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# POLITY AND GOVERNANCE

## 1. RIGHT TO EDUCATION (RTE) AND MINORITY EDUCATION INSTITUTES

### Why in News?

Supreme Court wants to revisit exemption for minority schools under Right to Education Act.

### Background

- **RTE Act, 2009:** Guarantees **free and compulsory education** to children aged 6–14 years. It mandates norms like **25% reservation** for disadvantaged children in private unaided schools, teacher eligibility standards, and infrastructure requirements
- **Minority Educational Institutions:** Protected under **Article 30(1)** of the Constitution and grants right to **establish and administer educational institutions of their own.**
- **Judicial Interpretation: The RTE vs. Minority Rights Conflict:**
  - **The ruling:** In **Pramati Educational and Cultural Trust vs Union of India (2014)**, a five-judge Supreme Court Constitution Bench ruled that RTE Act **does not apply to minority institutions.**
  - **Effect:** Many provisions of RTE [i.e. Section 12(1)(c)] were **exempted** for minority schools.
  - The exemption is too broad and does not address other key provisions, such as quality standards and the ban on corporal punishment.

### Supreme Court Intervention – Sep 2025

**Case:** Anjuman Ishaat-e-Taleem Trust vs. State of Maharashtra & Ors.

### Interim Orders:

- **Teacher Eligibility Test (TET) Requirement:** The Court ordered that teachers in minority institutions must clear TET to be **appointed or promoted.**

### Court Observations:

- It expressed concern that the Pramati case's exemption ruling may **undermine the quality of education.**
- It opined that **Articles 21A & 30(1)** can be interpreted harmoniously and **coexist.**

### Constitutional Provisions Involved

- **Article 21A:** Right to free and compulsory education from 6–14 years.
- **Article 30(1):** Minority communities' right to establish & administer educational institutions.
- **Section 12(1)(c) of RTE:** Mandates 25% reservation for disadvantaged children in private schools.

## 2. DIGITAL CENSUS

### Why in News?

In the first-ever digital Census to be conducted in 2027, **enumerators** about to use smartphones to collect data for the 16th Census of India.

### About Census

- The **Census of India** is a **decennial** (once every 10 years) survey conducted by the Government of India to enumerate the population and collect various demographic, social, economic, and housing data.

**Enumerators** are government-appointed field workers who visit every household during the census to collect information. (Teachers, government staff, or local officials can be temporarily assigned for census duties as enumerators.)

- It is governed by the **Census Act, 1948**, which empowers the central government to conduct the census and defines responsibilities, procedures, and legal provisions.
- The Census is usually implemented by the **Registrar General & Census Commissioner, India**, under the **Ministry of Home Affairs**.

### History of Census in India

- **1872:** First all-India attempt at enumeration (non-synchronous; done in different provinces at different times).
- **1881:** First synchronous, systematic census of India under British rule, considered the first official Census of India.
- The **first census** after India's independence was the **1951 Census**, which recorded a population of about 361 million.

### Key Features of 16<sup>th</sup> Census

#### **First Digital Census**

- For the first time, census data will be collected digitally using mobile apps and tablets instead of only paper schedules.

#### **Self-Enumeration Option**

- Citizens can **fill in their own census** data online through a dedicated portal (like self-declaration in DigiLocker or UPI style digital onboarding).

#### **Inclusion of Caste Data**

- For the first time since 1931, **caste information** will be collected **nationwide** as part of the regular census (unlike the 2011 Socio-Economic and Caste Census, which was conducted separately).

#### **Did You Know?**

In 2011, SECC (Socio Economic caste census) was conducted in paperless mode, using the electronic devices (tablet, PCs) distributed by BEL (Bharat Electronic Limited)- a Navratna PSU under Ministry of Defence

#### **Conducted in Two-Phase Approach**

- **Phase 1:** House-listing & Housing Census (data about buildings, amenities, assets) from April to September 2026.
- **Phase 2:** Population Enumeration (age, sex, religion, caste, literacy, occupation, etc.) schedule to begin February 2027
  - Except for Ladakh, J&K, Himachal Pradesh and Uttarakhand, where it will be conducted in September 2026.

#### **Reference Date Change**

- Normally the reference date is **1 March**, but for snow-bound/remote areas it will be **1 October 2026**, and for the rest of India **1 March 2027**.

#### **Delayed Census**

- The 2021 Census was postponed due to COVID-19, making this the **first census after 16 years** instead of the usual 10 years.

#### **Integration with Aadhaar & NPR**

- Likely to use Aadhaar data and National Population Register (NPR) databases to cross-check and improve accuracy.

#### **New Data Dimensions**

- More detailed data on migration, urbanization, disability, amenities

(internet, digital access), environmental aspects etc has been added. This reflects India's socio-economic transformation since 2011.

### 3. SPECIAL INTENSIVE REVISION (SIR)

#### Why in News

The Supreme Court has directed the Election Commission to **accept Aadhaar card** as an identification, in addition to the existing 11 documents, in the final **electoral roll during the Special Intensive Revision (SIR) in Bihar** ahead of Assembly elections.

#### About

- **Special Intensive Revision (SIR)** is a targeted, large-scale electoral roll revision ordered by the Election Commission of India (ECI).
- It involves intensive pre-revision activities (house-to-house verification, distribution/collection of fresh enumeration forms, special campaigns and designated locations) to **re-verify and clean the rolls before an election.**

#### Legal Provisions for Special Intensive Revision (SIR)

##### Constitutional Authority

- **Article 324** of the Constitution, vests in the ECI the "Superintendence, Direction and Control" of the preparation of electoral rolls and conduct of elections.
- This is the **overarching constitutional power** under which SIR is ordered.

##### Statutory Basis

- **Representation of the People Act, 1950 (RPA, 1950):**
  - **Section 15:** Provides for the **preparation and revision of electoral rolls** for every constituency.

- **Section 21:** Permits electoral rolls to be revised:
  - a) before each general election to the House of the People or State Legislative Assembly,
  - b) before each bye-election, or
  - c) **in any year**, if the ECI directs, to maintain rolls up-to-date.

- Thus, SIR is a **type of revision permitted under Section 21 of RPA 1950**, undertaken more intensively than routine annual revisions.

#### Rules Framework

- **Registration of Electors Rules, 1960:**
  - **Rule 22:** It provides for "revision of electoral rolls" (by intensive, summary or special summary revision).
  - ECI uses these rules to prescribe **Special Intensive Revision (SIR) guidelines** (house-to-house verification, disposal of claims & objections, publication of draft and final rolls).

#### ECI Guidelines / Handbooks

- The ECI's **Handbook on Revision of Electoral Rolls** provides detailed guidelines to Chief Electoral Officers (CEOs) for operationalizing the SIR process.
- SIR is **initiated when the ECI determines** that a major purification and correction of the voter list is

#### Scale & headline outcomes:

- **Timeline (Bihar 2025):** 24 June – 30 Sept 2025.
- **Final Roll (30 Sept 2025):** ~7.42 crore electors.
- **Deletions:** ~65 lakh names removed during SIR.

necessary to ensure accuracy, inclusiveness, and integrity of the electoral roll (as in Bihar 2025).

### Key directions from Supreme Court (2025) :

- **No deletion** of voter names permitted **without prior notice** and opportunity for hearing, in adherence to principles of natural justice.
- **Accepted identity documents** should include Aadhaar, Voter ID, Ration Card, and other valid proofs as prescribed.
- **Timing of the SIR** close to elections has been questioned for fairness and transparency.
- Any **illegality or procedural** flaw in the revision methodology can render the electoral roll **invalid**.
- The **ECI has exclusive discretion** over the timing, manner, and conduct of electoral roll revision.
- **Aadhaar ≠ proof of citizenship** (only ID proof) and does not constitute proof of citizenship.
- **For transparency**, the electoral roll must publish booth-wise lists of deleted electors.

### Original 11 Documents used by ECI for Identification

1. Identity card / Pension Payment Order (Govt/PSU employee/pensioner).
2. Govt / Local authority / Bank / LIC / Post Office / PSU ID issued **before 1 July 1987**.
3. Birth Certificate.
4. Passport.
5. Matriculation or higher educational certificate.
6. Domicile / Permanent residence certificate.
7. Forest-rights certificate.
8. Caste certificate (SC/ST/OBC) issued by competent authority.
9. Document issued under NRC.
10. Family register by State/local authority.
11. Land / house allotment certificate by Government.

