmental agreements.**
- ➲ **Basel Convention (BC COP-17):** Updated technical guidelines for **managing persistent organic pollutants** (POPs) wastes and adopted a new strategic framework (2025–2031).
- ➲ **Rotterdam Convention (RC COP-12):** Added two chemicals to Annex III: **Carbosulfan and Fenthion**.
- ➲ **Stockholm Convention (SC COP-12):** Added Chlorpyrifos, **Long-chain perfluorocarboxylic acids (LC-PFCAs), and Medium-chain chlorinated paraffins (MCCPs) to Annex A.**

Basel Convention

- ➲ **Overview:** Adopted on **22 March 1989 in Basel, Switzerland. India is a party to this treaty.**
- ➲ **Objective:** Protection from the adverse effects of hazardous and other wastes.
- ➲ **Scope:** It identifies hazardous waste by their origin, composition, or characteristics. It also includes "**other wastes**" such as household waste, plastic wastes.
- ➲ **Prior Consent Rule:** Mandates countries' approval before hazardous waste shipments.
- ➲ **New Focus Areas**
  - ➜ **Textile Waste**: Mislabelled as donations, complicating regulation in Global South.
  - ➜ **Shipbreaking**: 15,000 ships to be scrapped, containing POPs and heavy metals.

Rotterdam Convention

- ➲ **Genesis:** Rotterdam Convention on **Prior Informed Consent Procedures (PIC)** entered into force in 2004. India acceded to the Convention in 2006.
- ➲ **Objective:** To promote shared **responsibility in the international trade of certain hazardous chemicals**.
- ➲ **Covers:** Pesticides and industrial chemicals that have been banned or **severely restricted.**
- ➲ **Legally Binding PIC**: Exporters must disclose banned/restricted substances for informed consent.
- ➲ **Issues**
  - ➜ **Unlisted Chemicals**: Rotterdam Convention delayed listing methyl bromide, mercury, etc.
  - ➜ **Trade Over Science**: Producer nations blocked listings over economic fears.
  - ➜ **Treaty Overlap**: Conflicts with stricter agreements caused delays. **E.g.,** Montreal Protocol, Minamata, and Stockholm Conventions.

Stockholm Convention on Persistent Organic Pollutants (POPs)

- ➲ **Genesis**: Adopted in 2001 in Stockholm, Sweden; entered into force in 2004. India ratified it in 2006.
- ➲ **Objective:** To protect from long-lasting, widespread chemicals that accumulate in humans and wildlife.
- ➲ **Issues:** Difficulty regulating complex chemicals like MCCPs, excessive exemption requests, and industry misrepresentation

exposed in the UV-328 case.

Significance of the BRS Conventions

➲ **Key Global Frameworks:** They are key global frameworks for protecting human health and the environment from hazardous chemicals and wastes.

➲ **Lifecycle Regulation:** They regulate the entire chemical lifecycle—production, use, and disposal.

➲ **Role in Meeting SDGs:** They play a crucial role in achieving the 2030 Sustainable Development Goals by promoting safe management of chemicals and wastes, contributing to Goals 2 (**(Zero Hunger**), 3 (**Good Health and Well-being),** 6 (**Clean Water and Sanitation**), 11 (**Sustainable Cities**), and 12 (**Responsible Consumption and Production**).

Conclusion

The theme "**Make visible the invisible" reminds that even small updates can keep treaties like the Rotterdam Convention relevant**. Parties must adapt and act to ensure real protection for people and the environment.

5.2. Biological Diversity (Access and Benefit Sharing) Regulation 2025

Why in the news?

The National Biodiversity Authority has issued new rules — **Biological Diversity (Access and Benefit Sharing) Regulation 2025.**

More on the news

➲ The rules regulate how benefits from **biological resources and associated knowledge are fairly shared**.

➲ Rules have been notified by the **NBA in accordance with the Biodiversity Act (BDA) 2002**, replacing the 2014 rules.

➲ The well-known ABS case involves the Kani tribal community of Kerala and the **Arogyapacha plant (Trichopus zeylanicus) used for the Jeevani drug.**

India's Legal Framework on Access and Benefit Sharing (ABS)

➲ **Purpose:** BD Act, 2002 aligns with CBD to conserve biodiversity.

➲ **Scope:** Covers all biological resources, broader than Nagoya Protocol.

➲ **Implementation:** Three-tier system—NBA, SBBs, and BMCs.

Key Highlights of the Rules

➲ **DSI Inclusion:** Covers benefit-sharing for biological resources, including Digital Sequence Information.

➲ **Prior Approval:** NBA permission required (exempts certain cultivated medicinal plants).

➲ **Slab-Based Sharing:** Benefit-sharing tiers based on annual turnover.

➲ **High-Value Resources:** 5-20% benefit-sharing for commercial use.

- **Research Transfer:** Monetary/non-monetary sharing for research outcomes.
- **IPR Commercialization:** Up to 1% of annual ex-factory sales for IPR-based products.
- **ABS Significance:** Ensures sovereignty, biodiversity conservation, and empowers local communities.

Challenges with Implementation

- **Transboundary Issues:** Genetic resources span borders, complicating consent/benefit-sharing.
- **Weak Capacity:** Limited resources hinder CBD/national law enforcement.
- **Customary Law Gap:** Traditional knowledge systems lack formal legal integration.
- **Documentation Hurdles:** People's Biodiversity Registers are slow and complex.
- **Research Ambiguity:** Blurred academic/commercial research lines risk misuse.
- **Poor Monitoring:** Overlapping mandates and agencies cause coordination failures.
- **Awareness Deficit:** Stakeholders lack understanding of ABS laws.

Way Ahead

- **Global Mechanism:** Adopt multilateral benefit-sharing for cross-border resources.
- **Indigenous Rights:** Legally embed customary laws into ABS frameworks.
- **Digital PBRs:** Tech-driven documentation for efficiency and transparency.
- **Research Clarity:** Define strict academic/commercial research criteria.
- **Centralized Monitoring:** Unified digital platform for NBA-SBB-BMC coordination.

5.3. The Himalayan Mountain System Ecology

Why in the News?

Union Minister for Environment, Forest and Climate Change, **represented India at the inaugural session of the Sagarmatha Sambaad in Kathmandu, Nepal.**

More on the News

- **Sagarmatha Sambaad**: It is a multi-stakeholder dialogue forum on global, regional and national issues.
- **Theme of the Summit:** 'Climate Change, Mountains, and the Future of Humanity'.
- India outlined a **five-point call for global action to address** ecological challenges in mountainous regions.

Five-point call for global action

- Enhanced Scientific Cooperation,
- Building Climate Resilience,
- Empowering Mountain Communities,
- Providing Green Finance,
- Recognizing Mountain Perspectives

Physiography of the Himalayan Mountain System

- Youngest & highest fold mountains, **spanning 5 countries (India, Nepal, Bhutan, China, Pakistan).**
- Formed **50 million years ago by Indian-Eurasian Plate collision.**
- Key glaciers: **Gangotri, Yamunotri, Alaknanda.**
- Spreads across **13 Indian states/UTs (2,500 km).**
- Diverse vegetation: **Tropical (foothills) to alpine (summits).**

Ecological Significance

- **Biodiversity:** Two hotspots (Himalaya & Indo-Burma); 32% endemic plants, rare fauna (snow leopard, red panda).
- **Water Tower**: 3rd largest glacial reserve; feeds 10 rivers (~1.3 billion dependents).
- **Climate Role:** Monsoon regulator, stores 5.4B tonnes carbon, impacts albedo.
- **Economy: Fiber**/timber source; 240M tourists/year by 2025.

Threats to the Himalayan Ecosystem

- **Deforestation**: 1,072 sq km forest lost (2019-21), endangering species.

- ⮕ **Glacial Retreat**: Gangotri glacier receded 1,700m (1935-2022), raising GLOF risks.
- ⮕ **Climate Change**: 90% region faces drought risk at +3°C; warming 2-5x faster than global average.
- ⮕ **Tourism Pressure**: Unregulated tourism worsens landslides and subsidence.
- ⮕ **Hydropower Impact**: 115+ large projects disrupt river ecosystems.

Initiatives to Protect the Ecosystem of the Himalayan Mountain System

- ⮕ **India's Initiatives**
  - ➜ **National Mission for Sustaining the Himalayan Ecosystem (NMSHE)**: Focuses on glacial monitoring, biodiversity conservation, and disaster resilience.
  - ➜ **Project Snow Leopard:** Found 718 snow leopards in India (~10-15% of global population).
  - ➜ **Centre for Cryosphere & Climate Change Studies:** Monitors Himalayan glaciers.
  - ➜ **Disaster Preparedness:** Includes GLOF risk mapping.
  - ➜ **Sustainable Tourism & Waste Management:** Swadesh Darshan Scheme and ban on single-use plastics.
- ⮕ **Global Initiatives**
  - ➜ **International Year of Glaciers Preservation (2025) & Cryosphere Decade (2025–2034):** Led by UNESCO and World Meteorological Organisation.
  - ➜ **Global Snow Leopard Ecosystem Protection Program (GSLEP):** 12 range countries collaborate for conservation.
  - ➜ **International Centre for Integrated Mountain Development (ICIMOD):** Preserves the Hindu Kush-Himalaya region.
  - ➜ **SECURE Himalaya Project**: Part of Global Wildlife Program funded by GEF.
  - ➜ **International Big Cats Alliance (IBCA):** Treaty-based organization conserving seven big cat species.

Conclusion

The Indian Himalayas face threats from habitat loss, illegal wildlife trade, forest fires, and anthropogenic pressures, requiring stronger conservation efforts for this fragile biodiversity hotspot**.**

5.4. Urban Floods

Why in the News?

Recently, heavy pre-monsoon **thundershowers in Bengaluru led to severe Floods.**

More on the News

- ⮕ Similar incidents in Hyderabad (2020-21), Chennai (2021), Bengaluru and Ahmedabad (2022), Delhi (2023), shows that **Urban Flooding has become a regular phenomenon.**

What is Urban Flooding?

- ⮕ It is a type of flood, **where a city or Urban Area is inundated with water due to inability of drainage systems to handle sudden,** excessive rainfall.
- ⮕ Urban flooding differs from **rural flooding** as cities have more developed land, **which can increase flood peaks by 1.8 to 8 times.**

Causes of Urban Flooding

Natural Factors

- ⮕ **Meteorological Factors**: **Extreme precipitation events** cause sudden water accumulation, as seen in **2005 Mumbai Floods** and **2015 Chennai Floods**.
  - ➜ **Climate change** has intensified these patterns.
- ⮕ **Hydrological Factors**: Flood risk arises when **surface runoff** is more than the **infiltration rate** during precipitation.
  - ➜ Heavy rainfall in **Yamuna catchment area** leads to flooding in **Delhi**.

Anthropogenic factors Unplanned Urbanization:

- ⮕ **Bengaluru's drains** are designed only for rainwater but forced to handle **2000 MLD of sewage** daily. Builders routinely **encroach upon drains**.
- ⮕ **Lake Encroachments**: eg. **Ousteri Lake** in Puducherry, **Charkop Lake** in Maharashtra.
- ⮕ **Unplanned release of water from dams**: Eg. **Chennai Floods 2015** due to **Chembarampakkam lake**.
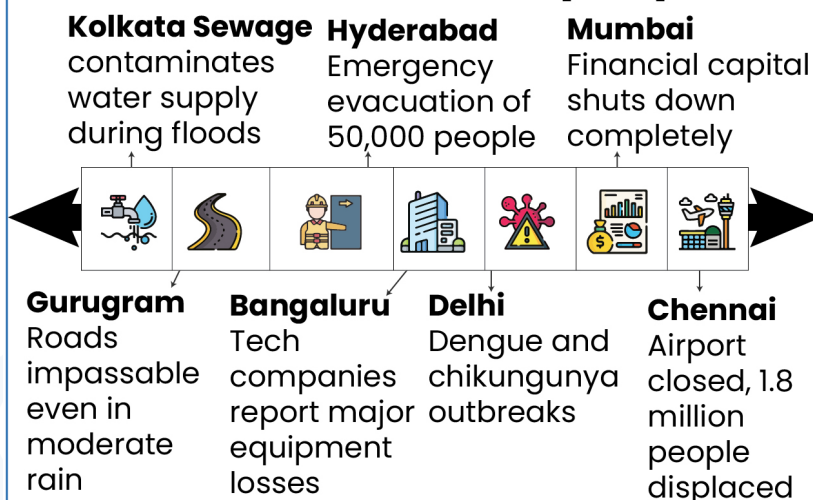- ⮕ **Illegal mining activities:** Eg. Depletion of river bed in Cauvery River, Tamil Nadu.

Challenges in Urban Flood Management

➲ **Constitutional division of responsibilities: Water is a state subject** and **drainage systems** fall under **city authorities' jurisdiction**.

➲ **Infrastructure Challenges**: **Aging and undersized infrastructure** cannot handle current **rainfall intensities**.

➲ **Social Inequality: Low-income communities** live in **flood-prone areas** with **inadequate infrastructure**.

➲ **Rapid Urbanization Impacts:** It is leading to disruption of **natural drainage patterns.**

➲ **Lack of necessary data for drainage design:** Intensity-duration-frequency curves for the major cities in India are **not readily available from the IMD.**

Mitigation Strategies

➲ **NDMA guidelines**: Provide guidance for **Disaster Management (DM) plans**.

➲ **Flood forecasting stations**: **Central Water Commission** has developed network of **flood forecasting stations**.

➲ **Technological Interventions**: **IFLOWS-Mumbai, CFLOWS-Chennai** are **Web GIS based decision support systems, 39 Doppler Weather Radars** under **Mission Mausam**.

➲ **Groundwater Recharge Programs: Master Plan** envisions **1.42 crore rainwater harvesting structures**.

➲ **Water Body Development Schemes: Amrit Sarovar Mission** for rainwater harvesting.

➲ **Urban Infrastructure Measures: AMRUT 2.0** Scheme provides for **strengthening of drainage systems.**

Way Forward with Global Best Practices

➲ **Singapore's ABC Program**: Uses "green infrastructure" to make water "**Active, Beautiful and Clean".**

➲ **Vienna's New Danube System:** Built 21-kilometer flood relief channel **parallel to main Danube River**.

➲ **China's Sponge Cities:** Uses **nature-based solutions** like permeable surfaces, restored wetlands.

➲ **Denmark's Green Climate Screen:** Rainwater management system **using natural processes.**

➲ **Other possible way forwards:** Preparation of **contour maps, augmentation of the storm water drainage network, cross-drainage works, and augmentation of pumping capacity**

Impact of urban flooding on infrastructure and people

Kolkata Sewage contaminates water supply during floods

Hyderabad Emergency evacuation of 50,000 people

Mumbai Financial capital shuts down completely

Gurugram Roads impassable even in moderate rain

Bangaluru Tech companies report major equipment losses

Delhi Dengue and chikungunya outbreaks

Chennai Airport closed, 1.8 million people displaced

5.5. Six New Sites Join FAO's GIAHS

Why in the news?

Six news sites have been added **to FAO's Globally Important Agricultural Heritage Systems (GIAHS) Programme.**

More on the news

The recent additions include: A traditional agroforestry system for erva-mate plant in Brazil, Specialised farming systems in China for pearl mussels, white tea, and pears, Ancestral system preserving vital food crops and biodiversity in Mexico, A distinctive farming system in Lanzarote island, Spain.

About Globally Important Agricultural Heritage Systems (GIAHS) Programme

➲ **Genesis:** Launched at the World Summit for Sustainable Development in 2002 as a **response to alarming global trends undermining family farmers.**

➲ **Purpose:** To protect family farming and traditional agricultural systems from threats **such as climate change, community displacements and biodiversity loss.**

➲ **Approach:** Using multistakeholder approach, GIAHS provides technical assistance **to farming communities and promotes traditional agricultural knowledge.**

➲ **Current Status:** There are **95 GIAHS sites in 28 countries**, including Saffron Heritage of Kashmir, Koraput Traditional Agriculture (Odisha), Kuttanad Below Sea Level Farming System (Kerala).

What is GIAHS?

⮕ They are agroecosystems **inhabited by communities that live in an intricate relationship** with their territory.

⮕ **Characteristics:** Remarkable Agrobiodiversity, Traditional Knowledge, Invaluable Cultures, Beautiful Landscapes.

Why Protect Family Farming and Traditional Agriculture?

⮕ **Food Security:** Provide diverse, nutritious food while preserving crop varieties**.**

⮕ **Income security:** Increase resilience of 2.5 billion people whose livelihoods depend on agriculture.

⮕ **Cultural Heritage:** Conserve diversity in global communities, cultures, histories.

⮕ **Innovation Foundation:** Provide foundation for contemporary and future agricultural innovations.