### Supreme Court addition

**12th document:** Aadhaar Card (accepted as ID proof, but **not proof of citizenship**).

### Difference between SIR, NPR and NRC

FEATURE	SPECIAL INTENSIVE REVISION (SIR)	NATIONAL POPULATION REGISTER (NPR)	NATIONAL REGISTER OF CITIZENS (NRC)
<b>AUTHORITY</b>	Election Commission of India (ECI)	Registrar General of India (RGI) under Ministry of Home Affairs	Office of Registrar General of India, under Citizenship Act, 1955
<b>LEGAL BASIS</b>	<ul style="list-style-type: none"> <li>○ Empowered by Article 324</li> <li>○ RPA, 1950 (Sec. 15 &amp; 21)</li> <li>○ Registration of Electors Rules, 1960 (Rule 22)</li> </ul>	<ul style="list-style-type: none"> <li>○ Citizenship Act, 1955 (Sec. 14A)</li> <li>○ Citizenship (Registration of Citizens and Issue of National Identity Cards) Rules, 2003</li> </ul>	<ul style="list-style-type: none"> <li>○ Citizenship Act, 1955</li> <li>○ Citizenship Rules, 2003 (Rule 4A, 4B)</li> </ul>
<b>PURPOSE</b>	To <b>revise &amp; purify electoral rolls</b> before elections (add eligible, remove ineligible/deceased/duplicates)	To create a <b>comprehensive database of residents</b> (demographic + biometric) for better planning & targeted schemes	To prepare a list of <b>Indian citizens only</b> ; identify & exclude illegal migrants
<b>NATURE OF DATA COLLECTED</b>	Name, age, address, gender, relation in household (limited to voting eligibility)	Demographic + biometric details (name, DOB, sex, marital status, address, parentage, etc.)	Proof of citizenship (based on documentary evidence, legacy data, etc.)
<b>COVERAGE</b>	Only <b>eligible voters (18+ years)</b> in a constituency	<b>All usual residents</b> of India (citizens + non-citizens, who stayed $\geq 6$ months)	Only <b>citizens of India</b> (excludes non-citizens)
<b>COMPULSION</b>	Periodic exercise, <b>mandatory for election integrity</b>	Legally compulsory (Citizenship Rules 2003 make it mandatory) though in practice data collection is integrated with Census	Not nationwide yet; conducted only in Assam (2013–19) under SC monitoring
<b>OUTCOME</b>	Electoral Roll (used for elections)	NPR database (forms the base for Aadhaar, Census inputs, welfare schemes)	NRC list of Indian citizens; exclusion list for suspected non-citizens
<b>RECENT EXAMPLE</b>	Bihar SIR 2025 → ~7.42 crore electors after verification	NPR data collected in 2010 and updated in 2015	Assam NRC (final list 2019; ~19 lakh excluded)

#### 4. THE PROMOTION AND REGULATION OF ONLINE GAMING ACT, 2005 (PROG Act)

##### Why in News?

The **PROG Act, 2025** came into effect on **1st October 2025**. It bans online games involving **real-money stakes**, including rummy, poker, fantasy sports, and other gambling-based platforms. The law was enacted to regulate the growing **online gaming industry** and protect users from gambling risks, addiction, and financial losses.

##### Key Provisions

###### Ban on Online Money Games

- Complete prohibition of **real-money games**, regardless of whether they involve **skill or chance**.
- Banks, payment providers, and intermediaries cannot process payments linked to banned games.
- Applies to **offshore and domestic platforms** operating in India.
- Ban applies to all games **with financial stakes**; social games and skill-based e-sports are exempt.

###### Regulatory Authority

- This act establishes the **National Online Gaming Commission (NOGC)** under **MeitY (Ministry of Electronics and Information Technology)**.
- Responsibilities of NOGC:
  - Licensing and regulating online gaming platforms.
  - Ensuring strict compliance with the provisions of the Act.
  - Promoting responsible gaming practices.

###### Classification of Games

- **Permissible Online Games of Skill:** E-sports, educational or social games.

- **Prohibited Online Games of Chance:** Gambling and betting games.
- **Hybrid Games:** Assessed by NOGC for classification.

###### Consumer Protection Measures

- **Age verification** mechanisms, mandated to prevent access to online gaming platforms by minors.
- Responsible features such as self-exclusion options, deposit limits, and time limits.
- Warnings promoting responsible gaming behaviour.
- Robust grievance redressal mechanisms and compliance with data protection laws.

###### Transitional Provision

- 6-month window for platforms to **refund deposits** to users before enforcing the ban.

##### Penalties

- **For Operators/Organizers:**
  - Imprisonment: **up to 3 years and**
  - Fine: **up to ₹1 crore**
- **For Advertising / Financial facilitation:**
  - Imprisonment: **up to 2 years and**
  - Fine: **up to ₹50 lakh**

##### Implications

###### Governance / Regulatory

- Establishes **first central regulator (NOGC)** for online gaming in India.

###### Economic

- Major platforms like Dream11, MPL, and Poker Baazi had to **suspend real-money operations**.
- Could lead to **loss of revenue** but fosters a regulated digital ecosystem.

## Legal / Social

- Legal challenges filed citing **fundamental rights** and **legislative competence**.
- Focus on **responsible gaming** and protecting **vulnerable populations**.

### Prelims Aspects

Aspect	Details
Name	Promotion and Regulation of Online Gaming Act, 2025
Effective Date	October 1, 2025
Objective	Ban real-money online games; protect users from financial and addiction risks
Scope	All real-money games including <b>fantasy sports, poker, rummy</b>
Exemption	E-sports & online social games (non-monetary)

## 5. DEFAMATION

### Why in News

Supreme court agreed to hear a plea filed by 'Foundation for independent journalism' seeking to quash the summon issued to it on a criminal defamation case.

### About

- Defamation is the **act of communicating false statements about a person that injures the reputation of that person**.
- In India, defamation is both a civil and a criminal offense, designed to balance the right to freedom of speech and expression (**Article 19**) with an individual's right to reputation and dignity (**Article 21**).

- 1) **Criminal Defamation** involves making or publishing false, damaging statements about someone with the intent to harm their reputation,
- 2) **Civil Defamation**, unlike Criminal Defamation, is not codified. It is a body of tort law that has been developed largely through the decisions made by judges in particular cases.

### Do you Know?

A **tort** is a civil offense, rather than a breach of contract, that causes someone harm or loss, making the person responsible, legally liable.

### Legal Provision

- **Section 356 of the Bhartiya Nyaya Sanhita (BNS) (2023)** defines the offense of criminal defamation. The punishment for this offense can include imprisonment for up to two years, a fine or both.
- **Section 499** of the erstwhile Indian Penal Code defines the criminal defamation.

### Related Supreme Court verdict

- In *Subramanian Swamy vs Union of India case(2016)*, the Supreme Court upheld criminal defamation, holding reputation as part of the right to life.

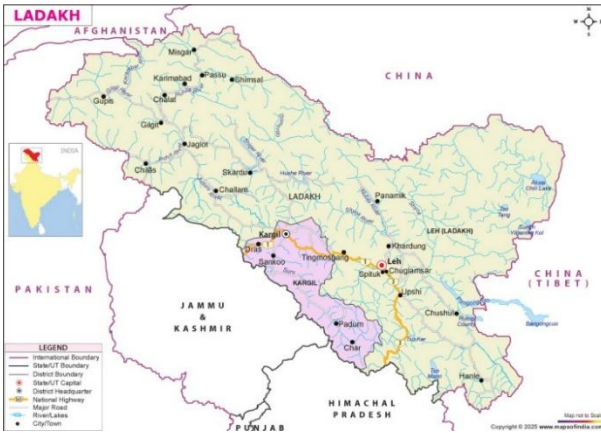
## 6. LADAKH DEMAND FOR STATEHOOD AND SPECIAL STATUS

### Why in News:

Recent protests in **Leh, Ladakh** turned violent, resulting in deaths, arrests, and heightened tensions. These developments have brought the long-standing demand for

statehood and special status for Ladakh into sharp focus.

### Background:



The **demand for statehood and special status for Ladakh (Leh and Kargil regions)** has been growing in recent years, especially after the abrogation of **Article 370** and the bifurcation of the erstwhile state of Jammu & Kashmir in August 2019.

- Before **August 2019**, Ladakh was part of the state of Jammu & Kashmir.
- As per the **J&K Reorganisation Act, 2019**, Ladakh was carved out as a **Union Territory (UT) without a legislature**, unlike J&K UT which has a legislative assembly.
- Ladakh now directly comes under the administration of the **Lieutenant Governor (LG)** and the Union Government.

### Current status:

- **LAHDCs (Ladakh Autonomous Hill Development Councils):** There are two hill councils, one each for Leh and Kargil. These continue to function and have retained certain decision-making and executive powers over local matters

### Sixth Schedule of the Constitution of India

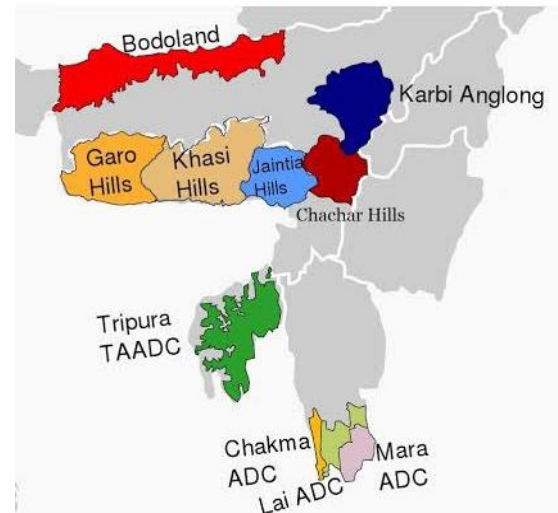
- **Articles Covered:** Articles **244(2)** and **275(1)**.
- **Applicability:** Certain tribal areas in the **Northeast (Assam, Meghalaya, Tripura, Mizoram)**.
- **Objective:** To protect the rights of the tribal population through self-governance, preservation of culture, and control over land & resources.
- **Background:** It was enacted by the Constituent Assembly in 1949, based on recommendations from the **Gopinath Bordoloi Committee**, to grant limited autonomy and establish Autonomous District Councils (ADCs) in the tribal areas of Assam, Meghalaya, Tripura, and Mizoram.
- **Key Provisions:** Under the Sixth Schedule, the tribal areas are constituted as autonomous districts. The governor is empowered to organise and reorganise the autonomous districts.
- If there are different tribes in an autonomous district, the governor can divide the district into several autonomous regions. Each autonomous region also has a separate regional council.
- Article 244 provides for the formation of Autonomous District Councils (ADCs) that have some legislative, judicial, and administrative autonomy within a state.

under the LADHDC Act. They act as planning & development boards for their districts. But have limited autonomy over land, resources, jobs.