The UN declared **2019–2028 as the UN Decade of Family Farming** to recognize the critical role of traditional farming systems as younger generations increasingly migrate to cities.

5.6. News in Shorts

5.6.1. Supreme Court Strikes Down Retrospective Environmental Clearances

In **Vanashakti v. Union of India (2025),** the SC restrained the Centre from granting ex-post facto environmental clearance (EC) to mining projects or **regularising actions that contravene the 2006 EIA notification.**

⮕ **The EIA Notification, 2006,** clearly requires 'prior environmental clearance' before a project can start.

⮕ The court held that such **notifications were illegal, arbitrary, and violative of Articles 14 and 21** of the Constitution.

⮕ Previously, in Common Cause v. UoI & Ors. (2017), **Supreme Court held that ex post facto environmental clearance is completely alien to environmental jurisprudence.**

Environmental Impact Assessment (EIA)

EIA notification 2006 was designed to ensure that **developmental projects are assessed for their potential environmental impacts before approval.**

**It categorised the projects in 2 categories:**

⮕ **Category A: National Level Appraisal**

　➡ Require prior EC from the **Central Government in the MoEFCC.**

　➡ Decision based on recommendations of an **Expert Appraisal Committee (EAC).**

⮕ **Category B: State Level Appraisal**

　➡ Require prior EC from the State/UT **Environment Impact Assessment Authority (SEIAA).**

　➡ Decision based on recommendations of a State or UT **level Expert Appraisal Committee (SEAC).**

5.6.2. CAQM Issues Direction for Paddy Stubble Burning

Commission for Air Quality Management (CAQM) gave directives **to Punjab, Haryana, and UP to prevent incidents of stubble burning as per Supreme Court order in M. C. Mehta vs. Union of India case.**

⮕ **CAQM has been set up for Air Quality Management** in the **National Capital Region and Adjoining Areas** for

better co-ordination and **resolution of air quality problems.**

Crop Residue Burning
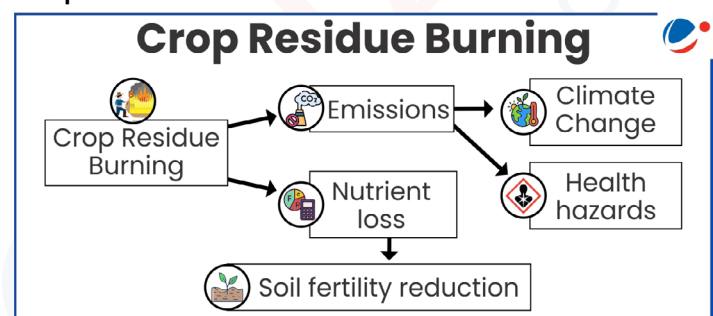
Key Directions

⮕ **Parali Protection Force**: Police & agriculture officers to enforce stubble management.

⮕ **Paddy straw co-firing**: Mandate pellets/briquettes in brick kilns (like thermal plants).

⮕ **Farm mapping**: Village-wise plans for stubble disposal.

⮕ **Straw procurement rate:** Punjab & UP to adopt Haryana's pricing model.

⮕ **Ex-situ solutions**: Boost baler/raker use for residue management.

⮕ **Digital monitoring**: Online portal for CRM machine tracking & data reporting.

5.6.3. National Centre of Polar and Ocean Research (NCPOR) Celebrates 25 Years

About NCPOR (HQ: Goa)

⮕ **Genesis**: Established 1998 under MoES; autonomous.

⮕ **Governing Body**: 13-member panel chaired by MoES Secretary.

Key Roles of NCPOR

⮕ **Polar & Ocean Research**: Manages stations in Antarctica (Maitri/Bharati), Arctic (Himadri), and Himalayas (Himansh).

⮕ **Deep Ocean Mission**: Explores mineral resources in Indian Ocean.

⮕ **Policy Implementation**: Executes India's Arctic Policy (2022) & Antarctic Act (2022).

➔ **Antarctic Act:** Legal framework; establishes CAG-EP.
➔ **Arctic Policy:** Six pillars (Science, Climate, Economy, Connectivity, Governance, Capacity).
⮎ **Significance**: Ice monitoring, ocean geopolitics, research facilitation.
⮎ **Facilities**:
➔ **Polar Bhavan:** India's first Polar & Ocean Museum.
➔ **Sagar Bhavan:** Labs & archives for biological/ocean samples.

5.6.4. Global Methane Tracker 2025

Global Methane Tracker 2025 has been released by **the International Energy Agency (IEA).**

Key findings

⮎ Methane (greenhouse gas) is responsible for around **30% of the rise in global temperatures since the Industrial Revolution.**
⮎ The three main sources of methane include **agriculture, energy and waste sectors.**
⮎ The energy sector accounts for **more than 35% of methane emissions** from human activity.
⮎ Methane emissions could be cut **by 50% by effectively utilising methane** in mines or by deploying flaring or oxidation technologies.
➔ Gas flaring is **the burning of the natural gas** associated with oil extraction.

5.6.5. Asiatic Lion Population Increases in Gujarat

Asiatic Lion population increases from **674 to 891 in 5 years according to the Lion Census (2025).**
⮎ There has been an increase in the number and distribution **area of Asiatic Lions, exemplifying the success of 'Project Lion.'**
⮎ The census conducted every 5 years by the **Gujarat Forest Department.**
⮎ Project Lion (2020) has the goal of long term conservation through monitoring with **advanced technologies and disease management.**

About Asiatic Lion (Panthera leo persica)

⮎ **Habitat**: Grasslands, savannas, dense scrub, and open woodlands.
⮎ Concentrated in the **Gir National Park and Wildlife Sanctuary (Gujarat)**.
⮎ Barda Wildlife Sanctuary has emerged as a **"second home" for lions.**
⮎ IUCN Status: **Vulnerable.**
⮎ Listed in **Schedule I and IV of Wildlife (Protection) Act 1972**, in Appendix I of CITES.
⮎ **Characteristics of Asiatic Lion:**
➔ Asiatic lions are **slightly smaller than African lions** with a distinctive longitudinal fold **of skin running along its belly.**

➔ Males have only moderate mane growth so that their **ears are always visible.**
➔ Lions do not have a **particular breeding season.**
⮎ **Intiatives For Conservation:** International Big Cat Alliance, Greater Gir Concept, Asiatic Lion Reintroduction Project, Technologies for Lion Monitoring

5.6.6. Ladakh's Snow Leopard Population

A study by Ladakh's Department of Wildlife Protection estimates 477 snow leopards, accounting for 68% of India's population, making Ladakh one of the world's highest density regions for this species.

Key Highlights

⮎ **High-Density Areas**: **Hemis National Park, Kargil,** and Leh host one of the largest contiguous populations globally.
⮎ **Factors**: Resource-rich grasslands, moderate climate, high prey availability, low human disturbance (61% co-exist near humans), cultural reverence, tourism benefits, and conflict management.

Conservation Initiatives

⮎ Project Snow Leopard (India)
⮎ International Big Cat Alliance
⮎ Global Snow Leopard & Ecosystem Protection Programme
⮎ Bishkek Declaration 2017
⮎ Samarkand Resolution 2024

About Snow Leopards (Panthera uncia)

⮎ **Range:** Found across 12 countries; in India: Ladakh, J&K, HP, Uttarakhand, Sikkim, Arunachal.
⮎ **Status:** IUCN – Vulnerable, CITES – Appendix I, CMS – Appendix I, WLPA – Schedule I
⮎ **Habitat**: Steep, rocky terrains at 3,000–5,000m elevation
⮎ **Traits:** Solitary, crepuscular, with smoky-grey fur and rosettes.

5.6.7. Operation Olivia

Operation Olivia has shielded over **8-lakh olive Ridley turtles on Odisha's Gahirmatha coast.**

About Operation Olivia

⮎ Initiated **in 1980s by the Indian Coast Guard and conducted every year** from November to May.
⮎ **The operation focuses on:** Gahirmatha Beach, Rushikulya River Mouth, and Devi River Mouth.
⮎ These coastal zones witness the arrival of **over 800,000 Olive Ridley turtles annually for mass nesting called arribada.**

About Olive Ridley Turtles

- It has a circumtropical distribution, with nesting occurring **throughout tropical waters (except the Gulf of Mexico).**
- **IUCN Status:** Vulnerable; **CITES:** Appendix I**.**

5.6.8. TSARAP CHU Conservation Reserve

State Government of Himachal Pradesh **notified Tsarap Chu Conservation Reserve (India's largest)** in Spiti Valley.

About Tsarap Chu

- It is the location for the confluence of the **Unam River and Charap Nala.**
- It is bounded **by UT of Ladakh to the north, Kibber Wildlife Sanctuary** to the east, **Kabjima Nala to the south and Chandratal Wildlife Sanctuary to the west.**
- It is particularly known for the snow leopard, often called the **'ghost of the mountains'.**
- **Other species:** Tibetan wolf, bharal, Himalayan ibex, kiang, Tibetan argali, and rare **bird species such as Rose Finch, Tibetan Raven.**

5.6.9. Yala Glacier Declared Dead

Glaciologists and local communities mourned the loss **of Nepal's Yala glacier after it has shrunk by 66%** since the 1970s, making it among Nepal's first likely to be declared dead.

Glacier Funeral

- It is a symbolic ceremony held **to mark rapid disappearance of glaciers due to climate change.**
- **Other major glaciers declared dead:** Pizol Glacier, Switzerland (2019); Clark Glacier, US (2020); Ayoloco glacier, Mexico (2021).
  - The world's first funeral was held for **Okjokull glacier in Iceland in 2019.**

Consequences of Glacial Loss

- **Accelerates global warming**: Reduced Glaciers will **have less albedo effect** and increase heat absorption.
- **Accelerates sea level rise**: Melting glaciers have **caused nearly 2 cm to global sea level rise since 2001.**
- **Disrupted water cycles:** Nearly **three-quarters of Earth's freshwater is stored in glaciers**. Their rapid melting threatens **water security and endangers biodiversity.**
- **Natural disasters:** It increases risks of **Glacial Lake Outburst Floods (GLOFs) and avalanches.**

Initiatives for conservation of Glaciers

Global

- **UN Initiatives:** 2025 designated as the International Year of Glaciers' Preservation; March 21 to be observed annually as World Day for Glaciers.
- UNESCO Intergovernmental Hydrological Programme, Himalayan Adaptation Network by IUCN, Living Himalayas Initiative by World Wide Fund for Nature.

India's Initiatives

- **National Mission for Sustaining the Himalayan Ecosystem**.
  - **Network Programme on the Himalayan Cryosphere**
  - **Indian National Centre for Ocean Information Services (INCOIS):** It monitors glacier-related events and issues GLOF alerts.
  - **Himansh Research Station** tostudies the dynamics and the rate of change of Himalayan glaciers.
  - **Missions to Arctic & Antarctic** e.g., **IndARC** (2014).

5.6.10. Solar Panel Efficiency Norms

MNRE Eases Solar Panel Efficiency Norms for Off-Grid Rural Projects

The Ministry of New and Renewable Energy (MNRE) has relaxed efficiency norms for off-grid solar modules (<200W), allowing **lower-efficiency panels** on its **Approved List of Models and Manufacturers (ALMM).**

Key Changes (May 2025 Amendment)

- **Efficiency Standards Lowered**:
  - *Earlier*: Crystalline silicon – 19%, CdTe – 18%
  - *Now*: Both technologies – 18%
- **Scope**: Applies only to **off-grid systems <200W** (e.g., lanterns, micro-grids, streetlights), not larger systems.
- **Off-grid systems**: Operate independently from the power grid using battery storage.

New DRE Category Introduced

- **Distributed Renewable Energy (DRE)**: Local renewable power near the point of use.
- Supports **small manufacturers** and **rural electrification** efforts.

Concerns

- Lower energy output per area
- Faster panel degradation
- Risk of substandard modules without quality checks

Significance

- Improves **affordability and access**
- Promotes **local manufacturing**
- Boosts **rural energy access** without major tech compromise

5.6.11. World's First Commercial-Scale E-Methanol Plant Operationalised in Denmark

E-methanol offers a viable path **for reducing emissions in hard-to-abate sectors such as shipping and chemical manufacturing.**

What is e-methanol (or electro-methanol)?

- ➲ It is a low-carbon energy produced by **combining green hydrogen with captured carbon dioxide.**
- ➲ **E-methanol production** typically involves three key steps:
  - ➡ **Green hydrogen generation:** Renewable energy-powered water electrolysis creates the hydrogen feedstock.
  - ➡ **CO2 capture:** Carbon dioxide is captured from industrial flue gases or directly from the air.
  - ➡ **Methanol synthesis:** The hydrogen and CO2 are combined in a catalytic reactor under pressure, yielding methanol.
- ➲ **Benefits:** Can be used without infrastructure change; **Stable storage at room temperature; versatile fuel applications.**
- ➲ **Applications:** Apart from shipping industry, its derivatives **gasoline and kerosene provide solutions for road and air transport.**
- ➲ **Challenges:** E-methanol remains significantly **more expensive than fossil-based methanol** due to high renewable electricity costs and production inefficiencies.
- ➲ **Methanol Economy Programme (NITI Aayog)**
  - ➡ **Aim**: Cut oil imports and GHG emissions by converting coal, waste and co2 into methanol, a low carbon hydrogen carrier fuel.
  - ➡ **Benefits:** Generate around 5 million jobs and save 6000 crore annually by blending 20% methanol derivative in LPG.

5.6.12. RIMES

Declaration on Disaster Preparedness has been adopted at the **4th Ministerial Conference of Regional Integrated Multi-Hazard Early Warning System (RIMES),** held in Colombo, Sri Lanka.

About Regional Integrated Multi-Hazard Early Warning System (RIMES), 2009

- ➲ It is an **intergovernmental body** that provides early warning services, disaster risk **reduction strategies, and capacity building to its Member States.**
- ➲ It evolved from the efforts of countries in **Africa, Asia and the Pacific, in the aftermath of the 2004 Indian Ocean tsunami.**
- ➲ **Membership:** It has 22 member states and 26 collaborating states.
- ➲ It operates from its regional early warning center located **at Asian Institute of Technology in Thailand.**

5.6.13. Banana Musa Indandamanensis

An infructescence of about 4.2 metres has been recorded in a species of **wild banana Musa indandamanensis, making it the longest infructescence recorded in bananas.**

- ➲ **Infructescence is a group or cluster of fruits** arranged on an axis/stem that is **composed of a main stalk.**

About Musa indandamanensis

- ➲ **Discovery:** First recorded from a remote tropical forest **near Krishna Nala reserve forest in the Andaman and Nicobar Islands in 2012.**
- ➲ **Characteristics:**
  - ➡ It bears **unique green flowers and fruit bunch** lux thrice the size of a regular banana species.
  - ➡ It is about 11 metres high, whereas usual banana species **is about three to four metres high.**
- ➲ **Benefits:** It can provide natural genetic resource for plant breeders **to develop high yielding and disease resistant varieties.**

5.6.14. Atmospheric Memory

A recent study found that the **atmospheric memory, not just sunlight, drives the onset and retreat of monsoons. Key Findings**

- ➲ Atmosphere stores **physical information as water vapor,** controlling **monsoon onset and withdrawal.**
  - ➡ Earlier assumption was that monsoon patterns were primarily an **immediate response to solar radiation changes.**
- ➲ **The state of atmosphere depends on its seasonal history:** if it's already raining, the rain persists. But if it has been dry, it is hard to initiate rainfall. This behaviour is called bistability.
- ➲ Atmospheric state depends on **seasonal history**: existing rain persists while dry conditions resist rainfall initiation. This is called **bistability.**
- ➲ At identical solar radiation levels, atmosphere can be **either dry or rainy** based on previous conditions.

SOCIAL ISSUES

## 6.1. Human Development Report 2025: Widening Inequality

Why in the News?

The **United Nations Development Programme** released its **Human Development Report 2025** which appreciated **India** for its **progress** but also warned about **rising inequality**, particularly **income and gender disparities**.