- **Special status / constitutional safeguards:** Unlike earlier arrangements under Article 370, Ladakh does *not* have special constitutional status. There is demand for inclusion under the **Sixth Schedule** of the Constitution to protect tribal areas, customs, land rights, and local identity. That demand remains unfulfilled.

#### Recent / New Developments & Changes

- The Central Government has set up committees / sub-committees to engage with the local bodies (Apex Body Leh, Kargil Democratic Alliance) to discuss statehood / constitutional protections.



*Autonomous District Councils in the North East  
(Schedule 6)*

## ECONOMY

### 7. WHITE LABEL BANKING

#### Why in news?

The RBI and NPCI have upped the interchange fee

It is the fee paid by a bank to another bank/White label ATM Operator whenever its customer uses the latter's ATM.

#### About

- Traditionally, ATMs are set up and operated by banks themselves.
- A **White Label ATM(WLA)** is an ATM that is **owned and operated by a non-banking company**, but can be used by customers of **any bank** for basic services such as cash withdrawal, balance inquiry, mini statements, and PIN change.
- The companies running them are called **WLA Operators**, authorized by the **Reserve Bank of India (RBI)**.
- Examples: **Tata Communications Payment Solutions (Indicash), Muthoot Finance, and India1 Payments.**

#### Need For White Label Banking

- **Financial inclusion:** Banks are often reluctant to set up branches or ATMs in remote and rural areas due to high costs. WLAs fill this gap.
- **Convenience:** Customers of any bank can use a WLA, reducing dependency on their own bank's ATM network.
- **Reduced burden on banks:** WLAs allow banks to focus on core operations, while private operators handle ATM infrastructure.

#### What is Unique?

- **Non-bank ownership:** Unlike regular ATMs, WLAs are set up by private, non-bank entities.
- **No deposit facility:** WLAs can dispense cash but cannot accept deposits.
- **Rural focus:** WLAs are often set up in semi-urban and rural areas to bridge the financial access gap.

#### BROWN LABEL BANKING

A **Brown Label ATM** is one where the **physical machine and location are owned by a private company**, but the **branding and cash supply are managed by a bank**. So, the machine belongs to a third-party service provider, but it carries the bank's name and works as part of the bank's ATM network.

### 8. BILATERAL INVESTMENT TREATY

#### Why in news?

**India and Israel have signed a new Bilateral Investment Agreement (BIA)** to promote and protect reciprocal investments between the two nations. The existing investment between the two countries is around USD 800 million.

#### About

A Bilateral Investment Treaty (BIT) is an **agreement between two countries** that lays down the **rules and protections for investments made by investors** from one country in the other.

It aims to create a stable, transparent, and predictable legal framework **to encourage FDI**.

### Significance of a BIT

- **Protects investors against risks** such as expropriation, unfair treatment, discrimination, or sudden policy changes.
- **Provides investors** with the right to fair and equitable treatment (FET).
- **Offers a mechanism for dispute resolution**, often through international arbitration.
- **Encourages greater cross-border investment** by building investor confidence.

### Need for BITs

- **Attract foreign investment** by assuring investors of legal protection.
- Provide a level playing field for **both domestic and foreign investors**.
- **Strengthen bilateral economic relations** and trust between countries.
- **Balance the rights of investors with the sovereign right of states** to regulate in public interest.

### Key features of BITs

- They are **binding international treaties**, unlike ordinary trade agreements.
- BITs include Investor-State Dispute Settlement (ISDS) provisions, allowing private investors to directly sue the host state in case of treaty violations.
- **India's Model BIT (2016) was designed after global arbitration cases** against India, ensuring greater protection for India's regulatory sovereignty while still safeguarding investors.

## INDIA AND BILATERAL INVESTMENT TREATY

- **India signed its first BIT in 1994** with the United Kingdom. By 2015, India had signed 83 BITs, making it one of the most active signatories globally. However, after facing multiple international arbitration disputes (like Vodafone and Cairn cases), India terminated or sought to renegotiate most of its old BITs.
- Now, **India follows its Model BIT (2016) to sign fresh agreements**. Recently, India has signed/re-negotiated BITs with countries such as Brazil, Belarus and Kyrgyzstan, and is in talks with the European Union and ASEAN nations for new frameworks.

## 9. KRISHI NIVESH PORTAL

### Why in news?

The Krishi Nivesh portal saw continued development and integration with a new focus on incorporating PPPs and other funding opportunities.

### About

- The Krishi Nivesh Portal was launched by the **Ministry of Agriculture & Farmers' Welfare** in 2024.
- It is a **centralized digital platform** designed to bring together **information on agricultural investment opportunities and government scheme benefits in one place**.
- It acts as a single gateway for farmers, agripreneurs, producer organisations, and private investors to access scheme details, submit proposals, and track progress.
- The **portal currently aggregates 17 flagship agriculture and allied sector schemes**, including the **Agriculture Infrastructure Fund, Animal**

### **Husbandry Infrastructure Development Fund, PM-KUSUM, and PM Kisan Sampada Yojana.**

- By consolidating scheme information, providing a unified interface, and enabling tracking of proposals and application status, the portal addresses these **bottlenecks**:
  - Fragmented scheme structures
  - Delays and opacity in loan disbursements
  - Weak coordination among ministries/departments
- The portal can act as a catalyst to bridge infrastructure gaps (e.g. storage, processing, logistics) in Indian agriculture through private investment.

## **10. BIMA SUGAM PORTAL**

### **Why in news?**

Bima Sugam's official website was launched on September 17, 2025, by the **Bima Sugam India Federation (BSIF)**.

### **About**

Bima Sugam is a **unified digital platform** designed to **centralize all insurance-related services**.

It allows individuals to:

- Compare policies across various insurers

### **Do you know?**

The Insurance Regulatory and Development Authority of India (**IRDAI**) is the **regulatory body for the insurance sector** in India.

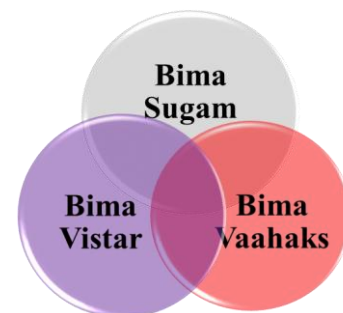
It was established under the IRDA Act, 1999 to **regulate, promote, and ensure orderly growth of the insurance industry** while protecting the interests of policyholders.

- Purchase life, health, motor, and general insurance policies
- Renew existing policies, manage and track claims, store policy documents digitally.
- Bima Sugam falls **under the Ministry of Finance**, and it is an **initiative by the Insurance Regulatory and Development Authority of India (IRDAI)**.
- **IRDAI aims to achieve the vision of "Insurance for All by 2047,"** aligning with India's broader goal of becoming a developed nation.
- This **one-stop solution eliminates the need to visit multiple insurer websites, streamlining the entire insurance journey.**

### **The Bima Trinity**

The Bima Sugam Portal is a cornerstone of the Bima Trinity, a strategic initiative by IRDAI aimed at enhancing insurance penetration and accessibility. The three pillars of the Bima Trinity are:

- **Bima Sugam:** The digital platform for all insurance services.
- **Bima Vistaar:** A comprehensive, bundled insurance product covering life, health, property, and accidents, designed for quick claim payouts.
- **Bima Vahak:** A **women-led** grassroots network promoting insurance awareness and the adoption of Bima Vistar in under-served regions.



Together, **these components work synergistically to ensure that insurance reaches every corner of India.**

#### Role of BISF

- **The Bima Sugam India Federation (BISF) is a pivotal entity established to oversee the Bima Sugam platform.**
- Incorporated as a private limited company under the Companies Act, **BSIF operates as a non-government, not-for-profit organization.**
- Its primary objective is to facilitate a unified digital marketplace that integrates insurers, intermediaries, and policyholders, **thereby enhancing transparency, accessibility, and efficiency in the Indian insurance sector.**

### 11. NaBFID Partial Credit enhancement

#### Why in news?

NaBFID (National Bank for Financing Infrastructure and Development) has launched the Partial Credit Enhancement (PCE) facility.

#### About

- NaBFID is one of India's **All India Financial Institutions (AIFI)**, like NABARD or SIDBI, but with a **dedicated focus on infrastructure financing.**
- It was **established under NaBFID Act, 2021.**
- It is a **Development Finance Institution (DFI).**
- It is owned by the **Government of India.**

#### Objective of NaBFID

- Its objective is to fund, support, and accelerate infrastructure projects in sectors such as transport, energy, water,

communication, and social infrastructure.

- It provides long-term loans to projects that banks hesitate to finance due to long gestation periods (it is the period between starting a project and when it begins to generate income or benefits.).