Key Findings of the Report

- **Human Development Index (HDI)**
  - → **Gap** between low- and very high-HDI countries **widened** for the 4th year.
  - → **Top 3:** Iceland, Norway, Switzerland.
  - → **India:** Rank improved to 130/193; HDI rose to 0.685.
- **Inequality Adjusted HDI**
  - → India **loses 30.7%** of human development due to inequality.
  - → **Income distribution**: poorest 40% hold 20.2% while richest 10% hold 25.5%.
- **Multidimensional Poverty Index (MPI)**
  - → **16.4%** of Indians are multidimensionally poor; **4.2%** in severe poverty.
  - → An additional 18.7% are vulnerable to poverty.
- **Gender Inequality Index (GII)**
  - → India ranked **102 /193** countries
  - → India's **female (**aged 15+**) Labour Force Participation Rate (LFPR)** is **35.1% vs male LFPR** is **76.4%.**

Inequality and its Measurement

- **Inequality** Lack of equality in status, rights, and opportunities..
- **Types of inequalities:** Income inequality, social inequality, inequality of opportunities, etc
- **Measurement of Inequality:**
  - → **Gini-Coefficient** Measures income/consumption inequality(degree of concentration) **(0 = perfect equality,** 1 = complete inequality).
    - ◇ Based on the **Lorenz curve:** the more it bows away from the diagonal, the greater the inequality.
  - → **Palma ratio: t**he ratio of total hourly wages of the top 10% to those of the bottom 40%.
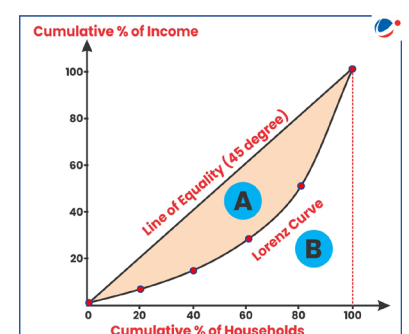
Reasons for persisting Inequality in India

- **Socio-cultural disparities:** based on caste, gender etc
  - → **Gender Pay Gap:** women earn just **18% of the labour income** (World Inequality Report 2022).
  - → **Lack of quality Education and Healthcare** perpetuates **intergenerational poverty:** E.g. High **out-of-pocket-expenditure on health**.
- **Nature of economic development: Jobless growth, problem of 'missing middle'** (low number of small and medium-sized enterprises) in Indian economy, **sectoral imbalances** (agri accounts for 15% of gdp and 42% of employment)

- ➜ **Rural-Urban divides**: Average Monthly Per Capita **Consumption Expenditure** - Rs. 4,122 (rural) vs Rs. 6,996 (urban). (Household Consumption Expenditure Survey 2023-24).
- ⮑ **Labour policies:** Reduced worker bargaining power.
- ⮑ **Tax Bias**: Lower rates on long-term capital gains favor capital over wages.
- ⮑ **Other factors:** Technological divide, conflicts, climate shocks, sovereign debt crisis, COVID-19, governance issues (corruption, resistance to reforms etc.)

Way Forward

- ⮑ **Policy making:** eg. **National Inequality Reduction Plans (NIRPs), progressive taxation** focus locally at village/block levels etc.
- ⮑ **Inclusive Wealth approach**: Expand wealth definitions to include natural, human, and social capital; address caste and gender barriers eg via gender budgeting
- ⮑ **Others:** Gender equity, access to Education and Healthcare, aligning vocational training with market demand Strengthening Social Security Measures etc

Conclusion

A **whole-of-society** approach—uniting **government policies**, **civil society**, and **private-sector responsibility**—must embed **equity** into the **design**, **delivery**, and **evaluation** of every development initiative

6.2. Sample Registration System (SRS) Report 2021

Why in the News?

The Sample Registration System (SRS) Report 2021 was released by the **Registrar General of India (RGI)**

About SRS

- ⮑ **A demographic survey** providing estimates of **birth rate, death rate and other fertility and mortality indicators** at the National and Sub-National levels.
- ⮑ The **SRS sample** is **revised every ten years** based on the latest census frame.

Key Findings of the SRS Report 2021

Parameters and Definitions	Trends highlighted by SRS Report 2021
Crude Birth Rate (CBR) CBR = (Number of live births during the year/ Mid-year population) X 100	⮑ **DECLINED** to **19.3** in 2021 ⮑ **States: Maximum**: Bihar (25.6); **Minimum**: Kerala (12.9)
Population Composition (percentage of total population)	Age group 0-14: **DECLINED** to **24.8%** (2021) ⮑ Economically active population **(15-59 years)**: **INCREASED** to **66.2%** (2021)) ⮑ **Elderly population**: **INCREASED** (60+ years- **9%**; 65+ years- 5.9%) ⮑ **Mean age at effective marriage for Females: INCREASED** to **22.5 years** in 2021
Maternal Mortality Ratio (MMR) Number of maternal deaths during a given period per 100,000 live births during the same period.	⮑ **DECLINED** to **93** in 2019–21. [SDG target of MMR (<=70 by 2030)]
Child Mortality ⮑ **Neonatal Mortality Rate (NMR):** Number of neonatal deaths that from birth to 29 days per 1,000 live births. ⮑ **Infant Mortality Rate (IMR):** Number of infants deaths from birth to the 1 year old per 1,000 live births. ⮑ **Under-five Mortality Rate(U5MR):** Number of deaths of children under 5 years of age per 1,000 live births.	**Neonatal Mortality Rate (NMR)** ⮑ **DECLINED** to **19** in 2021**.** [SDG target of NMR (<=12 by 2030)] ⮑ **States: Lowest**: Kerala; **Highest**: Madhya Pradesh **Infant Mortality Rate (IMR)** ⮑ **DECLINED** to **27** in 2021**.** ⮑ **States: Lowest**: Kerala (6); **Highest**: Madhya Pradesh (41) ⮑ Still, **one in every 37 infants** at the National level **die within one year of life.** **Under-five Mortality Rate(U5MR)** ⮑ **DECLINED** to **31** in 2021**.** [SDG target of U5MR (<=25 by 2030)] ⮑ **States: Lowest**: Kerala; **Highest**: Madhya Pradesh

Sex Ratio at Birth Number of females per 1000 males at birth.	➲ **INCREASED** to **913 in 2019-21**. ➲ **States: Highest**: Kerala (962); **Lowest**: Uttarakhand (852) ➲ **Rural** (2019-21): 912; **Urban** (2019-21): 918
Total Fertility Rate (TFR) Average number of children a woman would have at the end of their reproductive period.	Total Fertility Rate (TFR)= 2.0 ➲ **DECLINED** during 2016-2021 at the National level. ➲ **States: Highest**: Bihar (3.0); **Lowest**: Delhi and West Bengal (1.4) ➲ **Replacement level TFR**, viz. **2.1**, has been attained at the **National** level along with **16 States/UTs**. ➲ **Rural**: 2.2; **Urban**: 1.6
Life-expectancy at birth	➲ **69.8 years** (for period 2017-21), registering a **decline of 0.2 years** from 2016-20. ➲ Life expectancy for males - **68.2 years** and that for females, at **71.6 years**.
Institutional Deliveries	➲ In **2021**, ~**91.1%** (both govt and private hospital) ➲ **Urban** areas: **95.5%; Rural** areas: **89.7%**

Conclusion

Improving maternal and child health ensures India's future demographic dividend. Strengthening schemes, awareness, infrastructure, and service quality is essential for lasting impact

6.3. Urban Poverty

Current Status of Urbanization and Urban Poverty in India

➲ **Urban population rose** to **31.16%** (2011); over 50% projected by 2050.
➲ **Extreme urban poverty** fell from 10.7% to **1.1**%.
➲ Broader **poverty** declined to 17.2%.
➲ **Gini index improved** to 25.5.
➲ Urban **unemployment dropped** to 6.6%.

Difference between urban and rural poverty

➲ **Basic amenities**: Urban poor lack adequate housing and sanitation; rural poor struggle with land tenure security.
➲ **Living conditions**: Urban areas face overcrowding, hygiene problems, disease and crime risk; rural areas lack pucca homes and face caste discrimination.
➲ **Psychological impact**: Urban poverty is more visible—leading **to relative deprivation**, segregation, loneliness (e.g. **Dharavi** beside skyscrapers); rural poverty is culturally institutionalized, tied to **caste/gender norms.**
➲ **Economic context**: Rural economies rely on agriculture; urban economies are diverse, offering more opportunities but making urban poverty more complex and multifaceted.

Reasons for persistence of Urban Poverty

➲ **Lack of Planned Urban Development: eg** Haphazard urbanization, lack of affordable housing projects etc
➲ **Regional disparity in urbanization:** Insufficient development of Tier II and Tier III cities
➲ **Inaccessibility to social security eg** exclusion from govt welfare schemes due to lack of proof of residency.
➲ **Vicious cycle of poverty**: Poverty limits access to **opportunities** for **socio-economic mobility**

Government Initiatives for eliminating Urban Poverty

➲ **One Nation One Ration Card**: Aadhaar-based portable ration cards (includes internal migrants).
➲ **Swachh Bharat Mission-U 2.0**: building household latrines.
➲ **PM Awas Yojna-U**: Provides housing for EWS/LIG/MIG and slum dwellers.
➲ **DAY-NULM**: Urban poor to access employement opportunities.
➲ **PM SVANidhi**: Affordable loans to street vendors.
➲ Others: **AMRUT 2.0** and **Smart Cities Mission**.

Way Forward

➲ **Inclusive urbanization**: Decentralize planning with community input; promote mixed-use zoning and role of women SHG (e.g., **Kudumbashree** (women shg) in slum redevelopment-(kerela)).

➲ **Tier II/III city growth**: For balanced regional development, improve rural infrastructure to curb megacity migration.

➲ **Sustainability**: eg Indore's cleanliness drives under SBM.

➲ **others –** urban poor empowerment, targeted social security etc

Conclusion

By 2050, Indian cities could contribute over **75% of GDP** and about **60% of GHG emissions**, making urban poverty reduction essential for sustainable development, "Viksit Bharat," and $5 trillion economy target.

6.4 Mizoram Achieves Full Functional Literacy

Why in the News

Recently, the CM of Mizoram declared Mizoram a fully literate state (98.2% literacy -PLFS survey 2023 -24), making it the **first state** in India to achieve full functional literacy.

More on the News:

➲ Earlier **Ladakh became the first fully functional literate UT**

➲ Goa was **second such state**.

➲ According to **Ministry of Education** above **95% literacy** rate is Full literacy.

➲ These developments are due to **ULLAS - Nav Bharat Saaksharta Karyakram**

Note* Kerala's **full literacy in 1991** was based on the National Literacy Mission(>90% literacy rate).

Literacy Vs Functional Literacy

➲ **Literacy**: A person aged 7+ who can **read and write with understanding** in any language(office of registrar general of ind).

➲ **Functional literacy**: The ability to **read, write, comprehend, and use written information**—like basic instructions to function effectively daily (eg filling forms , use of technology etc).

Literacy in India according to Periodic Labour Force Survey (PLFS) 2023–24.

➲ **Overall literacy rate (age 7+)**: 80.9%.

➲ **Urban 88.9% vs Rural 77.5%.**

➲ **Male 87.2% vs female 74.6%.**

➲ **Top 5 states –** Mizoram , Lakshadweep , Nagaland , Kerala, Meghalaya.

➲ **Bottom 5 states –**Andhra pradesh (72.6%) ,Bihar , MP , Rajasthan , Jharkhand.

About ULLAS - Nav Bharat Saaksharta Karyakram or New India Literacy Programme (NILP)

➲ **Defined literates:** Learners who can read, write, do basic math, and have digital and financial literacy (not just sign or write their names).

➲ **Type: Centrally Sponsored Scheme** aligning with NEP **2020.**

➲ **Target:** 5 crore learners, (1 crore/year) using**"Online Teaching, Learning and Assessment System (OTLAS)-** computer application (web/mobile app) under ULLAS developed by the **National Informatics Centre (NIC)**

➲ **Duration:** FY2022- 23 to 2026-27.

➲ **Ministry:** Ministry of Education.

➲ **Target Group:** Adults aged **15 and above** who missed formal schooling.

➲ **Components:** Foundational Literacy and Numeracy, Critical Life Skills, Basic Education, Vocational Skills, and Continuing Education.

➲ **Implementation:** Through volunteerism, promoting sense of duty or 'Kartavya Bodh'.

➡ **Samajik Chetna Kendras** are established in schools, community halls, etc., with schools acting as the unit of implementation.

➲ **Regional Languages:** in **DIKSHA Portal and the ULLAS Mobile App/Portal.**

➲ **Assessment & Certification: FLNAT (Foundational Literacy and Numeracy Assessment Test)** is conducted twice a year— or on demand—at local schools.

6.5. News in Shorts

6.5.1. Care Economy and Digitalisation

Since **COVID-19**, the care economy has rapidly **digitalized**—unlocking **new economic and social opportunities** for women

About Care Economy

- ⭢ **As per the UN Women,** the care economy entails the **production and consumption of goods and services** necessary for the **physical, social, mental and emotional well-being of care-dependent groups,** such as children, the elderly, the ill and people with disabilities, as well as healthy, prime working-age adults.
- ⭢ It include both **paid** and **unpaid** work
- ⭢ **Women** perform about **three times more** unpaid care work globally—and nearly **eight** times more in India—which is largely excluded from GDP and policy
- ⭢ The **digital care economy** integrates caregiving with apps, marketplaces, software, and remote monitoring to modernize services

How digitalisation of care economy can benefit women?

- ⭢ **Economic Growth:** As per United Nations data, investment in care economy could create **300 million jobs by 2035, with 70–90% benefiting women**.
  - ⭢ eg, **Urban Company** is one of India's largest employers of female gig workers.
- ⭢ **Gender Equity:** Digitalization brings flexibility, stable income, and upskilling for many women.
- ⭢ **Access & Efficiency:** In India, platforms like **Klay** and **Broomees** offer on-demand babysitting; **Khyaal and Goodfellows** provide eldercare services.

Conclusion

Digitalizing care empowers women and formalizes caregiving—but addressing digital divides, social protection gaps, and bias needs gender-responsive, rights-based strategies

6.5.2. Maternal Mortality Ratio (MMR)

Office of the Registrar General (Ministry of Home Affairs) released Special Bulletin on MMR in India 2019-21**.**

Key Highlights

- ⭢ **India's MMR** dropped to **93** (from 103 in 2017–19).
- ⭢ **Best-Performing States:** Kerala (MMR 20), Telangana (45), Tamil Nadu (49), etc.
- ⭢ **Poor Performance by Empowered Action Group (EAG) States:** Madhya Pradesh (175), Assam (167) and UP (151) still report high MMR.

6.5.3. Initiatives for Ageing with Dignity

The President of India launched initiatives for senior citizens at the '**Ageing with Dignity** - Initiatives for the Welfare of Senior Citizens' event.

Initiatives launched

- ⭢ **Senior Citizen Welfare Portal:** A digital platform to access government schemes, healthcare benefits, and welfare services
- ⭢ **Senior Citizen Homes:** Supported under the Ministry of Social Justice & Empowerment's programme aligned with the Maintenance and Welfare of Parents and Senior Citizens (MWPSC) Act.
- ⭢ **MoU with Brahma Kumaris:** Focuses on promoting emotional balance, mindfulness, and intergenerational bonding.

6.5.4. Global Network of Age-Friendly Cities and Communities (GNAFCC)

Kozhikode city has been honoured with a membership in the **WHO's GNAFCC.**

About GNAFCC

- ⭢ **Established:** 2010
- ⭢ **Members:** 1300 members from 51 countries.
- ⭢ **Aim:** To connect cities, communities and organizations worldwide with the common vision of making **their communities great places to grow older in.**

6.5.5. Global Report on Internal Displacement (GRID) 2025

Released by the **Internal Displacement Monitoring Centre (IDMC)**.

- ⭢ **Internal Displacement (ID)** refers to the **forced movement** of people (**internally displaced people**) within their country .

Key Findings

- ⭢ **Internally displaced people (IDPs) at the end of 2024: 83.4 million** (73.5 million due to conflict and violence and 9.8 million due to disasters)..

India: Internal displacements by **conflict and violence (1,700)** and **Internal displacements by disasters (5.4 millions).**

SCIENCE AND TECHNOLOGY

7.1. Satellite Internet Services

Why in the News?

Airtel and Jio signed a deal with SpaceX to bring Starlink's satellite internet to India.

About Satellite Internet

- ➲ **Definition:** A wireless internet connection provided via communication satellites orbiting Earth.
- ➲ **Difference:** Unlike fiber, cable, or Digital Subscriber Line, it transmits data without wires.
- ➲ **Infrastructure:** Comprises three segments:
  - ➡ **Space Segment:** A constellation of satellites that transmit signals and provide coverage, placed in various orbits as needed.
  - ➡ **Ground Segment:** Includes control networks and gateways connecting satellites to ground networks.
  - ➡ **User Segment:** Communication terminals used by end users.

Various Types of Orbits and Satellite Internet services

		Geostationary Earth orbit (GEO)	Medium Earth orbit (MEO)	Low Earth orbit (LEO)
	Distance from Earth	~35,786km	~2,000km–35,786km	~160km–2,000km
	Latency	Medium latency	Low latency	Very low latency
	Deployment cost	Very high cost setup	Mid-high cost setup	Comparatively low cost setup
	Earth coverage	Very large	Large	Small
	Applications	Weather data, broadcast TV, imagery, low-speed data communication	Communications, defense industry applications, navigation systems such as GPS	Remote sensing, human space flight, data communication
	Players using this orbit	Jio Space Technology Limited (will use a combination of GEO and MEO satellite constellations)		Starlink, OneWeb, Project Kuiper, Telesat

Various prominent Satellite Internet projects in the world

➲ **Project Kuiper:** Launched by **Amazon**.

➲ **Starlink:** Launched by **SpaceX**.

➲ **OneWeb:** Operated by **Eutelsat** (France); has the **second-largest satellite constellation** after SpaceX.

➲ **Qianfan Constellation: China's** planned **LEO satellite mega constellation** by **Shanghai Spacecom Satellite Technology (SSST)**.

Significance of Satellite Internet services

➲ **Digital Inclusion:** Connects **remote and rural areas**; ~**40% of Indians** lack internet access.

➲ **Disaster Connectivity:** Useful at **emergency sites** and on **moving platforms** like planes and ships.

➲ **Digital Economy:** Aids **e-commerce**, **platforms**, and **digital infrastructure**.

➲ **Strategic Autonomy:** Less affected by **network cuts** or **geopolitical risks**.

➲ **Military Use:** E.g., **Starlink services** in the **Russia–Ukraine conflict**.

Issues about Satellite Internet Services

➲ **Concerns for internal security:** NIA suspects use of **satellite phones** in **Pahalgam attack** for contact with **Pakistan**.

➲ **Lack of effective control: Private players** and **borderless network** challenge **regulatory ecosystem**.

➲ **Monopolistic Tendencies: SpaceX** may lead to a **monopolistic market structure**.

➲ **Satellite Latency:** Higher than wired; **LEO systems** like Starlink aim for **25–50 ms**.

➲ **Atmospheric changes: Alumina** from **aluminum burn-up** may cause **ozone depletion** and affect **heat reflection**.

➲ **Licensing and Spectrum Pricing:** Needs **VSAT license**, **Ku/Ka band** pricing under negotiation.

➲ **Other Issues:** Impact of **weather**, **high cost**, **space junk**, **astronomical interference,** etc.

Way forward

➲ **Pilot programs:** In **remote areas** (e.g., **oil fields**, **desert communities**) to build confidence.

➲ **Comprehensive regulatory frameworks:** Clear rules for **licensing**, **data governance**, **spectrum allocation**.

➲ **Collaborating with private operators:** Offer **tax breaks**, **grants** to align with **security** and **economic goals**.

➲ **Hybrid models:** Use both **satellite** and **terrestrial networks**.

7.2. Deepfakes

Why in the News?

The US passed the **"Take It Down Act"** to tackle harmful **deepfakes** online.

What are Deepfakes?

- **About: Video, photo, or audio** manipulated using **AI**, blurring reality and fiction.
- **Technology:** Created using **deep learning**, a subset of **machine learning** and **AI**.
  - Involves **face replacement, expression manipulation, speech synthesis**, and actions not actually done.
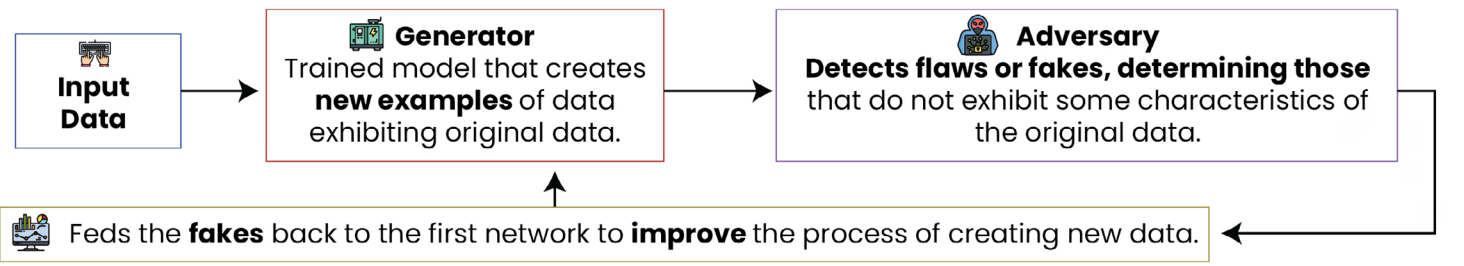

Technologies Involved in Deepfake

Autoencoder: An Artificial Neural Network trained to reconstruct input from a simpler representation.

Generative Adversarial Networks (GANs): Utilizes **two machine learning networks,** namely, **Generator** and **Adversary.**

| Input Data | → | **Generator** Trained model that creates **new examples** of data exhibiting original data. | → | **Adversary** Detects flaws or fakes, determining those that do not exhibit some characteristics of the original data. |

Feds the **fakes** back to the first network to **improve** the process of creating new data.

Regulation

- **India:** No specific **deepfake law**, but existing provisions offer **civil/criminal relief**.
- **Global:**
  - **EU: AI Act** for trustworthy AI.
  - **Italy: Constitution** and **Civil Code** ban unauthorized use of likeness.
  - **USA: 23 states** passed deepfake-related laws (as of Sept 2024).

Potential Applications

Entertainment: E.g., in movies for creative effects

E-commerce: Virtual clothing trials using customer likeness.

Communication: Speech synthesis for multilingual conversations.

Concerns associated with Deepfakes

- **National Security Risk:** May **spark violence**, **hinder investigations**, create **false alibis**.
- **Erodes Trust in Democracy: Fake political content** misleads the public.
- **Victimising Women:** 90–95% of deepfakes involve **non-consensual pornography**.
- **Cyberbullying:** Spreads **rumours**, harms **reputation**.
- **Identity Theft:** Enables **fake IDs**, access to **secure systems**.
- **Costly Computation:** Needs **high investment** for **video detection**.

Initiatives that tackle Deepfakes in India

- **Legal Framework**
  - **Information Technology Act (IT Act), 2000:** Covers AI-generated information.
  - **IT Rules, 2021:** Tackle cyber issues; provide Grievance Appellate Committees for appeals.
- **Institutional**
  - **CERT-In:** Issued deepfake advisory; runs Cyber Swachhta Kendra and leads CSIRT-Fin.
  - **Indian Cyber Crime Coordination Centre (I4C):** Handles cyber-crimes in a coordinated way.
  - **National Cyber Crime Reporting Portal:** Offers Helpline 1930 for reporting.

Way Forward on dealing with the issues of Deepfakes

- ⮕ **Enhanced Regulation:** Proactive **legal framework** focused on **real-world harms**.
- ⮕ **Build Strong Institutions:** Set up **agencies** with clear **safety standards**.
- ⮕ **Technological Advancements:** Use **algorithms**, **metadata**, and tools like **MIT's Detect Fakes**.
- ⮕ **Stakeholders' Collaboration:** Clear **guidelines** and **penalties** by incorporating suggestions from all stakeholders.

7.3. Gene Editing

Why in the News?

A **US research team** developed and delivered a **personalized gene editing therapy** for an infant with a rare **genetic disease**.

More on the News

- ⮕ The infant had **carbamoyl phosphate synthetase 1 (CPS-1) deficiency**, a **genetic metabolic disorder**.
  - ➜ **CPS1 deficiency** leads to toxic **ammonia buildup**, harming the **brain** and **liver**.
- ⮕ Researchers used **CRISPR** to correct the **gene mutation**.

About Gene Editing

- ⮕ **Gene editing** modifies **DNA sequences** by **inserting**, **deleting**, or **changing** bases or adding new genes.
- ⮕ **Steps: Insertion**, **deletion**, and **modification** of the gene of interest.
- ⮕ **Types of Gene Editing:**
  - ➜ **Somatic genome editing:** Alters **non-reproductive cells** (e.g., **skin**, **liver**, **kidney**) and **is not heritable**.
  - ➜ **Germline genome editing:** Alters **reproductive cells** (e.g., **germ cells**, **embryos**) and **can be inherited**.

Techniques used for Gene Editing			
Feature	**ZFNs (Zinc Finger Nucleases)**	**TALENs (Transcription Activator-Like Effector Nucleases)**	**CRISPR-Cas9**
Components	Zinc finger proteins (targeting) + FokI enzyme (cutting)	TALE proteins (targeting) + FokI enzyme (cutting)	Guiding RNA molecules + Cas9 enzyme (cutting)
Function	Zinc finger proteins bind specific DNA sequences; FokI cuts DNA	TALE proteins bind specific DNA sequences; FokI cuts DNA	RNA guides Cas9 to cut specific DNA locations
Key Feature	First of the "genome editing" nucleases	Easier to design and program than ZFNs	Faster, cheaper, more accurate, easier to use

Challenges Associated with Gene-Editing

- ⮕ **Ethical Concerns**
  - ➜ **Embryo Research Ethics:** Using **human embryos** research involves **manipulation,** etc., seen by many as ethically or morally wrong.
  - ➜ **Informed Consent:** In **germline therapy**, the patients affected are embryos and future generations who cannot consent for themselves.
  - ➜ **Justice and Equity:** Risk that **gene editing** benefits only the **wealthy**, widening **healthcare disparities**.
- ⮕ **Safety concerns**
  - ➜ **Safety Issues:** Risks include **off-target effects** and **mosaicism**. Hence, **germline editing** is not yet safe for clinical reproductive use.
  - ➜ **Regulatory Inconsistency:** Uneven **global regulations** may lead to misuse, like **designer babies**.

Gene Editing Revolution
Transforming Medicine Agriculture Materials Environment

💊 Medical

HIV Treatment
ZFN immune modification for HIV resistance
`ZFN`

Cancer Therapy
Altered immune cells attack 3 cancer types
`CRISPA`

Sickle Cell
Corrects oxygen transport mutations
`CRISPR`

Drug Discovery
Speeds up development process
`CRISPR`

🌱 Agriculture

Drought Rice
Pusa DST1 variety with drought tolerance
`DST`

Vitamin A Banana
Bananas with enriched nutrition
`Gene Edit`

Hornless Cattle
Eliminates de-horning pain
`TALENs`

Flu-Resistant Chickens
Decoy' molecules prevent bird flu
`Gene Edit.`

High-Oleic Groundnut
Groundnut with enhanced oil quality varieties
`Gene Edit.`

🧱 Materials

Spider Silk Production
Modified silkworms create steel-stronger silk
`CRISPR`

Sustainable Biofuels
Engineered algae produce fuel lipids
`Genetic Eng`

Drug Delivery
Algae-derived particles for targeted medicine
`Bioeng`

🌍 Environment

Better Biofuel Production
ZFN immune modification for HIV resistance
`ZFN`

Cancer Therapy
Altered immune cells attack 3 cancer types
`CRISPA`

Sickle Cell
Corrects axygen transport mutations
`CRISPR`

Drug Discovery
Speeds up development process
`CRISPR`

Conclusion

Gene editing holds promise for treating **genetic diseases**, enhancing **agriculture**, and solving **environmental issues**. But progress must balance **safety**, **equity**, and **consent**, especially in **germline editing**.

7.6. News in Shorts

7.4.1. ISRO's 101st Mission fails as PSLV Rocket Suffers Malfunction

PSLV-C61/EOS-09 failed during **third stage** due to **technical malfunction**.
- This was **ISRO's 63rd PSLV mission**; PSLV has failed only **twice** before—**1993** and **2017**.

About PSLV-C61/EOS-09 Mission
- **PSLV-C61** aimed to place **EOS-09** in **Sun-Synchronous Polar Orbit (SSPO)**.
  - Launched from **Satish Dhawan Space Centre**, Sriharikota.
- **EOS-09**: Earth observation satellite with **C-band Synthetic Aperture Radar (SAR)**.
  - **Objective**: Provide **all-weather**, **day-night**, **high-resolution remote sensing data**.

About PSLV
- **India's third-generation launch vehicle**, developed by **ISRO**.
- **Four-stage** rocket; first to use **liquid stages**.
- Earned the title "the workhorse of ISRO" for its consistent performance.
- Capable to launch satellites to **LEO**, **Geosynchronous**, and **Geostationary orbits**.
- Enabled key missions such as **Chandrayaan-1 (2008)**, and **Mars Orbiter (2013)**.

7.4.2. World Health Assembly (WHA) Adopted World's First Pandemic Agreement

It is second international agreement under **Article 19** of **WHO Constitution** after **Framework Convention on Tobacco Control, 2003**.
- **Article 19** empowers **WHA** to adopt conventions with **two-thirds vote**.

Key Highlights of the Agreement
- **Pandemic Prevention & Surveillance:** In line with **International Health Regulations (IHR), 2005** to prevent and respond to disease spread.
- **Global Supply Chain and Logistics Network:** Ensures access to **health products** during **public health emergencies**.
- **Sustainable Financing:** A **Coordinating Financial Mechanism** under **IHR** to support implementation.

- **Pathogen Access and Benefit Sharing (PABS):**
  - Drafting through **Intergovernmental Working Group (IGWG)**.
  - Covers rapid sharing of **pathogen data**.
  - Manufacturers to give **WHO 20% real-time production** of **vaccines**, **therapeutics**, and **diagnostics**.
- **Enforcement:** Open for **signature and ratification**; enforced after **60 ratifications**.

Significance of the Agreement

- **Global Solidarity:** Fills **gaps** and **inequities** in **pandemic response**.
- **One Health Approach:** Links **human**, **animal**, and **environmental health**.
- **Whole-of-Government & Society:** Includes **Indigenous** and **local community** coordination.

7.4.3. The 1st State of the World's Animal Health Report

Released by **World Organization for Animal Health (WOAH)**, Paris-based, founded in **1924**.

- Report offers first global overview of **animal health** in a changing world.

Key Findings

- **Shifting Disease Patterns:** Infectious diseases expanding geographically; **47% are zoonotic**. *E.g.,* **Peste des Petits Ruminants** re-emerging in **Europe**.
- **Rising Disease Intensity:** Diseases like **African swine fever**, **avian influenza**, and **FMD** growing in impact.
- **Drivers of Spread: Climate change** and **global trade**.
- **Antimicrobial Resistance (AMR):** By **2050**, risks **food security** for **2 billion people**, may cause **$100 trillion loss**.

Recommendations

- Ensure **equitable access** to **vaccines**, hygiene, and **biosecurity**.
- Invest in **Veterinary Services**, **coordination**, and **surveillance systems**.

7.4.4. Trachoma

India received **WHO Certificate** for eliminating **Trachoma** as a **Public Health Problem** in **2024**.

- 3rd country in **Southeast Asia** after **Nepal** and **Myanmar** eliminate Trachoma.

About Trachoma

- **Cause:** Eye disease by **Chlamydia trachomatis**; a **Neglected Tropical Disease**.
- **Impact:** Leads to **irreversible blindness** due to **corneal damage**.
- **Spread:** Through **personal contact** or **flies**.

7.4.5. Liquid Carbon

Scientists studied **liquid carbon structure** for the first time using **in situ X-ray diffraction**.

About Liquid Carbon

- Difficult to study as it forms only at **~4,500ºC** under **high pressure**, bypassing the **liquid state** at normal pressure.
- **No container** can withstand such conditions; found in **planetary interiors**.
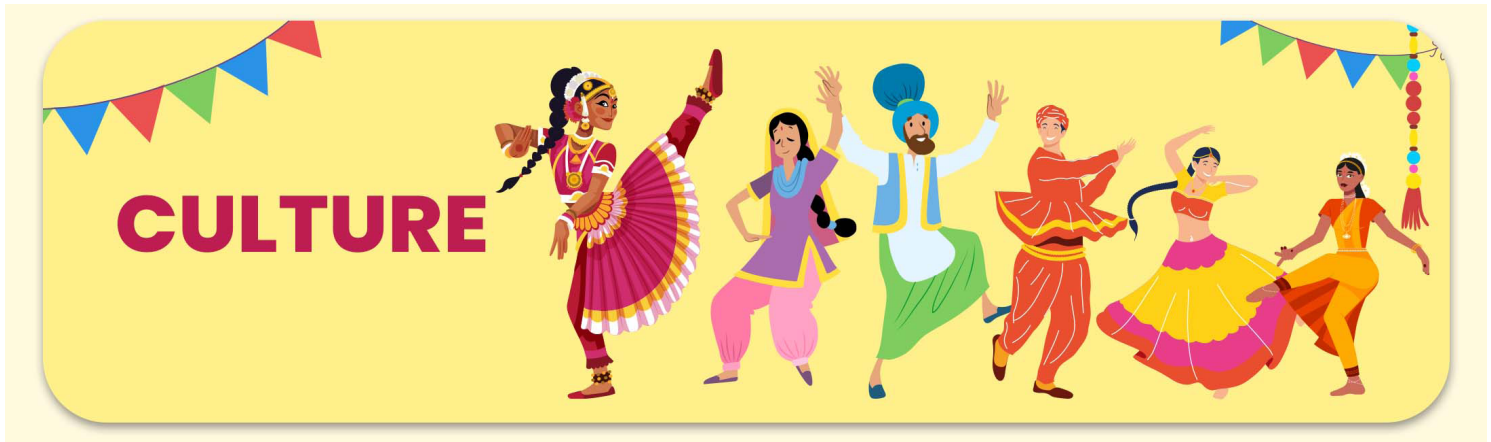- Holds potential in **future technologies**, including **nuclear fusion**.