#### Partial Credit Enhancement (PCE)

- A powerful tool where NaBFID provides a guarantee to improve the credit rating of bonds issued by infrastructure companies.
- Example: If a company issues bonds, NaBFID's partial guarantee can raise the credit rating.
- Benefit: Attracts more investors + lowers borrowing costs.

#### *Do you know?*

A Development Finance Institution (DFI) is a **specialized financial institution** set up by the government (sometimes with private participation) to **provide long-term finance for projects** that are **critical for national development** but are considered too risky or **unprofitable for commercial banks.**

#### Catalyst Role

- Mobilizes funds from domestic and international investors.
- Crowds in private capital into infrastructure.

#### Developmental Role

- Builds best practices, develops bond markets, and supports innovations like green bonds.

## 12. WTO - Special and Differential Treatment

### Why in news?

China has announced that it will no longer seek new S&DT (Special and Differential Treatment) benefits in future agreements under WTO, though it would still maintain its self-identified status as a developing country.

### About

- The **World Trade Organization (WTO)** is a global institution established on 1st January 1995, succeeding the General Agreement on Tariffs and Trade (GATT) of 1948. Its main purpose is **to create a fair, predictable, and transparent system for international trade.**
- **Headquartered in Geneva, Switzerland,** the WTO provides a platform where member countries (166 as of 2025) negotiate trade rules, settle disputes, and monitor compliance to ensure that global trade flows smoothly.

### Special and Differential Treatment

- **Developing and least-developed countries often face structural and economic challenges** like limited technology, weaker infrastructure, and dependence on primary goods, that prevent them from competing equally in global trade.
- To address these inequalities, the **WTO introduced the concept of Special and Differential Treatment (SDT).**
- Special & Differential Treatment provisions are clauses in WTO agreements that **grant developing countries and least-developed countries (LDCs) greater flexibility and more lenient obligations** than what is expected from developed countries.
- The idea is to address structural handicaps, capacity constraints, and ensure that trade liberalization does not harm poorer economies.

FEATURES	WHAT IT MEANS?
Longer transition / implementation periods	Developing countries get more time to meet obligations under new agreements.
Lower or softer commitments	Requirements may be less stringent in areas where capacity is weak.
Increased trading opportunities	Preferential market access, special treatment.
Technical assistance and capacity building	Support in legal, institutional, infrastructural aspects: dispute settlement, implementing technical standards, capacity to negotiate etc.
Safeguards for trade interest	Rules require WTO members to take into account, the interests of developing countries when making trade policy.

## 13. GOODS AND SERVICES TAX APPELLATE TRIBUNAL (GSTAT)

### Why in news?

GSTAT (Goods and Services Tax Appellate Tribunal) was formally launched on September 24, 2025, by the Union Finance Minister of India.

### About

- The **Goods and Services Tax (GST)**, launched on 1st July 2017, is India's biggest **indirect tax** reform aimed at creating **"One Nation, One Tax, One Market."** It replaced multiple indirect taxes like VAT, excise, and service tax with a single unified system.
- The **GST Council**, chaired by the Union Finance Minister, **ensures cooperative federalism in decision-making.**
- As the system expanded, disputes over interpretation of GST laws increased. To **provide a uniform and speedy resolution mechanism**, the government set up the Goods and Services Tax Appellate Tribunal (**GSTAT**) under **Section 109 of the CGST Act, 2017.**

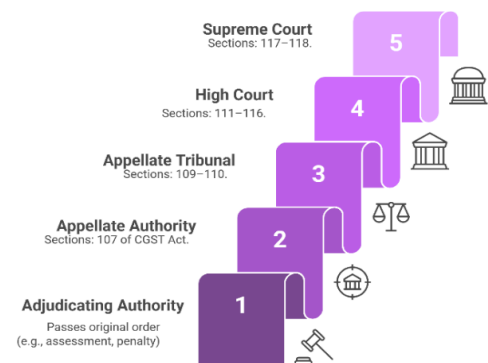
### Composition and Structure

- The GSTAT will consist of a **Principal Bench** in New Delhi and **State Benches** across various states.
- Each Bench shall be composed of:
  - The **Principal Bench** in New Delhi will consist of the **President (Judicial Member)**, **one Technical Member (Centre)** and **one Technical Member (State).**
  - The **State Benches** will comprise **two Judicial Members**, **one Technical Member (Centre)** and **one Technical Member (State).**
- This structure is designed to balance legal expertise with domain knowledge

of taxation, ensuring informed and impartial decision-making.

### Eligibility Criteria:

- **President:** Must be a Supreme Court Judge or have served as a High Court Chief Justice.
- **Judicial Member:** Must be a High Court Judge or have served as an Additional District Judge or District Judge for at least 10 years.
- **Technical Member (Centre):** Must be an Indian Revenue Service member belonging to Group A or must be a member of All India Service with three years of experience in administering GST
- **Technical Member (State):** Must be a state government officer or All India Service officer with rank above Additional Commissioner of Value Added Tax; also must have completed twenty-five years in Group A Services with three years administering GST or finance and taxation.



- **GSTAT (Procedure) Rules, 2025** guide its setup and member appointments. Once fully functional, GSTAT will **reduce High Court burdens, ensure uniform tax law interpretation, and boost trust in India's tax system.**
- In short, the tribunal acts as the final appellate authority before High Courts, ensuring consistency, fairness, and efficiency.

## GEOGRAPHY

### 14.AMOC | ATLANTIC MERIDIONAL OVERTURNING CIRCULATION

#### Why in News?

As per latest research, a key Atlantic Ocean current system is on the verge of collapse that could plunge winter temperatures across northern Europe to unprecedented lows.

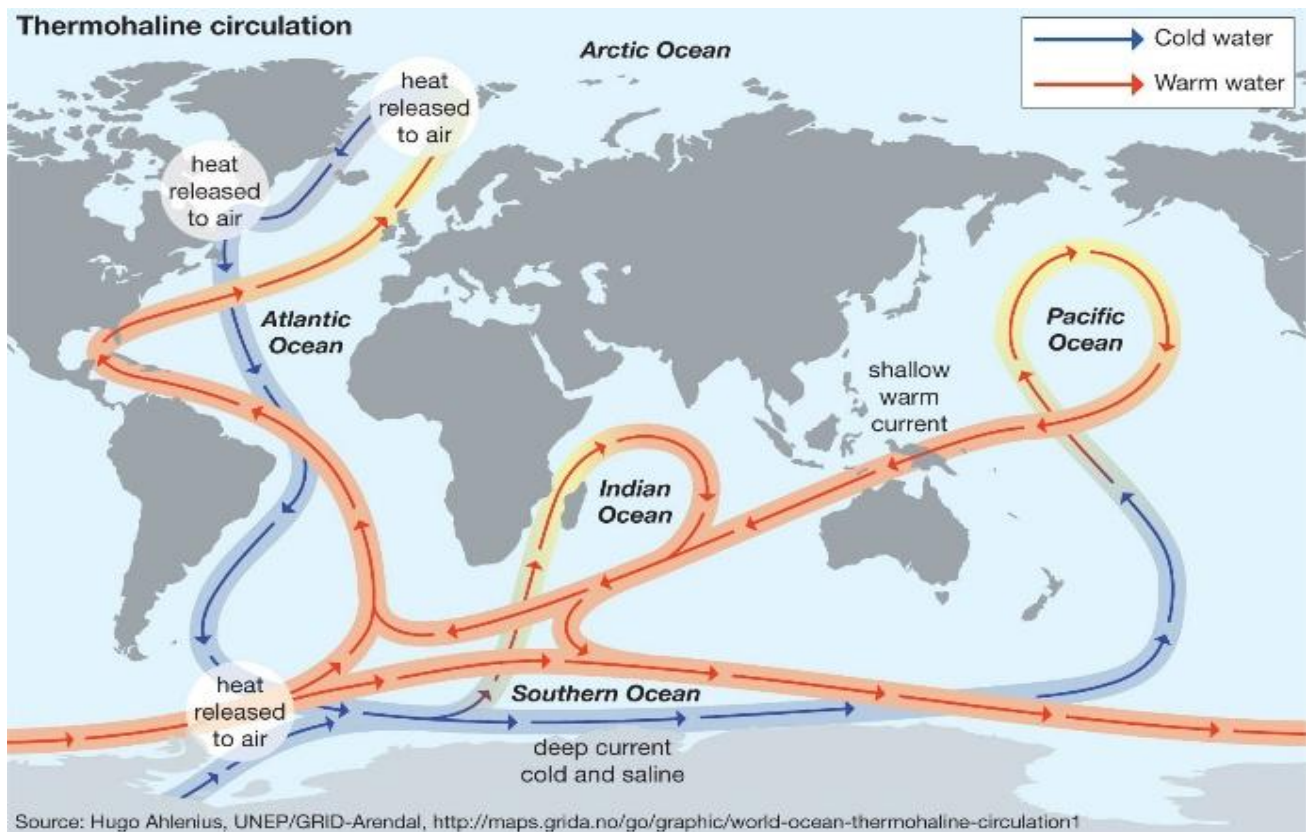
#### About

- AMOC is a crucial Atlantic Ocean current system that **moves warm water north and cold water south**, regulating global climate by **redistributing heat** and influencing weather patterns like monsoons.
- It is a part of the Thermohaline circulation (THC), which is driven by temperature and salinity difference.
- Its potential slowing or melting of ice due to global warming **could lead to**

**severe cooling** in Northern Europe and widespread **extreme weather**.

#### Types of Ocean Current:

- **Surface Currents**
  - Driven mainly by wind systems (Trade winds, Westerlies).
  - Limited to the upper 400 meters of ocean depth.
  - Includes Gulf Stream, Kuroshio, Agulhas, etc.
- **Thermohaline Circulation**
  - Driven by density differences (temperature + salinity).
  - Involves ocean currents found in depths below 400 m from surface currents
  - Also called the “**Global Ocean Conveyor Belt.**”



### Mechanism

- **Warm water** from tropics flows north via the Gulf Stream.
- In the **North Atlantic**, it cools, becomes denser, and then sinks (North Atlantic Deep-water formation).
- This deep cold water flows southward, completing the circulation.

### Why AMOC (Atlantic) is More Important than Other Ocean currents in THC

- **Primary Site of Deep-Water Formation**
  - **North Atlantic** is the **largest deep-water formation zone** (North Atlantic Deep Water, NADW).
  - Other oceans (Indian, Pacific) are mostly “end-points” where deep water spreads, but they don’t form significant deep water.
- **Salinity Advantage**
  - Atlantic is **saltier** than the Pacific or Indian Ocean because of higher evaporation, precipitation balance.
  - This high salinity helps water become dense enough to sink and drive THC.
- **Heat Transport Role**
  - Gulf Stream + AMOC transport **massive amounts of heat northward**. It keeps Europe warm even at higher latitudes
- **Carbon Pump**
  - North Atlantic sinking waters carry huge amounts of **CO<sub>2</sub> to the deep ocean**, acting as the strongest **carbon sink** among oceans.
- **Climate Tipping Role**
  - Collapse of AMOC = collapse of global THC.  
Weakening in Pacific or Indian circulation would have **regional effects**, but AMOC controls **global climate balance**.

## 15. OFFSHORE AQUIFER

### Why in News?

Scientists **uncover hidden freshwater under sea floor**. The latest exploration of the offshore aquifer located off the northeast US is crucial. It is the first global expedition to drill systematically for undersea freshwater.

#### *Offshore aquifers are found in:*

- **North Sea** (Europe)
- **Gulf of Mexico**
- **Japan’s coastal zones**
- **India:** Some studies suggest freshwater pockets under the **Mumbai offshore shelf** and **Saurashtra coast**.

### About

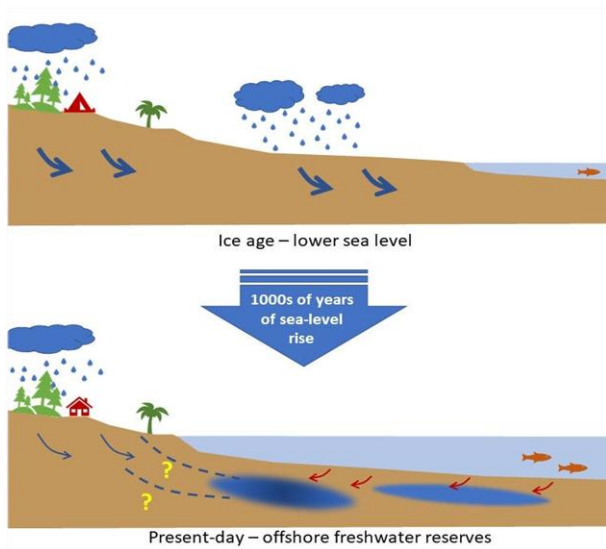
- Like aquifers on land, offshore aquifers are **bodies of rock or sediment which contain freshwater**.
- However, they have not been really explored primarily due to an exclusive focus on land aquifers and logistical reasons.

### Significance of Offshore Aquifers

- **Freshwater Source:** Provides drinking and irrigation water for coastal and island regions.
- **Economic Use:** Supports agriculture, industry, ports, naval bases, and oil rigs.
- **Less Reliance on Desalination:** Offers a cheaper, less energy-intensive alternative.
- **Fossil Water:** Many aquifers store ancient freshwater from glacial periods.
- **Environmental Role:** Maintains soil moisture, estuary flow, and prevents saltwater intrusion.

- **Scientific Value:** Reveals past climate, rainfall, and sea-level changes.
- **Hydrogeological Insight:** Aids study of groundwater–saltwater interactions and coastal aquifer behaviour.
- **Disaster Resilience:** Serves as an emergency freshwater reserve during droughts. Can serve as a **backup freshwater source** during droughts or freshwater scarcity in coastal regions.

### How Offshore Aquifers Get Freshwater



### Formation During Lower Sea Levels (Fossil Water)

- Most offshore aquifers were formed **tens of thousands of years ago**, during **glacial periods**.
- During these times, **sea levels were much lower**, exposing what is now the continental shelf.
- Rainfall and rivers **recharged the aquifers on land**, filling the porous sediments with freshwater.
- When sea levels rose after the ice age, these aquifers were **submerged under seawater**, but the trapped freshwater remained due to **density differences** (freshwater is less dense than seawater).

### Density Stratification

- Freshwater (density  $\approx 1,000 \text{ kg/m}^3$ ) is **lighter than seawater** ( $\approx 1,025 \text{ kg/m}^3$ ).
- This causes freshwater to **float above seawater** within the porous sediments.
- Result: A **freshwater lens** forms beneath the seabed, often with a sharp **interface** between freshwater and saltwater.

### Limited Modern Recharge

- In some **shallow nearshore aquifers**, **ivers, rainfall, or groundwater from land** may continue to seep offshore and recharge the aquifer.
- However, **most offshore aquifers are non-renewable fossil water**, with minimal present-day recharge.

### Geological Conditions Favouring Freshwater

- **Porous and permeable sediments** like sands, gravels, or limestone.
- **Impermeable layers** above and below, which prevent seawater mixing.

**Gentle slope of the continental shelf**, allowing freshwater to remain trapped.

## 16.SUPER TYPHOON RAGASA

### Why in News?

In late September 2025, Super Typhoon Ragasa made landfall in parts of South East Asia and China, recording maximum sustained wind speeds of 280 kmph.

### Naming of Cyclones

The WMO has designated nine Regional Specialized Meteorological Centres (RSMCs) and Tropical Cyclone Warning Centres (TCWCs) worldwide to name tropical cyclones in their areas of responsibility.

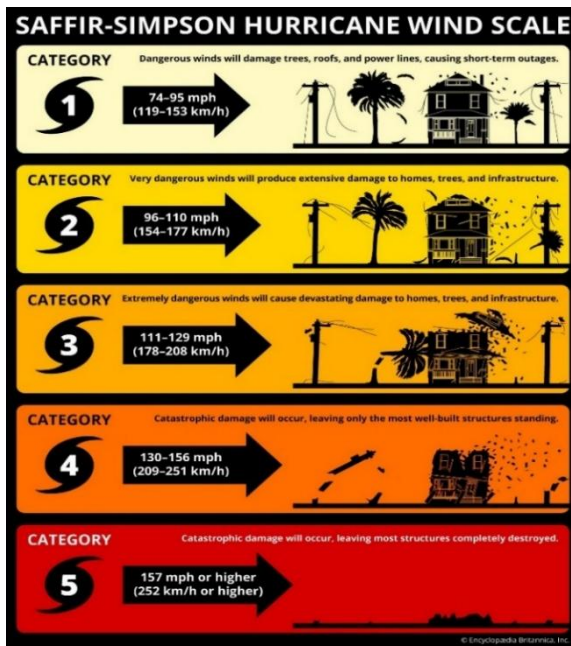
### About:

A cyclone is a powerful, **rapidly rotating storm with a low-pressure centre**, characterized by **strong winds and heavy rainfall**. The term used for this type of storm varies by location:

- **Typhoon:** Northwest Pacific Ocean (e.g., China Sea and near Japan).
- **Hurricane:** North Atlantic, Central North Pacific, and Eastern North Pacific Oceans.
- **Tropical Cyclone:** Indian Ocean and South Pacific.
- **Willy-willies:** Northwestern Australia.