8.1. Sushruta and Charaka

Why in the News?

Vice-President unveiled Sushruta, Charaka statues, emphasizing their legacy.

About Sushruta:

⮩ Flourished around **600 BCE in ancient Kashi.**
⮩ Disciple of **Divodasa, Gurukul of Dhanwantri.**

Significant Contributions

⮩ **Author of Sushruta Samhita:** Divided into **pūrvārdha** and **uttaratantra**; part of **Ayurvedic Great Trilogy.**
⮩ **Known as "The Father of Surgery":** Described **eight surgical procedures** in detail.
⮩ **First to study human anatomy** using cadavers.
⮩ **"Father of Plastic Surgery":** Innovated early reconstructive techniques.
⮩ **Medical Ethics:** Framed original code at Benares University.

About Charaka

⮩ Lived **2nd BCE–2nd CE in North West India.**
⮩ **Kushan royal physician**, **"father of Indian medicine."**

Significant Contributions

⮩ **Author of Charaka Samhita**
 ➡ Based on Agnivesha Tantra
 ➡ Divided into eight sthanas
 ➡ Foundational Ayurvedic text detailing medicinal plants and therapies.
⮩ **Impact on modern medicine**
 ➡ Introduced Tridosha theory
 ➡ Discussed Ayurvedic medicines still in use
 ➡ Emphasized yog for physical and spiritual well-being.

8.2. News in Shorts

8.2.1. Karni Mata Temple

Prime Minister visits Karni Mata temple in Rajasthan.

About Karni Mata Temple

- Located in **Bikaner district, Rajasthan.**
- Dedicated to **Karni Mata**, **incarnation of Goddess Durga**.
- Built by **Rao Jaitasi** after **victory of Bikaner King over the Mughal King Kumaran**.
- Belongs to **Shakta Sampradaya.**
- Unique for **thousands of** freely roaming rats, yet plague – free.

8.2.2. Gallantry Awards

President conferred **Kirti Chakras and Shaurya Chakras** to the personnel of the Armed Forces, CAPF and State/UT Police.

About Gallantry Awards

- **Wartime: Param Vir, Maha Vir, and Vir Chakra** (est. **1950**).
- **Peacetime: Ashoka, Kirti, Shaurya Chakra**
- **Announced twice yearly**
- Can be awarded **posthumously**.

8.2.3. Major Dhyan Chand Khel Ratna Award

Satwiksairaj Rankireddy & Chirag Shetty received the Major Dhyan Chand Khel Ratna award for achieving World No. 1 ranking and winning Asian Games gold in 2023.

About Award

- **Nodal Ministry:** Ministry of Youth Affairs and Sports
- India's **highest sporting honour.**
- Established in 1991-92, renamed in 2021
- **Recognizes top international performances** over 4 years.
- Includes ₹25 lakh, **Medal** and **certificate.**

8.2.4. Pulitzer Prize

The New York Times won four Pulitzer Prizes and The New Yorker three for journalism in 2024.

About Pulitzer Prize

- Prestigious annual awards by **Columbia University** since 1917.
- Founded by journalist **Joseph Pulitzer**.
- Honors excellence in **journalism**, **letters**, and **music**.

8.2.5. Metre Convention

The Department of Consumer Affairs celebrated **World Metrology Day 2025,** marking **150th** year **of the Metre Convention.**

About Metre Convention

- **Genesis:** Signed in 1875, amended in 1921.
- **Purpose:** Ensuring global metric system unification.
- **Established:** BIPM for universal measurements.
- **Promotes: International metrology collaboration** among its 64 Members, 37 Associate States (**India included**).

ETHICS

9.1. Right to Die with Dignity

Introduction

A **3-year-old Jain girl** died due to **Santhara** (fasting unto death), raising concerns about **informed decision-making**. Also, **France** recently, passed a bill allowing **assisted dying** for those with **incurable illnesses**—highlighting the principle of **Right to Die with Dignity**.

About the Right to Die with Dignity

- **Meaning:** Terminally ill individuals can choose **end-of-life decisions** to avoid prolonged **pain and suffering**.
- **Euthanasia** (means "**good death**") is a mean to realise this right for a terminally ill person.
  - **Active:** Using lethal drugs—**illegal** in India.
  - **Passive:** Withholding life support—**allowed**.
- **Status in India**
  - **2011 – Aruna Shanbaug case: Passive euthanasia** allowed.
  - **2018 – Common Cause case: Article 21** includes **Right to Die with Dignity**; legalised passive euthanasia and **living wills**.

Key Stakeholders and Associated Ethical Issues	
Terminally Ill Patients and Their Families	⮕ **Patients:** Endure **severe pain**, emotional and **financial distress**. ⮕ **Families:** Struggle with **grief** and desire to **ease suffering**.
Healthcare Providers (Doctors, Nurses, Palliative Care Professionals)	Bound by **Hippocratic Oath** to **alleviate suffering**, but face **moral dilemmas** between **autonomy** and preserving life.
Legislators and Policymakers	Must **protect rights** and **prevent misuse** of the **Right to Die with Dignity**.
Society at large	Balances **sanctity of life** with growing emphasis on **personal autonomy** and **dignity**.

Ethical Dilemmas

- **Quality vs Sanctity of Life:** Is life meaningful amid extreme **pain** or **loss of dignity**?
- **Autonomy vs Constitutional Morality:** Can **personal choice** override legal or moral limits?
- **Palliative Care vs Justice:** Should we allow **dignified death** where care fails?
- **Non-maleficence vs Double Effect:** Can doctors relieve pain even if it **shortens life**?

Arguments in Favour	Arguments Against

○ **Quality of Life:** Goes beyond survival—includes **well-being** and **relationships**.
○ **Respect for Autonomy:** Individuals should decide their **end-of-life** choices.
  → *E.g.,* **Bhishma's Iksha Mrityu, Socrates' choice of death**.
○ **Principle of Double Effect:** Doctor many time prescribe drugs with the intention to **relieve pain**, despite knowing that the drugs will shorten the patient's life.
○ **Justice:** When care fails, continued treatment may be **harmful** and **burdensome**.
	○ **Sanctity of Life:** Life is of **intrinsic value**.
	  → *E.g.,* **Ahimsa in Buddhism**.
	○ **Constitutional Morality: Religious freedom** is limited by **Article 25**.
	○ **Palliative Care:** Evolving medicine can manage **suffering** without euthanasia.
	○ **Non-maleficence:** Doctors must **"do no harm"** (Hippocratic Oath).
	○ **Kantian View:** Ending life violates **moral duty**.
	○ **Potential Misuse:** Autonomy may be **abused** for minors or under pressure.

Way Forward

○ **Interpretative Dialogues:** Continuous patient-centered communication.
○ **Effective Regulation:** Limit practice to **hospital settings**, with **2-doctor certification** and full documentation.
○ **Prevent Misuse:** Include **psychological evaluation**, **wait period**, and **counselling**.
○ **Care Ethics Approach:** Emphasize **empathy** for minors and mentally vulnerable.

Conclusion

Modern medicine may **extend life** but not always **relieve suffering**. The **Right to Die with Dignity** calls for a **compassionate** and **well-regulated** approach.

9.2. Ethics of Business Downsizing

Introduction

Companies like **Microsoft**, **Google**, **Amazon**, and **IBM** have laid off around **60,000 employees**, driven by **AI reorganisation**, **automation**, and **management restructuring**. While aimed at **productivity** and **competitiveness**, such **downsizing** raises serious **ethical concerns** for employees and society.

About Business Ethics

○ **Meaning:** Guides **individuals**, **firms**, and **corporate culture** in ethical conduct.
○ **Features:** Based on **trust**, **integrity**, **equity**, **legality**, and **governance**.
○ **Nature:** Beyond legal compliance; rooted in **moral values** and **societal welfare**.
  → **Virtue Ethics:** Focuses on **positive traits** like **honesty** and **responsibility**.
  → *E.g.,* **Infosys** promotes a **Code of Conduct** for ethical decision-making.

Responsibility of a Business towards various stakeholders	
Employees	○ Builds **moral values** and a strong **ethical culture**. → *E.g.,* **Hilton** ranked top in **Great Place to Work (2024)** for ethical practices.
Consumers	○ Prevents **unjust** or **deceptive practices**. → *E.g.,* **Apple's Advanced Data Protection (ADP)** ensures **end-to-end encryption**.
Society	○ Promotes **equitable** and **honest competition**. → *E.g.,* **Ratan Tata**: Business must serve **communities**, not just profits.

Ethical Dilemmas involved in Business Downsizing

○ **Utilitarianism vs Kantian Capitalism:** Downsizing benefits the majority (**utilitarian**), but **Kant** rejects using employees as a means to an end.
○ **Individualism vs CSR: Profit maximization** justifies layoffs (individualist view), but conflicts with **CSR**, which values employee welfare.
○ **Deontological vs Teleological: Duty-based ethics** prioritize moral responsibility, while **consequentialism** focuses only on outcomes.
○ **Ethical Relativism vs Justice: Relativism** allows varying norms, but **justice** requires **fairness for all**.

Way Forward

➲ **Last Resort:** Consider alternatives before layoffs—cut costs, freeze hiring, assess wider impacts.

➲ **Voluntary Layoffs:** Offer **severance** or **career transition** support.

➲ **Business Ethics:** Follow codes promoting **integrity**, **transparency**, and **compassion**. *E.g.,* **Starbucks** offered health insurance to part-time workers (1988).

➲ **Agile Talent Strategy:** Invest in **upskilling** and **career growth**. *E.g.,* **Amazon's Education Benefit Programme**.

➲ **Support Displaced Workers:** Help find new jobs via **networks** and **reskilling**. *E.g.,* **Nokia's Bridge Programme** helped 60% laid-off staff (2014).

Conclusion

Downsizing must be the **last option**, preceded by **upskilling** and **ethical workforce management**. Promote a culture of **good business conduct** through constant **engagement** and **socialisation**.

GOVERNMENT SCHEMES

10.1. Atal Pension Yojana

Why in the News?

APY completed 10 years.

Features

- **Ministry:** Ministry of Finance
- **Launched in:** 2015
- **Implementing Agency:** PFRDA under National Pension System (NPS)
- **Type:** Central Sector Scheme
- **Eligibility:** Bank account holders aged 18–40, not income tax payers; all eligible family members can join.
- **Objectives**: Promote voluntary retirement savings and provide financial security in old age especially for poor and unorganized sector workers.
- **Benefits:** Guaranteed monthly pension of ₹1,000–₹5,000 from age 60; family pension to spouse/nominee in case of death.
- **Payment:** Contributions monthly/quarterly/half-yearly based on age and pension amount.
- **Exit:** At 60 (full pension); before 60 (only in death/illness); voluntary exit with limited benefits.
- **Co-contribution:** Govt. co-contributed for early joiners (2015–2016).
- **Achievements:** 7.66+ crore subscribers by April 2025; ~47% are women.

10.2. Pradhan Mantri Jeevan Jyoti Bima Yojana

Why in the News?

PMJJBY completed 10 years.

Features

- **Ministry:** Ministry of Finance
- **Type:** Central Sector Scheme
- **Nature:** Annual Term life insurance (cover up to age 55)
- **Objectives**: Providing coverage for death due to any cause.
- **Premium:** ₹436/year, auto-debited in one instalment
- **Conditions:** Bank/post office account, consent for auto-debit; only one account per person
- **Eligibility:** Open to all 18–50 yrs age group, including NRIs
- No medical exam required
- Covers all causes of death (accidents covered from day one)
- Pro-rata premiums for mid-year enrolment
- **Coverage:** ₹2 lakh, renewable annually
- **Implementing Agency:** LIC and partnered insurers
- **Impact:** 23+ crore enrolled; 9 lakh claims; 53% women, 74% rural beneficiaries

10.3. Pradhan Mantri Suraksha Bima Yojana

Why in the News?

Completed 10 years.

Features

- ➲ **Ministry:** Ministry of Finance
- ➲ **Type:** Central Sector Scheme
- ➲ **Objectives:** An accident insurance scheme providing coverage for accidental death and disability.
- ➲ **Eligibility:** Citizens (including NRIs) aged 18–70 years
- ➲ **Premium:** ₹20/year, auto-debited
- ➲ **Enrolment Period:** 1st June to 31st May (1-year cover)
- ➲ **Implementing Agency:** Public Sector General Insurance Companies and others via participating banks
- ➲ **Conditions:** Bank/post office account and auto-debit consent
- ➲ **Coverage:** ₹2 lakh for accidental death/total disability; ₹1 lakh for partial disability
- ➲ **Features:** Covers natural calamities; rejoining allowed; digital enrolment via Jan Suraksha Portal
- ➲ **Impact:** 44+ crore enrolled; 50.16% women, 72.24% rural beneficiaries

10.4. National Scheme for Upgradation of Industrial Training Institutes (ITIs)

Why in the News?

Union Cabinet approved Centrally Sponsored Scheme to upgrade ITIs and establish five National Centres of Excellence for Skilling.

Features

- ➲ **Ministry:** Ministry of Skill Development and Entrepreneurship
- ➲ **Type:** Centrally Sponsored Scheme
- ➲ **Objectives:** Meet rising skilled workforce demand
- ➲ **Funding:** ₹60,000 crore over five years (Central: ₹30,000 cr, State: ₹20,000 cr, Industry: ₹10,000 cr); 50% of Central share co-financed by ADB and World Bank.
- ➲ **Revamp ITIs:** Upgrade 1,000 Government ITIs under a hub-and-spoke model and five NSTIs (Bhubaneswar, Chennai, Hyderabad, Kanpur, Ludhiana) to serve as National Centres of Excellence.
- ➲ **Industry Collaboration:** Industry-led SPV model for curriculum, infrastructure, and management.
- ➲ **Financial Flexibility:** Need-based investment for trade-specific and infrastructure needs.
- ➲ **Skill-Industry Alignment:** Bridge gaps between local workforce supply and industry demand, benefiting MSMEs.
- ➲ **Trainer Focus:** Enhance quality through ToT programs in upgraded NSTIs.
- ➲ **Vision Alignment:** Supports Viksit Bharat 2047 for inclusive growth and global competitiveness.

About ITIs: Backbone of vocational training since 1950s, run by state governments.
Centres of Excellence: Sector-specific hubs for training, research, and best practices.

10.5. Credit Guarantee Scheme for Startups (CGSS)

Why in the News?

DPIIT has expanded the Credit Guarantee Scheme for Startups (CGSS) to boost capital mobilization for startups.

Key Features

- **Nodal Ministry:** Ministry of Commerce & Industry
- **Objectives:**
  - → Provides credit guarantee by Member Institutions (MIs) to eligible Startups.
  - → Enables collateral-free debt funding for Startups.
- **Purpose:** Provide credit guarantees for loans to eligible startups.
- **Process:** NCGTC guarantees Member Institutions (that lend to startups, not startups directly.
- **Guarantee Ceiling:** Max ₹20 crore per borrower; no overlap with other guarantee schemes; covers unsecured portion of partially secured loans.
- **Instruments:** Venture debt, working capital, subordinated/mezzanine debt, debentures, convertible debt, and other debt obligations.

Eligibility Criteria

S Startup Eligibility

- ✅ **DPIIT Recognized** Department for Promotion of Industry and Internal Trade
- ✅ **Not in Default** No NPA classification
- ✅ **MI Certified** Member Institution certification

L Lending Member Institutions (MIs)

- **B Scheduled Commercial Banks** & Financial Institutions
- **N NBFCs (Non-Banking Financial Companies)**
  - ⊕ **Rating:** BBB & above (RBI accredited agencies)
  - ⊕ **Minimum networth:** 100 crores
- **A Alternative Investment Funds** SEBI registered

10.6. SHAKTI (Scheme for Harnessing and Allocating Koyala Transparently in India) Policy

Why in the News?