### Typhoon Ragasa

- **Most intense storm of 2025:** Typhoon Ragasa (also known as Super Typhoon Nando in the Philippines) was a category 5 cyclone according to **Saffir -Simpson Wind scale**

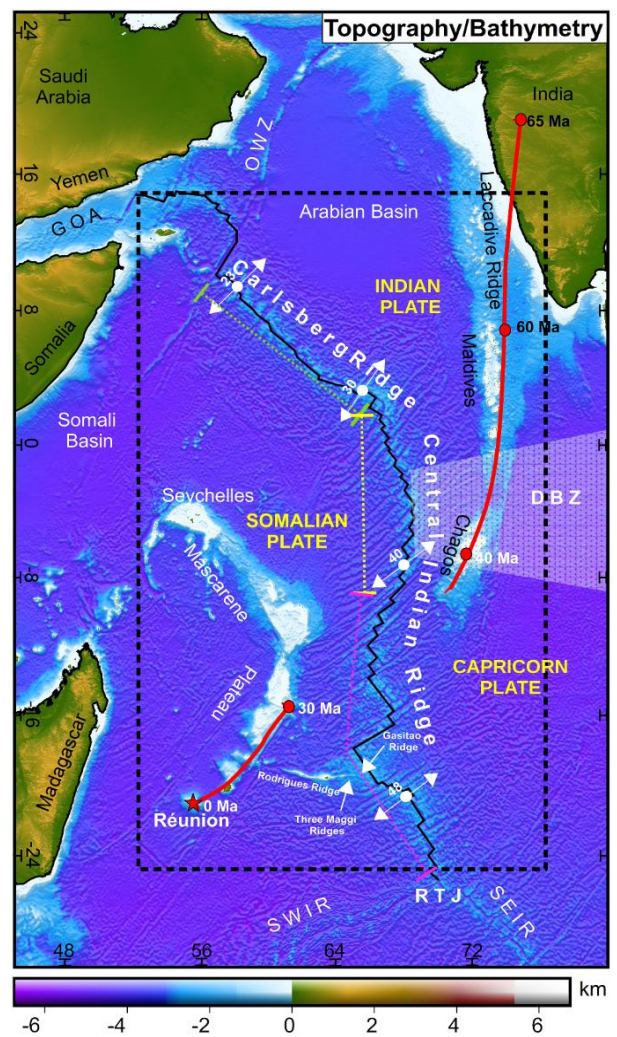


- **Rapid intensification:** Favourable conditions, including exceptionally warm sea surface temperatures, allowed it to intensify rapidly into a Category 5-equivalent super typhoon.

## 17.POLYMETALLIC SULPHIDES IN CARLSBERG RIDGE

### Why in news?

- India has signed a contract with the Jamaica based - International Seabed Authority (ISA) to explore **polymetallic sulphides (PMS)** in the **Carlsberg Ridge**, a 3,00,000-sq km area in the northwest Indian Ocean.
- This is the first global licence granted for exploring these deep-sea nodules in this region, highlighting India's growing strategic and resource interests in the Indian Ocean.
- With this contract, India has become the first country in the world to hold two contracts with ISA for PMS exploration.



### About:

- **Regulation by ISA:**

Exploration in international waters (the 'high seas') requires authorisation from the ISA under the United Nations Convention on the Law of the Sea (UNCLOS). The ISA grants exploration licenses (PMNs, PMS, CMS) based on applications that include detailed work plans and environmental studies. Nineteen countries currently hold such exploration rights.

- **Carlsberg Ridge:**

**Located in the Arabian Sea and northwest Indian Ocean**, the ridge forms the tectonic boundary between the Indian and Arabian plates, extending from near Rodrigues Island to the Owen fracture zone.

- **India's Previous Rights:**

India previously obtained exploration rights for Polymetallic Nodules (PMN) in the **Central Indian Ocean Basin (2002–2027)** and for Polymetallic sulphides in the **Indian Ocean Ridge (2016–2031)**.

- **Other Regions:**

India has also applied for exploration in the **cobalt-rich ferromanganese crusts (CMS) of the Afanasy-Nikitin Seamount in the Central Indian Ocean**, which is yet to be approved. The ANS region is claimed by Sri Lanka for exploration rights.

POLYMETALLIC NODULES	POLYMETALLIC SULPHIDES	COBALT-RICH FERROMANGANESE CRUSTS
Formed due to <b>mineral precipitation onto a central nucleus</b> , such as a shark tooth or microfossil, in low-sedimentation deep-sea environments.	Formed when hot, mineral-rich fluids from the Earth's mantle mix with cold seawater at hydrothermal vents on the ocean floor, causing the metals and sulphur in the fluids to precipitate and form <b>solid deposits</b> .	Formed on hard-rock substrates of volcanic origin by the <b>precipitation of metals</b> dissolved in seawater in areas of seamounts, ridges, plateaus and where prevailing currents prevent deposition of unconsolidated sediments.
Composed mainly of Mn, Fe, silicates and hydroxides. The trace metal contents such as <b>Nickel, Copper, Cobalt and Manganese and rare earth elements</b> .	These metalliferous muds contained large amounts of <b>copper, zinc, lead, iron, silver and gold</b> .	The crusts have higher <b>cobalt</b> percentage (up to 2%), <b>platinum</b> (0.0001%) and <b>rare earth elements</b> besides <b>nickel and manganese</b> .
Found abundantly in areas off the west coast of Mexico in the Pacific (known as the Clarion-Clipperton Fracture Zone), the Central Indian Ocean Basin, and the Peru basin	Primarily found along mid-ocean ridges, back-arc basins, and active volcanic arcs. Eg: East Pacific Rise System, Galapagos Ridge, the Juan de Fuca and Gorda Ridges	Occur at shallower depths of <400 to about >5,000 meters in areas of significant volcanic activity. Usually found in the EEZ of Pacific island nations, Atlantic and Indian oceans.

## ENVIRONMENT

### 18.Environment Auditors

#### Why in news?

The Environment Ministry has notified the **Environment Audit Rules, 2025**, allowing private accredited agencies to function as independent environment auditors to strengthen compliance monitoring.

#### About

- India's environmental compliance framework is currently monitored by **CPCB (Central Pollution Control Board)**, regional offices of **MoEFCC (Ministry of Environment, Forest and Climate change)** and State PCBs.
- Accredited private agencies can evaluate project compliance with environmental laws, much like Chartered Accountants audit finances.
- New auditors will supplement the role of **CPCB, State Pollution Control Boards(PCBs), and Pollution Control Committees**, which face manpower and infrastructure shortages.
- They will also conduct **Environmental Impact Assessment (EIA)** studies,

which will be appraised by expert committees.

- These audits can be used to demonstrate compliance under the **Green Credit Rules, 2023**.
- Environment auditors are to be certified and registered by the MoEFCC - notified **Environment Audit Designated Agencies (EADA)**.
- **Environment (Protection) Act, 1986, the Forest (Conservation) Act, 1980, the Wildlife Protection Act, 1972, Green Credit Rules, 2023** etc are key laws checked for compliance.
- This major reform is in line with Government's commitment to **Ease of Doing Business** and the principles of **trust-based governance**.
- Strengthens India's commitment to **sustainable development and international agreements** (Rio Declaration Principle 10 on public participation and accountability).



## 19. ISOBUTANOL AS A DIESEL BLEND

### Why in News?

- The **Automotive Research Association of India (ARAI)** is exploring the potential of blending **isobutanol with diesel**, after previous attempts with ethanol failed.
- **Union Transport Minister Nitin Gadkari** highlighted this as a promising avenue to reduce **emissions, substitute imports**, and better utilize surplus biofuel feedstock.

### Isobutanol ( $C_4H_{10}O$ )

- **Alcoholic Compound:** Flammable, used as solvent in industries like paints and coatings.
- **Biofuel Potential:** Blends better with diesel than ethanol due to chemical compatibility and **higher flash point** (safer, less volatile).
- **Production:** Derived from **sugarcane syrup, molasses, and grains** through fermentation with engineered microbes, separating ethanol and isobutanol during distillation.

### Why Not Ethanol?

- The flash point of ethanol is approximately 13 to 14°C (55 to 57°F), meaning that at this temperature or higher, its vapours can ignite if exposed to an ignition source like a spark or flame. This makes it volatile and less safe for diesel blending.
- India has **surplus ethanol**, already committed to **petrol blending**, reducing its availability for diesel.
- Ethanol pricing disparities and low economic viability for sugar mills further complicate its use.

## Economic Feasibility of Isobutanol Production

- Existing ethanol plants can be **retrofitted** with minimal changes to produce isobutanol alongside ethanol.
- Example: A 150-kilo litre/day(klp) ethanol plant can produce **125 klp ethanol + 20 klp isobutanol**.
- Costs are incremental, largely involving fermentation and distillation adjustments.

## Technical Considerations & Challenges

- **Miscibility Issues:** Isobutanol may not mix uniformly with diesel; **biodiesel additives** can improve blend stability.
- **Cetane Number:** Lower than diesel, potentially reducing ignition quality and causing engine **'knocking'**.

The **cetane number** is a measurement of diesel fuel's auto-ignition quality, indicating how quickly it ignites after injection into the engine.

- **Optimal Blend:** Experts recommend **up to 10% isobutanol**, balancing safety, engine performance, and emission benefits.

## 20. India's First Bamboo-Based Bioethanol Plant Inaugurated in Assam

### Why in News?

**Prime Minister Narendra Modi** inaugurated **India's first bamboo-based bioethanol plant** at Golaghat, Assam, marking a major step toward energy self-sufficiency and green energy promotion.

### About the Bamboo Ethanol Plant

- **Location:** Golaghat district, Assam.

- **Technology:** World's first zero-waste bioethanol facility using green bamboo.
- **Production Capacity:**
  - 48,900 metric tonnes of ethanol per year.
  - 11,000 tonnes of acetic acid.
  - 19,000 tonnes of furfural.
  - 31,000 metric tonnes of food-grade liquid carbon dioxide.
- **Feedstock:** 5 lakh tonnes of bamboo sourced annually from Assam, Arunachal Pradesh, and other northeastern States.

### Bioethanol: Key Facts

- **Chemical Profile:** High-octane biofuel (C<sub>2</sub>H<sub>5</sub>OH) produced biologically from **biomass** such as sugarcane, grains, bamboo, corn, and vegetable residues.
- **Applications:** Primarily used as a **gasoline additive**, with modern engines capable of running on pure ethanol.
- **Production Process:** Includes pretreatment of starch or cellulose, fermentation of sugars, distillation, and dehydration to fuel-grade ethanol.

## 21. POLYPROPYLENE PLANT

### Why in News?

Prime Minister laid the foundation for a ₹7,230-crore **polypropylene plant** at the Numaligarh Refinery, signalling Assam's growing role in India's energy and industrial landscape.

### Polypropylene:

- Polypropylene (PP) is a widely used, **durable, and flexible thermoplastic polymer** created by the polymerization of **propylene monomers**.
- Propylene, its raw material, is a **byproduct of refining processes**. Refineries can recover high-purity propylene for sale as a chemical

feedstock or to produce polypropylene themselves.

- Furthermore, the finished product, polypropylene, is used in oil and gas operations for components like **storage tanks, valves, and seals** due to its **chemical resistance and durability**.

### Significance:

- Vital for India's manufacturing sector, Polypropylene is a **key raw material** for a wide range of everyday and industrial products, from household items and textiles to automotive and medical equipment.
- Polypropylene is important in many businesses such as **packaging films, sheets, boxes, containers, bags, household goods, personal care products** etc.

## 22. WORLD'S FIRST TREATY TO PROTECT HIGH SEAS

### Why in the news?

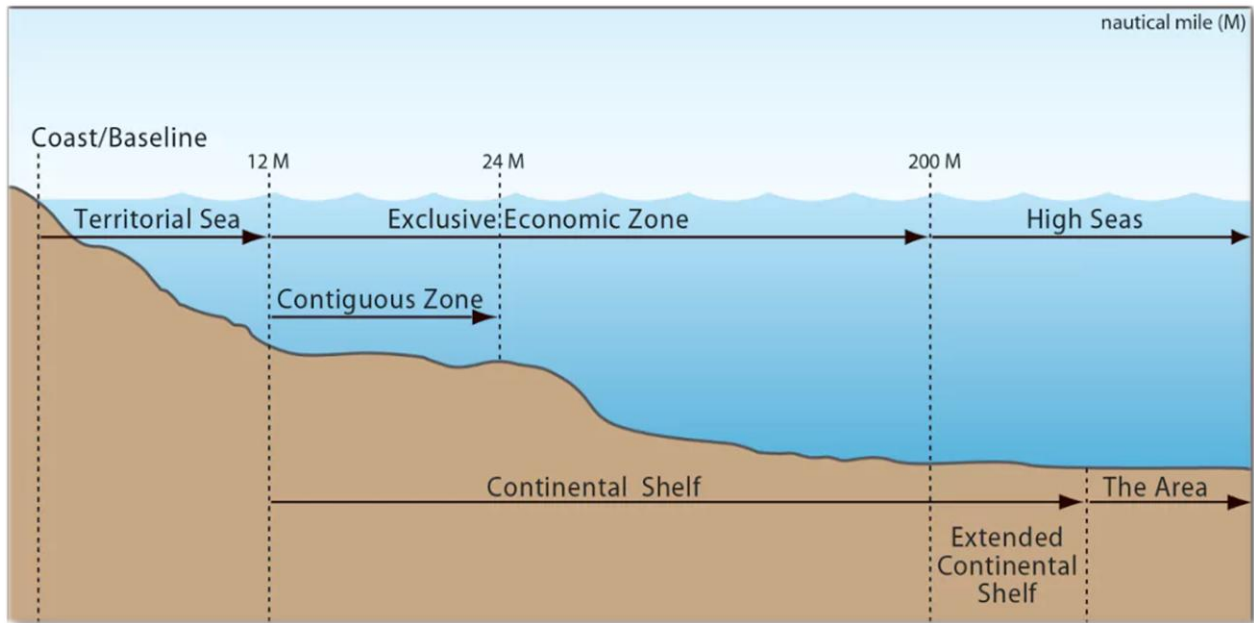
- On September 19, 2025, Morocco became the 60th nation to ratify the High Seas Treaty (also known as the Biodiversity Beyond National Jurisdiction or BBNJ agreement).

### About

- **High Seas Definition:** These are ocean areas beyond any single country's jurisdiction, vulnerable to overfishing, deep-sea mining, pollution, and climate change impacts.

### Treaty Provisions:

- The treaty is the **first legal framework to protect biodiversity in international waters**, which make up two-thirds of the world's oceans.



- Allows countries to establish **Marine Protected Areas (MPAs)** in international waters.
- **Regulates potentially destructive activities** such as deep-sea mining and geoengineering.
- Decisions are made multilaterally through **Conferences of Parties (COPs)** rather than by individual countries.
- **“30x30” Target:** The treaty is aligned with the global goal of protecting 30% of land and sea by 2030.
- **Ratification Process:** The treaty will legally come into effect 120 days after the 60th ratification, which occurred on September 19, 2025, meaning it will become binding in January 2026, after which countries will meet to finalise implementation, financing, and oversight.
- **Enforcement Challenges:** There is no independent enforcement body; countries must regulate their own ships and companies. For example, violations by ships under a nation’s flag are that country’s responsibility.

### Geopolitical Dynamics

- Major powers like the U.S., China, Russia, and Japan have yet to ratify, which could affect the effectiveness of the treaty.
- India has **signed the treaty (but not ratified)** to ensure that its ongoing and planned deep-sea exploration and potential mining operations, such as those in the Carlsberg Ridge and Central Indian Ocean Basin, are legally recognised and safeguarded.
- **Global Equity:** Small island nations, like Vanuatu, gain a voice in decisions that have historically been dominated by larger maritime nations.

## 23. GLOBAL FOOD WASTE

### Why in news?

According to the United Nations Environment Programme (UNEP), more than \$1 trillion’s worth of food is thrown away every year, while around 783 million people struggle with hunger.

### About

The **United Nations Environment Programme (UNEP) Food Waste Report**

released in **2024** ranks India **2nd globally** for total food waste, discarding **78.1 million tonnes annually**, behind China (108.6 million tonnes).

### Statistics as per UNEP report

- Top 3 countries by total food waste: China > India > USA.
- Average per capita food waste: **132 kg/year**, with **79 kg** from households.
- **India Specifics:**
  - **Total waste:** 78.1 million tonnes/year.
  - **Per capita waste:** approx. 55 kg/year.
  - Household waste forms a significant share of India's total food waste.



### Impact of Food waste

- Globally, food waste contributes **8–10% of greenhouse gas emissions**, putting pressure on land, water, and energy resources.

- Wasted food rotting in landfills emits **methane**, a potent greenhouse gas, accelerating climate change.
- Food waste uses up nearly **30 per cent of farmland worldwide** just to produce food that nobody ends up eating.
- Food waste is **not limited to rich countries**; middle- and lower-income countries have comparable household waste levels.
- Food waste mitigation directly links to **SDG 12 (Responsible Consumption & Production)**.

## 24. RARE EARTH MINERALS

### Why in News?

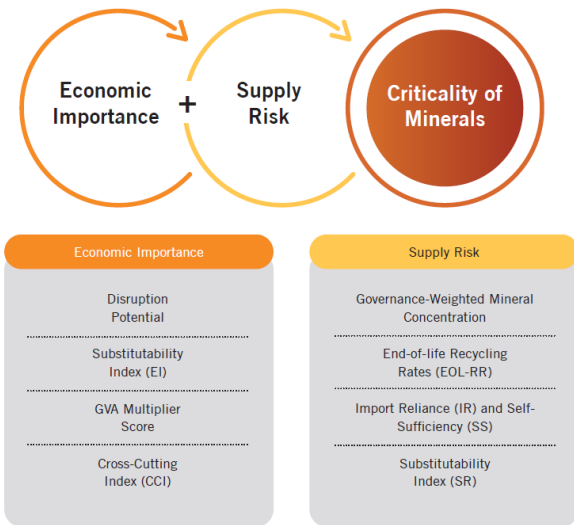
China's Ministry of Industry and Information Technology has introduced tighter rules to control the mining and processing of *rare earth elements (REEs)*.

### Global Scenario

- **China's Dominance:**
  - Holds **48.9% of global reserves** and mines **69% of the world's rare earth elements**.
  - Controls around **92% of the global supply chain**, especially refining and separation processes. In the last five years, China has been the *largest exporter*, accounting for **65-70% of global REE demand**.
- **Major Producers (after China):** U.S., Myanmar, Australia, Nigeria, Thailand.
- **Major Importers (2024):** Japan, Malaysia, China, Thailand, Republic of Korea.
- **Export Controls:** Beijing has tightened export restrictions on key elements like neodymium, dysprosium, and terbium, essential for electric vehicles, wind turbines, and high-tech weapons.

## Indian Scenario

- India holds **7.7% of global reserves**, yet contributes **less than 1%** of production ,



highlighting a significant resource-to-production gap.

- Most Indian deposits are found in **coastal monazite sands** of *Odisha, Tamil Nadu, Andhra Pradesh, and Kerala*.

## Institutional Setup:

- The Indian Rare Earths Limited (IREL, under DAE) is the main public sector player involved in mining and refining.
- Khanij Bidesh India Limited (KABIL) is a joint venture between **NALCO, HCL, and MECL**, established under the **Ministry of Mines** to secure critical mineral assets abroad.
- India, along with the U.S., Japan, and Australia, is part of the **Quad Critical Minerals Partnership**, seeking to diversify away from Chinese dominance.
- The government is considering expanding domestic production through the **Critical Minerals Mission** under the **Ministry of Mines**.