Cabinet Committee on Economic Affairs approved Revised **SHAKTI Policy.**

Features of **Shakti Policy:**

- **Introduced in:** 2017
- **Ministry:** Ministry of Coal
- **Implemented by:** CIL & SCCL
- **Replaces** the 2007 NCDP coal linkage system under Fuel Supply Agreements (FSA).
- **Transitions** from LoA-based to auction/tariff-based bidding mechanisms.
- **Objectives**
  - → Ensure coal availability to thermal power plants through a fair, transparent mechanism
  - → Lower generation costs by providing cheaper domestic coal
  - → Benefits to end consumers
  - → Reduce reliance on imports and strengthen the domestic coal industry
- **Simplified Framework:** Consolidates 8 earlier categories into 2:
  - → *Window-I:* Linkages at notified prices for government-owned power plants.
  - → *Window-II:* Auction-based allocation for all thermal power producers
- **No Mandatory PPAs:** Offers flexibility in power sales under Window-II.
- **Demand-Based Procurement:** Coal allocation for 1 to 25 years based on need.
- **Pithead Plant Promotion:** Encourages plants near coal sources.
- **Import Substitution & Linkage Rationalization:** Reduces coal costs and rail load.
- **Sale of Surplus Power & FSA Flexibility:** Enhances efficiency and market access.
- **Key Beneficiaries:** Power firms, consumers, coal sector, banks, states, and railways.

QUICK FACTS

Topics	Key facts/Data
Caste census	➲ Census – **constitutionally** mandated (union list) ➲ **Statutory provision** – census act 1948 ➲ **First Since Independence**: to collect **caste data (beyond Scheduled Castes and Scheduled Tribes).** ➲ **Since 1961** states are also allowed to conduct their own surveys of OBCs. ➲ **2011-** SECC was also conducted (data was not published).
Private member bill	➲ Bill by a **non-minister.** ➲ **One month notice** to be given to presiding officer. ➲ 1st such bill passed in 1952 ➲ **Only 14 private member bills have become law** till date and the last such bill was passed in 1970.
Provisions related to refugee and deportation	➲ India **has no dedicated refugee legislation** and is **not a signatory to the 1951 Refugee Convention** or its **1967 Protocol.** ➲ **Foreigners Act, 1946** vest the **Central Government** powers to **detain and deport illegal** foreign nationals ➲ **Passport (Entry into India) Act, 1920:** Centre may direct the **removal** of any foreigner **without passport & visa.** ➲ According to **Articles 258(1) and 239(1)** of the Constitution, **States/UTs** are also entrusted with these powers
Free Trade Agreement (FTA)	➲ **Definition**: Deal to reduce/eliminate **tariff** and **non-tariff barriers** between countries/blocs. ➲ FTAs are an **exception** to WTO's **Most Favoured Nation** principle ➲ **India's Status**: Signed **13 FTAs** in 5 years (e.g., **UAE**, **Australia**, **Mauritius** – SBI, 2024).
China–Pakistan Economic Corridor (CPEC)	➲ Project under **China's BRI** ➲ **Route**: Corridor links **Gwadar Port** (Pakistan) to **Kashgar** (Xinjiang, China) via roads, railways, and pipelines.

United Nations Peace keeping	➲ **Origin**: Began in **1948** with **United Nations Truce Supervision Organization (UNTSO)** in the Middle East.
	➲ **Mandate**: Authorized by **UNSC resolutions**; funded by the **UNGA.**
	➲ **Recognition**: **Nobel Peace Prize** in **1988**.
	➲ **Doctrines**:
	  ➜ **Capstone Doctrine** – Sets peacekeeping principles and training norms.
	  ➜ **Responsibility to Protect (R2P) (2005)** – Global pledge to prevent **genocide, war crimes**, and **ethnic cleansing**.

New Development Bank (NDB)	⮕ **Established** in **2015** by **BRICS** (Brazil, Russia, India, China, South Africa) ⮕ **Members**: 9 – BRICS + **Bangladesh**, **UAE**, **Egypt**, and **Algeria** ➜ The membership is open to all **UN members**. ⮕ **Voting Power**: Founders must retain at least **55%** of total votes ⮕ **HQ**: Shanghai, China
International Atomic Energy Agency (IAEA)	⮕ **Established** in **1957** as an autonomous body under the **UN** ⮕ **Members**: **180** (including **India**) ⮕ **Recognition**: **Nobel Peace Prize (2005)** for peaceful nuclear promotion & safety ⮕ **HQ**: Vienna, Austria
Northeast As 'Frontrunner Of Growth'	⮕ **Textiles/Handlooms:** 53% looms, 78.5% traditional garments. ⮕ **Renewable Energy:** 60 GW hydro (40% of India). ⮕ **Infrastructure:** Dhola-Sadiya, Bogibeel bridges; Jogighopa IWT terminal. ⮕ **Tourism:** Kaziranga, Manas; Swadesh Darshan & PRASAD. ⮕ **Education & Health:** Young demography; phytopharma potential. ⮕ **Sports:** Polo, Thang-ta; Stadiums in Assam & Manipur. ⮕ **Agriculture:** 70% farmers; organic, high-value crops.

Vizhinjam International Seaport	⮕ Near Suez route, deep natural draft
	⮕ Capacity for 18,000+ TEU
	⮕ PPP under landlord model (DBFOT)
	⮕ **Challenges:**
	  ➜ High costs, land scarcity, weak tax incentives
	  ➜ Customs delays; 5-hour deviation vs 1-hour Colombo

National Road Safety Board	⮕ **Increase in Road accidents victims:** More than 1.5 lakh people killed, young people (18–45 years) made up 66.5 percent of victims. ⮕ **Increase in Mortality:** 177 percent increase in deaths (2005–22), contrasting with the global trend of road deaths decline. ⮕ **National Highways and Expressways:** Accounted for 39.2 percent of road accidents and 36.2 percent of deaths.
District Mineral Foundation (DMF)	**Constitutional Framework** ⮕ **Entry 54 of the Union List**: Regulation of mines and mineral development as declared by Parliament by law in the public interest. ⮕ **Entry 23 of the State List**: Regulation of mines and mineral development subject to the provisions of the Union List. **Minor Mineral Authority** ⮕ **Central Government**: Has the authority to notify any mineral as "minor mineral" via official notification. ⮕ **State Government**: Is empowered to make rules for grant of concessions related to minor minerals within their territories.
India's New Security Doctrine	⮕ Shift from "**strategic restraint" to "decisive retaliation**" against terror (e.g., Operation Sindoor). ⮕ **No tolerance for nuclear blackmail**; strikes on Pak mainland terror hubs. ⮕ **Treats terror sponsors (states)** as equal to terrorists (e.g., targeting Punjab/Bahawalpur). ⮕ **Integrated tech-driven response** (drones, BMD, economic tools like IWT suspension).
Defense Technology in Operation Sindoor	⮕ **Multi-layered air defense**: S-400 (400km range), Akash-NG (70km), Barak-8 (100km), D4 anti-drone. ⮕ **IACCS integrated 500km-range radars** (Swordfish, AWACS) for real-time airspace monitoring. ⮕ **Indigenous systems:** BrahMos (290km, Mach 3), NavIC (military L5-band encryption). ⮕ **Rafale's SCALP (450km) & Meteor** (BVRAAM) for precision strikes.

Social Media Influencers & National Security	➲ **OSA & BNS Section 152** used against influencers for espionage/sovereignty threats. ➲ **Misuse for psy-ops** (China's Uyghur propaganda, Pro-Khalistani SFJ accounts). ➲ **IT Rules 2021**: 36-hr unlawful content removal, traceability of originators. ➲ **PIB Fact Check Unit** counters fake news; CAPFs monitor border-state social media.
India's Diplomatic Outreach Against State-Sponsored Terror	➲ **Multi-party delegations to 30+ nations** reframed Kashmir as internal, not bilateral. ➲ **OIC support** (Indonesia/Egypt blocked Pak move); **UN Art. 51 legitimized self-defense**. ➲ **Hurdles:** Pak's UNSC Taliban Sanctions Committee role, IMF loans ($1B). ➲ **Re-hyphenation risk** (US mediation offers) distracts from terror-state narrative.
Brahmos Aerospace Testing Facility	➲ **BrahMos**: Supersonic (Mach 3), 290km range, land/sea/air launch, Philippines' 1st buyer. ➲ **BrahMos-NG**: Lighter, smarter; BrahMos-II hypersonic (Mach 5+) in development. ➲ **JV with Russia (NPOM)**; 200+ Indian firms in supply chain (Make in India).
Golden Dome (US Missile Defense)	➲ Space-ground system vs hypersonic threats (integrates THAAD, Aegis, GMD). ➲ Criticized for weaponizing space, violating Outer Space Treaty (1967). ➲ Contrasts with India's S-400 (400km), Israel's Iron Dome (short-range).
Naxalism	➲ **SAMADHAN doctrine:** Security (CAPFs), development (3-C connectivity), outreach (Civic Action Program). ➲ Red Corridor shrunk from **96 to 45 districts (2010-2023).**
Crypto currency-Hawala Nexus	➲ SC likened crypto to **"refined hawala"**; lacks regulatory framework. ➲ **ED cases** (e.g., ₹1,300cr routed via crypto-shell-hawala chains).
Himalayan Mountain System Ecology	➲ It is the **youngest and highest fold mountain** range in the world. ➲ **The Himalayan Mountain System extends across five countries:** India, Nepal, Bhutan, China, and Pakistan. ➲ **Important glaciers**: Gangotri Glacier (Bhagirathi), Bandar Poonch Glacier (Yamunotri Glacier at Bandarpuch peak), Alakapuri Glacier (Alaknanda) etc. ➲ **The Indian Himalayan System:** Spread across 13 states and UTs, **stretching across 2500 km**.
Six New Sites Join FAO's GIAHS	➲ **Globally Important Agricultural Heritage Systems (GIAHS)** are agroecosystems **inhabited by communities that live in an intricate relationship** with their territory. ➲ There are **95 GIAHS sites in 28 countries**, including Saffron Heritage of Kashmir, Koraput Traditional Agriculture (Odisha), Kuttanad Below Sea Level Farming System (Kerala).
Supreme Court Strikes Down Retrospective Environmental Clearances	➲ EIA notification 2006 was designed to ensure that **developmental projects are assessed for their potential environmental impacts before approval.** ➲ **It categorised the projects in 2 categories:** ➡ **Category A: National Level Appraisal:** Require prior EC from the **Central Government in the MoEFCC.** ➡ **Category B: State Level Appraisal:** Require prior EC from the State/UT **Environment Impact Assessment Authority (SEIAA).**
Global Methane Tracker 2025	➲ Global Methane Tracker 2025 has been released by **the International Energy Agency (IEA).** **Key findings** ➲ Methane (greenhouse gas) is responsible for around **30% of the rise in global temperatures since the Industrial Revolution.** ➲ The energy sector accounts for **more than 35% of methane emissions** from human activity.
Human development report 2025	➲ **India: Rank rose** from 133 (2022) to 130/193 (2023). ➲ **HDI improved** from 0.676 to 0.685 now in **the medium development category** ➲ India **loses 30.7%** of human development due to inequality. ➲ **Income distribution**: poorest 40% hold 20.2% while richest 10% hold 25.5%. ➲ **16.4% of Indians are multidimensionally poor; 4.2% in severe poverty.** ➲ **Gender Inequality Index (GII):** India ranked **102 /193** countries ➲ India's **female (**aged 15+) LFPR is **35.1% vs male LFPR** is **76.4%.**

Sample registration system 2021	➲ Released by the **Registrar General of India (RGI) (revised every 10 year)** ➲ Crude birth rate – declined to 19.3 in 2021 ➲ Population of elderly and economically active people increased while of 0-14 age group 's declined ➲ MMR(93), NNM, IMR (27),TFR, Life expectancy declined while sex ration at birth increased Institutional delivery -91%
Urban poverty	➲ Odisha launched **sahyog initiative** ➲ Urban population in india – 31.16% ➲ India's **consumption-based Gini index** improved to **25.5**
Mizoram's achieve full functional literacy (1ˢᵗ state)	➲ Ladhakh is 1ˢᵗ such UT ➲ **Ministry of Education-** above **95% literacy** rate is Full literacy ➲ **India's Overall literacy rate (age 7+)**: 80.9%. with urban areas and male performing better than rural areas and females ➲ **Top state– Mizoram and Bottom state -Andhra pradesh** **ULLAS -New India Literacy Programme (NILP)** ➲ **Type –** centrally sponsored scheme ➲ **Ministry –** ministry of education ➲ **Target group- aged 15+**
Deepfakes	➲ **About**: AI-generated videos, photos, or audio that **blur reality and fiction** ➲ **Technology**: Based on **deep learning**, part of **machine learning** and **AI** ➲ **Techniques**: **Face replacement**, **expression manipulation**, **speech synthesis**, and **fake actions**
Gene Editing	➲ **About**: Modifies **DNA sequences** by **inserting**, **deleting**, or **changing bases**, or by **adding new genes**. ➲ **Steps**: **Insertion**, **deletion**, and **modification** of the **gene of interest**. ➲ **Types of Gene Editing**: **Somatic genome editing** and **Germline genome editing** . ➲ **Techniques Used**: **ZFNs** – Zinc Finger Nucleases; **TALENs** – Transcription Activator-Like Effector Nucleases; **CRISPR-Cas9.**
PSLV	➲ India's **third-generation** launch vehicle, developed by **ISRO**. ➲ Known as the **"workhorse of ISRO."** ➲ **Capabilities**: Can deploy payloads to **LEO**, **GSO**, and **GEO**. ➲ **Enabled Missions**: **Chandrayaan-1** (2008) and **Mars Orbiter** (2013)
Sushruta	➲ Father of Surgery & Plastic Surgery; Cadaver dissection; *Sushruta Samhita* (2 parts); Ethics framed at Benares.
Charaka	➲ Royal physician; *Charaka Samhita* based on Agnivesha Tantra; Introduced Tridosha; Emphasis on yoga.
Karni Mata Temple	➲ Bikaner, Rajasthan; Goddess Durga incarnation; Known for sacred rats; Shakta Sampradaya.

ACTIVITIES

12.1. MCQS

1. **Which one of the following is false regarding the Census?**
   (a) Caste data (beyond Scheduled Castes and Scheduled Tribes) was never collected in the history of India
   (b) Census is constitutionally mandated unlike surveys
   (c) The Registrar General and Census Commissioner (RG&CC) is authorized to design the census proforma.
   (d) It is placed under union list of 7th schedule

2. **Consider the following statements regarding the private member bills.**
   1. 2 months' notice is to be given to presiding officer before its introduction
   2. 1st such bill was passed in 1970
   3. Lok Sabha allots last two-and-a-half hours every Friday for discussion.
   4. Rajya Sabha allots two and a half hours on every alternate Friday.

   Which of the above statements are incorrect?
   (a) 1 and 2
   (b) 2 and 3
   (c) 3 and 4
   (d) 4 and 1

3. **Consider the following statements regarding India's refugee and deportation policy**
   1. India is a signatory to the 1951 Refugee Convention or its 1967 Protocol
   2. Foreigners Act, 1946 vest the state Government powers to detain and deport illegal foreign nationals

   Which of the above statements are correct?
   (a) 1 only
   (b) 2 only
   (c) Both 1 and 2
   (d) Neither 1 nor 2

4. **'Belt and Road Initiative' is sometimes mentioned in the news, it is launched by**
   (a) United States
   (b) France
   (c) European Union
   (d) China

5. **The IMF and World Bank are collectively known as:**
   (a) Washington Consensus Institutions
   (b) Bretton Woods Institutions
   (c) G20 Financial Arms
   (d) New York Accord Agencies

6. **The New Development Bank was established by which grouping of countries?**
   (a) G7
   (b) ASEAN
   (c) BRICS
   (d) SAARC

7. **Which of the following correctly identifies the *EAST* vision as highlighted during the Rising North East Summit 2025?**
   (a) Energize, Accelerate, Sustain, Transform
   (b) Empower, Act, Strengthen, Transform
   (c) Enhance, Aspire, Strengthen, Thrive
   (d) Encourage, Assess, Synergize, Transcend

8. **With reference to Vizhinjam International Seaport, which of the following statements is/are correct?**
   1. It is developed under the landlord model with DBFOT basis.
   2. It is India's first shallow-draft transshipment port.
   3. It lies on the main shipping route connecting Europe and the Far East.

   Select the correct answer using the code below:
   (a) 1 and 2 only
   (b) 2 and 3 only
   (c) 1 and 3 only
   (d) 1, 2 and 3

9. Consider the following statements regarding India's Consider the following statements regarding India's anti-drone systems and air defense equipment:
    1. The D4 system developed by DRDO and BEL uses a dual-layered kill mechanism, including a Laser Directed Energy Weapon for hard kill and RF jamming for soft kill.
    2. MANPADS like the Igla-S are portable air-defense systems that can engage low-altitude aerial threats but require a crew of at least three persons to operate.
    3. The Zu-23 mm system is a radar-guided, self-propelled anti-aircraft gun with a range of up to 4 km, primarily used against ground targets.
    4. The L/70 Anti-Aircraft Gun, upgraded with electro-optical sensors, is capable of auto-tracking targets and has a firing rate of over 200 rounds per minute.

    Which of the statements given above are correct?

    (a) 1 and 2 only
    (b) 1 and 4 only
    (c) 2 and 3 only
    (d) 3 and 4 only

10. Consider the following statements regarding the BrahMos missile and Defence Industrial Corridors in India:
    1. The BrahMos missile, developed jointly by India and Russia, is a supersonic cruise missile with a maximum speed of 3 Mach and an operational range of 290 km.
    2. The Uttar Pradesh Defence Industrial Corridor includes six nodes, with Lucknow and Jhansi being key hubs, while the Tamil Nadu Corridor is centered around Chennai and Coimbatore.
    3. The BrahMos-NG (Next Generation) is a hypersonic missile (Mach 5+) under development, while BrahMos-II will be a lighter and smaller variant of the existing missile.
    4. The Philippines is the first country to import BrahMos missiles, marking a significant milestone in India's defence exports.

    Which of the statements given above are correct?

    (a) 1, 2 and 4 only
    (b) 1 and 3 only
    (c) 2, 3 and 4 only
    (d) 1, 2, 3 and 4

11. Consider the following statements about the Rotterdam Convention:
    1. India acceded to the Convention in 2006.
    2. It entered into force in 2004.
    3. It creates legally binding obligations for Prior Informed Consent (PIC) procedure.

    Which of the statements given above are correct?

    (a) 1, 2 and 3 only
    (b) 2 and 3 only
    (c) 1 and 3 only
    (d) 1 and 2 only

12. Which of the following pairs is/are correctly matched regarding India's research stations maintained by NCPOR?
    1. Maitri – Arctic
    2. Himadri - Antarctica
    3. Himansh - Himalayas
    4. Bharati - Arctic

    Select the correct answer using the code given below:

    (a) 1, 2 and 3 only
    (b) 3 and 4 only
    (c) 2, 3 and 4 only
    (d) 1, 2, 3 and 4

13. With reference to the Asiatic Lion (Panthera leo persica), consider the following statements:
    1. They are concentrated in Gir National Park and Wildlife Sanctuary (Gujarat).
    2. It is listed in Schedule I of the Wildlife (Protection) Act, 1972 and Appendix II of CITES.
    3. The species exhibits a distinctive longitudinal skin fold along its belly.
    4. Barda Wildlife Sanctuary has been identified as an additional habitat for its conservation.

    Which of the statements given above are correct?

    (a) 1 and 2 only
    (b) 1, 3 and 4 only
    (c) 2, 3 and 4 only
    (d) 1, 2, 3 and 4

14. Which of the following is NOT an indicator used in calculating the Human Development Index (HDI)?
    (a) Life expectancy at birth
    (b) Expected years of schooling
    (c) Gross National Income (GNI) per capita (PPP)
    (d) Infant mortality rate

15. Recently sample registration survey was released consisting key demographic details. Which of the following is incorrect according to the survey?
    (a) Maternal Mortality Ration has declined to achieve the SDG target
    (b) Infant Mortality Ration also registered a decline
    (c) Institutional deliveries crossed 90% mark
    (d) Total fertility Rate was below the replacement level fertility rate.

16. What is Cas9 protein that is often mentioned in news?
    (a) A molecular scissors used in targeted gene editing
    (b) A biosensor used in the accurate detection of pathogens in patients
    (c) A gene that makes plants pest-resistant
    (d) A herbicidal substance synthesized in genetically modified crops

17. Consider the following statements about the capabilities of PSLV:
    1. PSLV can launch satellites only into Low Earth Orbit (LEO).
    2. It has been used in interplanetary missions like the Mars Orbiter Mission.

    Which of the above statements is/are correct?

    (a) 1 Only
    (b) 2 only
    (c) Both 1 and 2
    (d) Neither 1 nor 2

18. Consider the following statements about Liquid carbon:
    1. Liquid carbon naturally exists in planetary interiors due to extreme conditions.
    2. It is easily stored and handled using specialized laboratory containers.

    Which of the above statements is/are correct?

    (a) 1 only
    (b) 2 only
    (c) Both 1 and 2
    (d) Neither 1 nor 2

19. With reference to Sushruta, consider the following statements:
    1. He is considered the Father of Plastic Surgery.
    2. He was the royal physician during the Mauryan dynasty.
    3. His text *Sushruta Samhita* is part of the Ayurvedic Great Trilogy.
    4. He studied human anatomy by observing live surgeries.

    Which of the above are correct?

    (a) 1 and 2 only
    (b) 1 and 3 only
    (c) 1, 3 and 4 only
    (d) 2, 3 and 4 only

20. The term "Tridosha" in Ayurvedic philosophy is most closely associated with:
    (a) Sushruta Samhita
    (b) Ashtanga Hridaya
    (c) Charaka Samhita
    (d) Bhava Prakasha

12.2. True/False Statements

1. India has dedicated refugee legislation. (T/F)

2. Admission of private member's bill depends on the Speaker/Chairman's discretionary power to admit or reject bills.(T/F)

3. FTAs are exceptions to the WTO's Most Favoured Nation (MFN) principle. (T/F)

4. The NPT (Non-Proliferation Treaty) has been signed by India, Israel, and Pakistan. (T/F)

5. India supports the extension of CPEC to Afghanistan for better regional connectivity. (T/F)

6. The Current Weekly Status (CWS) under the PLFS considers a person employed if they have worked at least 4 hours during any day of the reference week. (T/F)

7. The Bharat NCAP star rating system has been introduced in India to grade the road conditions of National Highways. (T/F)

8. The Barak-8 Missile Defence System has a naval version with a 150 km range and a land version with a 100 km range. (T/F)

9. The Akashteer system, developed by BEL, is designed to manually track and engage enemy aircraft while operating independently of radar systems and sensors. (T/F)

10. The NavIC (Navigation with Indian Constellation) system, developed by ISRO, provides Position, Velocity, and Timing (PVT) services within India's landmass and does not include any encrypted signals for military use. (T/F)

11. Operation Olivia was initiated in 1980s by the Indian Coast Guard and conducted every year from November to May. (T/F)

12. E-methanol (or electro-methanol) is a low-carbon energy produced by combining green hydrogen with captured carbon dioxide. (T/F)

13. Mizoram has become the first Indian state to achieve full functional literacy acording to Ministry of Education. (T/F)

14. Satellite internet uses fiber-optic cables to transmit data to remote locations. (T/F)

15. Deepfakes are created using AI technologies such as deep learning. (T/F)

16. Germline genome editing is genetic modification of reproductive cells or embryos that creates changes which can potentially be passed down to future generations. (T/F)

17. Charaka Samhita was derived from the Agnivesha Tantra. (T/F)

18. Karni Mata Temple is associated with Vaishnavism and located in Jodhpur, Rajasthan. (T/F)

19. The PM Jeevan Jyoti Bima Yojana covers only accidental deaths. (T/F)

20. Under the Credit Guarantee Scheme for Startups (CGSS), the guarantee is given directly to startups. (T/F)

12.3. Mains Practice Questions

1. Private Members' Bills (PMBs) reflect the spirit of participatory democracy, yet their effectiveness is increasingly constrained. Discuss the reasons for the declining space for PMBs in India's parliamentary process. Suggest measures to revitalize their relevance. (10 Marks / 150 words)

2. Critically examine the strategic importance of the India–UK Free Trade Agreement in shaping India's future trade diplomacy. (10 Marks / 150 words)

3. Discuss the implications of extending the China–Pakistan Economic Corridor (CPEC) to Afghanistan for India's regional strategy. (10 Marks / 150 words)

4. India aims to become a major transshipment hub through ports like Vizhinjam. Analyze the opportunities and challenges associated with this goal. (10 Marks / 150 words)

5. Examine the role of social media influencers in posing threats to national security. Discuss the legal and policy measures taken by India to counter such threats." (10 Marks, 150 Words)

6. "Evaluate India's strategy against Left Wing Extremism (LWE) and the challenges in eradicating it by 2026." (10 Marks, 150 Words)

7. Deepfakes are a growing threat to individual dignity and national security. Examine the risks and India's preparedness to counter them. (10 Marks / 150 words)

8. Discuss the scientific and strategic relevance of PSLV in India's space programme. (10 Marks / 150 words)

9. "Ancient Indian scientific thought contributed deeply to global knowledge systems." Evaluate in context of Sushruta and Charaka. (10 Marks / 150 words)

10. Discuss the significance of Atal Pension Yojana in promoting financial inclusion and old-age security in India. Also evaluate the challenges it faces. (10 Marks / 150 words)

11. The Biological Diversity (Access and Benefit Sharing) Regulation, 2025 marks a significant reform in India's biodiversity governance. Critically examine its key features and the challenges associated with its implementation. Also, suggest a way forward to ensure equitable and effective benefit-sharing. (15 Marks / 250 words)

12. The Himalayas are not only the climatic and ecological lifeline of South Asia but also among the most vulnerable ecosystems globally." Discuss the ecological significance of the Himalayan Mountain system and highlight the major threats to it. Also examine India's and global initiatives to conserve this fragile ecosystem. (15 Marks / 250 words)

13. Atoms for Peace and Development—in light of this motto, evaluate the role of the IAEA in balancing nuclear energy promotion with non-proliferation. How relevant is this role in the evolving geopolitical context? (15 Marks / 250 words)

14. Discuss the strategic and economic potential of the North-Eastern Region (NER) in India's growth story. Also, highlight the key challenges impeding its development. (15 Marks / 250 words)

15. "Analyze India's global diplomatic outreach following the Pahalgam terror attack and Operation Sindoor. Discuss its effectiveness in countering Pakistan-sponsored terrorism, along with the key challenges faced in this endeavor." (15 Marks, 250 Words)

16. Urban flooding has emerged as a recurring and intensifying crisis in Indian cities, largely due to both natural and anthropogenic factors. Critically examine the causes and challenges of urban flooding in India." (15 Marks / 250 words)

17. Urban poverty in India remains a challenge despite growth. Discuss the key factors driving urban poverty, mention major government initiatives addressing it, and suggest a way forward for inclusive urban welfare."(15 marker 250 words)

18. Satellite internet services are shaping the future of digital connectivity in India. Discuss their significance and key regulatory challenges. (15 Marks / 250 words)

19. Discuss the potential and challenges of gene editing technology in the context of healthcare and bioethics. How can regulation ensure responsible innovation in this field? (15 Marks / 250 words)

20. Discuss the contributions of Sushruta and Charaka in the development of Ayurveda and their relevance in modern medicine. (15 Marks / 250 words)

12.4. Ethics Case Studies

1. You have been recently appointed to the position of Chief Medical Officer in a remote district. You encounter the case of a woman who had recently been diagnosed with cervical tumor and had spent most of her life abused by her drunkard husband. Her tumor has reached last stage of its severity causing excruciating pain and helplessness. Even her family is not very considerate about her well-being. Under such circumstances, she expressed her desires for medically assisted dying. However, the people of the area are highly religious and if a word of such an act spread, then there could be an unrest. The situation has put you into a difficult position where on one hand is the suffering of a helpless woman while on the other hand is the issue of civil unrest.

   Based on the above case study, answer the following questions:

   1. Mention some arguments in favor and in against on subjecting the woman to medically assisted death.
   2. What are the key ethical dilemmas involved under such situations?
   3. What is the legal status of the right to die with dignity in India? How does the Jain religious practice of Santhara aim to promote this right?

2. You are currently working as a CEO of an e-commerce firm. With the advent of automation, your company has automated a number of operations to AI-enabled technologies. This has caused huge expenditure on one hand while on the other hand, there are employees whose work has been rendered redundant. The board of the company has therefore decided to go for downsizing causing lay off of around 250 employees. You have been tasked to communicate the news with the selected employees, some of them having a great personal and professional rapport with you.

    Based on the above case study, answer the following questions:

    1. Identify the ethical dilemmas faced by you in the above case.
    2. What are the key responsibilities of a business towards various stakeholders?
    3. Suggest measures that you can recommend to the company's board to be taken before going for downsizing.

ANSWERS AND EXPLANATION
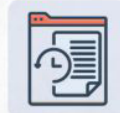
13.1. MCQs Answer and Explanation

1. **Answer: A**
   Explanation
   History of caste census
   - **Pre independence –**Regularly caste data was collected from 1881 to 1941, but 1941 data couldn't publish (world war).
   - **Post-independence (1951) -** Discontinued caste enumeration **except for SC and ST.**
   - **Since 1961 – states** could conduct their own survey of **OBCs**

2. **Answer –A**
   Explanation
   - **Statement 1 is not correct:** One month of notice is to be given to the presiding officer of the house before its introduction. If selected then
   - **Statement 3 and 4 are correct:** Lok Sabha allots last two-and-a-half hours every Friday for discussion. Rajya Sabha allots two and a half hours on every alternate Friday.
   - **Statement 2 is not correct:** The **first such bill** passed was the Muslim wakfs bill, 1952 (introduced by Syed Mohammed Ahmad Kasmi)

3. **Answer: D**
   - **Explanation**: India has not signed the convention and protocol and Foreigners Act, 1946 vest the central Government powers to detain and deport illegal foreign nationals.

4. **Answer: D**
   Explanation:
   About Belt and Road Initiative (BRI)
   - Also known as **One Belt One Road (OBOR)**.
   - Launched by China in **2013** to enhance connectivity and cooperation across continents.
   - Two main components:
     ◇ **Silk Road Economic Belt (the "Belt")**: Links China to Central & South Asia, then to Europe.
     ◇ **New Maritime Silk Road (the "Road")**: Connects China to Southeast Asia, Gulf, East/ North Africa, and Europe.

5. **Answer: B**
   Explanation
   About the IMF
   - Established at the United Nations Monetary and Financial Conference, 1944, also known as the **Bretton Woods Conference**, along with the World Bank.
   - Thus, IMF and World Bank are therefore collectively called **Bretton Woods Institutions**.

6. **Answer: C**
   Explanation
   About New Development Bank (NDB)
   - Established in **2015** by **BRICS** – Brazil, Russia, India, China, and South Africa.
   - Its primary aim is to mobilize funds for **infrastructure and sustainable development** in emerging markets and developing countries (EMDCs).

7. **Answer: B**

8. **Answer: C**
   Explanation: Vizhinjam is a **deep-draft** port.

9. **Answer: B**
   Explanation:
   - **Statement 1 (Correct):** D4 uses both hard kill (laser DEW) and soft kill (RF/GPS jamming) with radar/IR tracking.
   - **Statement 2 (Incorrect):** MANPADS like Igla-S are operated by 1–2 persons, not 3.
   - **Statement 3 (Incorrect):** Zu-23 is a twin-barrel, non-radar, non-self-propelled AA gun with ~2.5 km range.
   - **Statement 4 (Correct):** L/70 (40mm) auto-tracks, fires 240–330 rpm, ~4 km range.

10. **Answer: A**
    Explanation:
    - **Statement 1 (Correct):** BrahMos is supersonic

(Mach 2–3), 290 km range, extendable to 800 km (post-MTCR).

➲ **Statement 2 (Correct):**
   o UP: Agra, Aligarh, Chitrakoot, Jhansi, Kanpur, Lucknow.
   o TN: Chennai, Coimbatore, Hosur, Salem, Tiruchirappalli.

➲ **Statement 3 (Incorrect):** BrahMos-NG is smaller, not hypersonic; BrahMos-II (Mach 5+) is hypersonic.

➲ **Statement 4 (Correct):** Philippines became the first buyer in 2022 ($375 million deal).

11. **Answer: A**

    Explanation

    ➲ **Genesis:** Rotterdam Convention on **Prior Informed Consent Procedures (PIC)** entered into force in 2004. India acceded to the Convention in 2006.

    ➲ **Procedure:** Creates legally binding obligations **for the PIC procedure** by requiring exporters to share information about banned or restricted substances to promote informed decisions.

12. **Answer: B**

    ➲ **Explanation: Research in the Polar and Southern Ocean realms:** NCPOR maintains India's research stations in Antarctica (Maitri and Bharati), the Arctic (Himadri), and the Himalayas (Himansh).

13. **Answer: B**

    Explanation

    About Asiatic Lion

    ➲ Concentrated in the **Gir National Park and Wildlife Sanctuary (Gujarat)**.

    ➲ Barda Wildlife Sanctuary has emerged as a **"second home" for lions.**

    ➲ IUCN Status: **Vulnerable.**

    ➲ Listed in Appendix I of CITES.

    ➲ Asiatic lions are **slightly smaller than African lions** with a distinctive longitudinal fold **of skin running along its belly.**

14. **Answer: D**

    Explanation:

    HDI is based on three dimensions:

    ➲ Health: life expectancy at birth

    ➲ Education: mean years of schooling & expected years of schooling

    ➲ Standard of living: GNI per capita (PPP)

15. **Answer: A**

    Explanation

    ➲ **Statement 1 is incorrect:** Maternal Mortality Ratio (MMR) DECLINED to 93 in 2019–21. [SDG target of MMR (<=70 by 2030)]

    ➲ **Statement 2 is correct:** Infant Mortality Rate (IMR) DECLINED to 27 in 2021.

    ➲ **Statement 3 is correct:** Institutional deliveries were 91.1% in 2021(both govt and private hospital)

    • **Statement 4 is correct**: Total Fertility Rate (TFR)= 2.0, (DECLINED during 2016-2021 at the National level). Replacement level TFR, viz. 2.1

16. **Answer: B**

    Explanation

    About CRISPR-Cas9

    ➲ Cas9 is an **enzyme** that acts like **molecular scissors** in the **CRISPR-Cas9** system.

    ➲ **Guiding RNA molecules** direct Cas9 to **cut specific DNA locations**, enabling scientists to **insert, delete, or modify genes with high precision**.

    ➲ It is derived from the **bacterial immune system against viruses** and is known for being **faster, cheaper, more accurate, and easier to use**.

17. **Answer: B**

    Explanation:

    About PSLV

    ➲ PSLV can launch satellites into **Low Earth Orbit (LEO), Geosynchronous, and Geostationary orbits — not just LEO.**

    ➲ PSLV was used in interplanetary missions, including **Mars Orbiter Mission (2013)**

18. **Answer: A**

    Explanation

    About Liquid Carbon

    ➲ Difficult to study as it forms only at **~4,500°C** under **high pressure**, bypassing the **liquid state** at normal pressure.

    ➲ **No container** can withstand such conditions; found in **planetary interiors**.

    ➲ Holds potential in **future technologies**, including **nuclear fusion**.

19. **Answer: B**

20. **Answer: C**

13.2. True/False Answers

Answers

1. F	2. T	3. T	4. F	5. F	6. F	7. F	8. F	9. F	10. F
11. T	12. T	13. T	14. T	15. F	16. T	17. T	18. F	19. F	20. F

13.3. Approach to the Mains Practice Questions

1. **Introduction:** Define Private Members' Bills briefly.
   Body: Importance/Significance of PMBs, Reasons for Decline, Procedural Resource Constraints
   Conclusion: PMBs are democratic tools that must be revitalized to ensure inclusive and responsive policymaking.

2. **Introduction:** Define FTAs; mention India–UK FTA as a breakthrough with a developed country.
   Body: Cover key features (zero-duty access, mobility for professionals, phased tariff cuts), and how this sets a model for future FTAs.
   Conclusion: Emphasise India's shift toward calibrated, interest-driven trade diplomacy.

3. **Introduction:** Mention CPEC's extension and India's concerns.
   Body: Cover geopolitical risks (encirclement, Chabahar undercut), security threats (Taliban-Pak-China axis), and economic concerns (mineral access).
   ➲ **Also mention India's counters:** Chabahar, INSTC, IMEC, and QUAD.
   Conclusion: Note the need for proactive infrastructure diplomacy and regional engagement..

4. **Introduction:** Explain Deep-water container trans-shipment facility.
   Body: Highlight key Opportunities and Challenges
   Conclusion: Possibilities for India

5. **Introduction:** Social media influencers as powerful digital content creators with mass reach and potential national security implications.
   Body:
   ➲ **Threats**: Disinformation campaigns, espionage risks, and societal polarization through influencer content.
   ➲ **Countermeasures:** Robust legal framework (OSA, IT Act) and policy initiatives (PIB Fact Check, IT Rules 2021).
   Conclusion: Need for technological upgrades, international cooperation, and public awareness to mitigate influencer-related security threats.

6. **Introduction:** Naxalism persists in underdeveloped regions despite India's security-development-outreach approach.
   Body: Gains: SAMADHAN doctrine, infrastructure push. Challenges: Ideological appeal, tribal distrust, tough terrain.
   Conclusion: Needs tribal-inclusive policies, better policing, and Centre-State synergy for lasting peace.

7. **Intro:** Define deepfakes as AI-generated deceptive media; mention rising global misuse.
   Body:
   ➲ **Risks:** Political misinformation, cybercrime, identity theft, women-targeted abuse, erosion of trust.
   ➲ **India's Measures:** IT Act, CERT-In advisories, I4C,

cybercrime portal.
   Conclusion: Suggest a dedicated legal framework, AI detection tools, and digital literacy.

8. **Intro:** Briefly describe PSLV and its reliability record.
   Body:
   ➲ **Importance:** Versatile launcher (LEO to GTO), key for Chandrayaan and MOM, supports Earth observation.
   Conclusion: ISRO must enhance testing protocols while sustaining PSLV's role in affordable launch capability

9. **Introduction:** Link Indian ancient science with global knowledge.
   Body:
   ➲ Global impact of surgical practices (Sushruta)
   ➲ Relevance of preventive healthcare and holistic wellness (Charaka)
   ➲ Adoption of yogic practices and herbal medicines
   Conclusion: Their recognition globally and potential for integrative medicine.

10. **Introduction:** Mention launch (2015), aims for unorganized sector
    Body: Features, Significance and Challenges
    Conclusion: Key to social security; needs better outreach and flexibility.

11. **Introduction:** Briefly introduce the Biological Diversity Act, 2002 and India's obligations under the Convention on Biological Diversity (CBD) and Nagoya Protocol, with a mention that the 2025 Regulation replaces the 2014 rules.
    Body: Mention the key features and challenges associated with it.
    Conclusion: Mention an optimistic way forward in the conclusion

12. **Introduction:** Briefly introduce the Himalayan Mountain System
    Body: Explain the ecological significance of the Himalayan Mountain system and threats associated with it.
    Conclusion: While mentioning global initiatives to conserve Himalayan ecosystem suggests a way forward

13. **Introduction:** Note the IAEA's "Atoms for Peace and Development" mandate—promote civilian nuclear applications while blocking weapons proliferation.
    Body:
    ➲ Peaceful Uses: Technical aid, safety norms, energy and medical applications.
    ➲ Non-Proliferation: CSA & Additional Protocol safeguards, inspections, NPT compliance reporting.
    ➲ Contextual Role: Supports decarbonisation, faces non-NPT/rogue states, underpins counter-terrorism.
    Conclusion: The IAEA must reinforce its apolitical, technology-driven oversight to balance peaceful

nuclear advancement with robust non-proliferation in an evolving global landscape.

14. **Introduction:** Rising North East Summit 2025 and PM's 'Ashta Lakshmi' & EAST Vision.
Body: Strategic Potential, Economic Potential and Challenges
Conclusion: Bezbaruah Committee insights

15. **Introduction**: India's global diplomatic push post-Pahalgam attack aims to counter Pakistan's terror narrative and reframe Kashmir as an internal matter.
Body: Successes include OIC support and legal justification under UN Charter, while challenges involve Pakistan's UNSC roles and persistent economic aid.
Conclusion: Sustained narrative-building and strategic alliances are crucial to maintain global pressure on Pakistan-sponsored terrorism.

16. **Introduction:** Start by defining urban floods and provide some facts related to it.
Body: Mention the relevant causes (both anthropogenic and natural) of flood and challenges faced in India.
Conclusion: Mention a way forward, with some of the global best practices.

17. **Introduction:** Mention rising urbanization (~31% in 2011; projected >50% by 2050) and persistence of urban poverty.
Body
➲ **Factors Sustaining Urban Poverty**
➲ **Key Government Initiatives**
Conclusion: Mention a way forward, with some of the global best practices.

18. **Intro:** Define satellite internet; mention growing interest post Starlink's India tie-ups.
Body:
➲ **Significance:** Digital inclusion, remote access, disaster response, digital economy, strategic/ military utility.
➲ **Challenges:** Data security, regulatory gaps, spectrum pricing, monopolies, atmospheric concerns.
Conclusion: Emphasize the need for balanced regulation to foster innovation while safeguarding national interests.

19. **Intro**: Briefly introduce gene editing and its growing significance.
Body
➲ **Applications / Potential of Gene Editing:** Medical (Corrects genetic disorders (e.g., CPS1 deficiency using CRISPR)), etc.
➲ **Ethical and Social Challenges:** Heritable changes raise consent issues for future generations., etc.
➲ **Safety and Regulatory Concerns:** May cause unintended mutations, etc.
Conclusion: End with a balanced view stressing ethical innovation.

20. **Introduction:** Brief on ancient Indian medical science.
Body:
➲ **Sushruta:** Surgical innovations, anatomy study, Sushruta Samhita
➲ **Charaka:** Tridosha theory, medicinal plant use, Charaka Samhita
➲ **Relevance today:** Ethics, yoga, plant-based medicine
Conclusion: Legacy and modern revival of Ayurveda

13.4. Approach to Case Studies

1. **Introduction:** Present the case as a moral-legal dilemma—balancing the woman's autonomy and suffering with societal norms and potential unrest.
Answers of Different Sections:
➲ **Arguments For/Against**: Relief from pain and dignity vs sanctity of life and risk of unrest.
➲ **Ethical Dilemmas**: Autonomy vs social morality, compassion vs legal limits.
➲ **Legal/Religious Context**: Passive euthanasia allowed (Common Cause, 2018); active euthanasia banned. Santhara reflects a culturally rooted, voluntary end-of-life practice.
Conclusion: Recommend a humane, lawful approach—prioritising palliative care, clear counselling, and managing community sensitivities.

2. **Introduction:** Frame the introduction as a conflict between technological progress and ethical responsibility, where the CEO must balance business viability with employee welfare.
**Answers of Different Sections:**
➲ **Ethical Dilemmas**: Loyalty vs duty to firm, utilitarian gains vs Kantian respect for individuals, emotional bonds vs. professional obligation.
➲ **Stakeholder Responsibilities**: Fair treatment of employees, transparency for investors, trust with customers, and accountability to society.
➲ **Recommended Measures**: Explore cost-cutting alternatives, offer reskilling, voluntary exit packages, outplacement support, and clear communication to uphold ethical conduct.
Conclusion: Advocate for a compassionate, stakeholder-sensitive downsizing approach that upholds long-term integrity and organisational trust.

14. Self-Evaluation
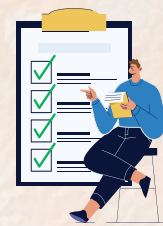
Progress Tracking Table

Activity Type	Total Questions	Correct Answers	Attempted	Score/Percentage
MCQ's				
True/False Statements				

Monthly Learning Summary

Top 3 Learnings/Insights

1.

2.

3.

Progress Comparison

Previous Month's Score

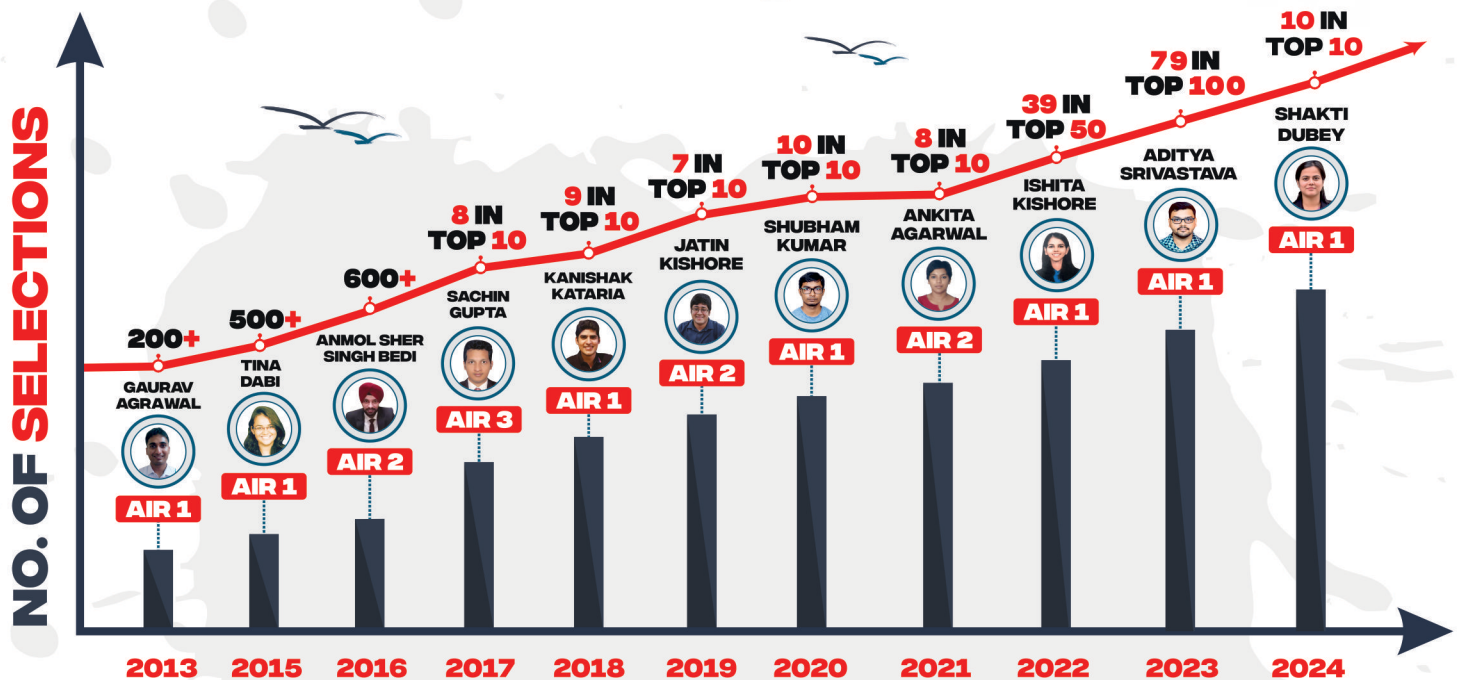**Current Month's Score**

Areas of Improvement

Reflection Section

Strengths

Areas for Improvement

Goals for Next Month

OUR ACHIEVEMENTS

NO. OF SELECTIONS

- 200+ — GAURAV AGRAWAL — AIR 1 — 2013
- 500+ — TINA DABI — AIR 1 — 2015
- 600+ — ANMOL SHER SINGH BEDI — AIR 2 — 2016
- 8 IN TOP 10 — SACHIN GUPTA — AIR 3 — 2017
- 9 IN TOP 10 — KANISHAK KATARIA — AIR 1 — 2018
- 7 IN TOP 10 — JATIN KISHORE — AIR 2 — 2019
- 10 IN TOP 10 — SHUBHAM KUMAR — AIR 1 — 2020
- 8 IN TOP 10 — ANKITA AGARWAL — AIR 2 — 2021
- 39 IN TOP 50 — ISHITA KISHORE — AIR 1 — 2022
- 79 IN TOP 100 — ADITYA SRIVASTAVA — AIR 1 — 2023
- 10 IN TOP 10 — SHAKTI DUBEY — AIR 1 — 2024

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18 JULY, 5 PM | 22 JULY, 11 AM | 25 JULY, 2 PM | 30 JULY, 8 AM

GTB Nagar Metro (Mukherjee Nagar): 10 JULY, 8 AM | 29 JULY, 6 PM

हिन्दी माध्यम 15 जुलाई, 2 PM

| AHMEDABAD: 12 JULY | BENGALURU: 22 JULY | BHOPAL: 27 JUNE | CHANDIARH: 18 JUNE |

| HYDERABAD: 14 JULY | JAIPUR: 24 JUNE | JODHPUR: 2 JULY | LUCKNOW: 22 JULY | PUNE: 14 JULY |

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DELHI : 15 जुलाई, 2 PM | **JAIPUR :** 24 जून | **JODHPUR :** 2 जुलाई

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Heartiest Congratulations
to all Successful Candidates

10 in **TOP 10** Selections in **CSE 2024**

from various programs of **Vision IAS**

1 AIR — **Shakti Dubey**

2 AIR — **Harshita Goyal**
GS Foundation Classroom **Student**

3 AIR — **Dongre Archit Parag**
GS Foundation Classroom **Student**

4 AIR — **Shah Margi Chirag**

5 AIR — **Aakash Garg**

6 AIR — **Komal Punia**

7 AIR — **Aayushi Bansal**

8 AIR — **Raj Krishna Jha**

9 AIR — **Aditya Vikram Agarwal**

10 AIR — **Mayank Tripathi**

79 Selections in **TOP 100** in **CSE 2023**

1 AIR — **Aditya Srivastava**

2 AIR — **Animesh Pradhan**

5 AIR — **Ruhani**

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