## SPECIES IN NEWS

### 25. ROSEWOOD TREE

#### Why in news?

- A recent study by the Institute of Wood Science and Technology (IWST), Bengaluru, found that Tamil Nadu has the lowest density of Indian rosewood trees in South India, just **2.85 trees per 0.1 hectare**, compared to **Karnataka's 6.19** and **Kerala's 5.38**.
- The lapse of the **Tamil Nadu Rosewood Trees (Conservation) Act, 1995** in February 2025 has raised concerns over increased exploitation.



#### Do You Know?

English Name : Indian Rosewood  
 Hindi Name : Sheesham  
 Tree Type : Deciduous  
 Origin : Native  
 Flowering time: Spring or Summer

#### About *Dalbergia latifolia*

- *Dalbergia latifolia* (Indian rosewood) is native to the **Nilgiris, Anamalai, and Parambikulam ranges**.
- Ecological role: Improves soil fertility via **nitrogen fixation**, acts as a **long-term carbon sink**, and serves as a **keystone species**.

- Only **17.2% of India's suitable rosewood habitat** is within protected areas while majority exposed to logging, land-use change, and climate impacts.
- Rosewood is highly valued in **furniture and handicrafts** due to its durable timber and so is called "the ivory of the forests".

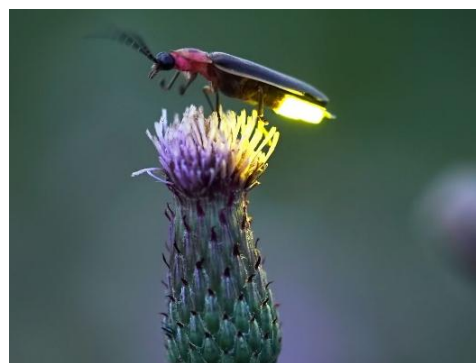
#### Additional Info

- Rosewood is listed in **CITES Appendix II**, meaning trade is regulated but not banned.
- The **Indian Forest Act, 1927** empowers states to regulate felling and transport of valuable timber species.
- India is a major exporter of rosewood furniture.

### 26. FIREFLIES

#### Why in News?

A Tamil Nadu Forest Department study in the **Anamalai Tiger Reserve (ATR)** identified **eight species of fireflies** and monitored their population trends, highlighting their importance as ecological indicators.



#### About Fireflies (Lampyridae)

- **Classification & Habitat:** Bioluminescent beetles found in tropical forests, grasslands, and wetlands; thrive in **undisturbed soils, high humidity, clean water, and low artificial light**.

- **Lifecycle:** Seasonal activity post-monsoon; remain as larvae in soil otherwise; adult life approx. 2 months.
- **Morphology & Bioluminescence:** Produce **cold light via luciferin-luciferase reaction** (green to yellow). Light signals serve for **mating and predator deterrence**.

#### Ecological Significance

- Synchronous flashing of fireflies indicates **pollution-free areas** and healthy ecosystems.
- Serve as **bioindicators**; population changes reflect environmental disruptions impacting moths, bats, amphibians, and other nocturnal species.
- Fireflies contribute to **soil health and insect population control** via larval predation.

#### Threats

- Declining populations due to **urbanization, deforestation, pesticides, and light pollution**.
- Sensitive to even small environmental changes, highlighting ecosystem vulnerability.

#### Anamalai Tiger Reserve (ATR)

- Declared **Tiger Reserve in 2007**; flanked by **Parambikulam Tiger Reserve, Chinnar Wildlife Sanctuary, Eravikulam National Park**.
- Features **evergreen, deciduous, shola forests, montane and marshy grasslands**.
- Part of ATR (**Kariyan Shola, Grass Hills, Manjampatti**) is recognized as **UNESCO World Heritage Site**.
- Home to key fauna: **tiger, asiatic elephant, sambar, leopard, and fireflies**.

## AGRICULTURE

### 27. BHARATI INITIATIVE

#### Why in News?

The **Agricultural and Processed Food Products Export Development Authority (APEDA)** has launched the **BHARATI** (Bharat's Hub for Agri tech, Resilience, Advancement, and Incubation for Export Enablement) **initiative**, to accelerate India's agri-food exports, foster innovation among startups, and create globally competitive export-ready solutions.

#### About the Initiative

- **Purpose:** Bridge the gap between **innovation in agri-food startups** and **global market standards**, addressing challenges like perishability, packaging, logistics, and compliance.
- **Scope:** Supports **100 high-potential startups** in its first phase, targeting contribution to **APEDA's goal of USD 50 billion in agri-food exports by 2030**.
- **Focus Products:** GI-tagged foods, organic products, superfoods, processed foods, livestock products, and AYUSH-based products.
- **Technology Integration:** Startups receive access to **AI, IoT, blockchain, and agri-fintech solutions** to enhance traceability, supply chain efficiency, and export readiness.

#### Program Features:

- 3-month acceleration program to meet **international food safety and quality standards**.
- Mentorship from universities, IITs/NITs, and industry accelerators.
- Special emphasis on **sustainability**, reducing food wastage, and improving cold-chain logistics.

#### Role of APEDA

- Established under **APEDA Act, 1985**, APEDA promotes and develops exports



- of agricultural and processed foods.
- Provides support for **marketing, quality assurance, transport logistics, value addition**, and participation in global trade fairs.
- Manages schemes for **capacity building, infrastructure development, and export facilitation**.
- Works with state agencies, research institutions, and industry bodies to enhance **export competitiveness**.

### 28. INDIA'S CAUTIOUS STANCE ON U.S. CORN IMPORTS

#### Why in News?

The United States has expressed interest in exporting corn (maize) to India. However, India remains cautious due to concerns over **Genetically Modified (GM) crops**, strong domestic production, and the need to safeguard farmer livelihoods and strategic ethanol objectives.

#### Why India Limits Corn Imports from the U.S?

- **GM Crop Restrictions:** India permits GM cultivation only for cotton. With **94% of U.S. corn being GM in 2024**,

importing it is legally barred under India's biosafety regulations.

- **Farmer Protection & Market Stability:** Cheap imports could disrupt domestic maize-for-ethanol supply chains, threatening new farmers' income. Policymakers prioritize **Atmanirbhar Agriculture** by ensuring domestic maize retains competitive value.
- **Anti-Dumping Concerns:** U.S. corn prices are nearly **70% of Indian maize**, which, even after adding shipping and marketing costs, could qualify as dumping, potentially harming domestic farmers.
- **Ethanol Self-Reliance:** India's **20% ethanol blending target** seeks to reduce dependence on imports, save foreign exchange (approx. USD 10 billion annually), and boost domestic corn-based ethanol production.

#### India's Maize Profile

- **Global Standing:** 5th largest producer (FAO, 2023), but only the 14th largest exporter (UN-COMTRADE, 2022). Domestic yields remain under **4 t/ha** compared to a global average of **6 t/ha**.
- **Major Growing States:** Karnataka, Madhya Pradesh, Bihar, Telangana, and Maharashtra.
- **Climate Requirements:** Frost-sensitive, thrives at **15–45°C** with adequate water. Highly responsive to sunlight; upper leaf illumination is essential for grain filling.
- **Soil & Water Needs:** Prefers well-drained, loamy soils; water requirement **500–800 mm** per season. Vulnerable to waterlogging and poor drainage.
- **Industrial Significance:** About **14–15% of India's maize** is used for industrial purposes, starch, ethanol, oils, alcoholic

beverages, food sweeteners, cosmetics, textiles, films, gums, and paper.

- **Innovation:** Indian Agricultural Research Institute (IARI) developed India's first "**waxy**" **maize hybrid** high in amylopectin starch, ideal for ethanol production.

## 29. INDIA'S COTTON SECTOR

### Why in News?

The Union government has **extended the 11% import duty waiver on cotton**, raised the **Minimum Support Price (MSP) for 2025–26**, and expanded procurement efforts to **stabilize prices** and protect farmers amid a **15-year low in domestic production**.

### About

- **"White Gold" of India:** Cotton contributes **approx. 25% of global output**; supports **6 million farmers** and **40–50 million workers** in processing and trade.
- **Historical Significance:** Cultivated since the **Indus Valley Civilization**; known for high-quality textiles. Colonial policies converted India into a raw cotton supplier for British mills.
- **Climate & Soil Requirements:** Prefers warm, sunny, frost-free conditions with **adequate humidity**. Thrives in deep alluvial soils (North), black cotton soils (Central), and red-black mixed soils (South). Sensitive to **waterlogging**; mostly a **Kharif crop**.
- **India's Global Position:** Second-largest producer and consumer after China; ranks **36th in productivity** despite largest acreage.



### Challenges Facing the Cotton Sector

- **Climate Vulnerability:** Erratic rainfall, droughts, floods, rising temperatures, and declining soil fertility threaten yields.
- **Low Productivity:** Traditional practices and lack of modern inputs keep yields at **480 kg/ha vs 800 kg/ha global average**.
- **Pest & Disease Pressure:** Pink Bollworm and fungal infections; decreasing effectiveness of Bt cotton.
- **Economic Pressures:** Rising input costs, low MSP adherence, and cheap imports reduce farmer profitability.
- **Market Challenges:** Limited access to organized markets; global price fluctuations affect exports and competitiveness.

### 30. INDIA'S TEA INDUSTRY

#### Why in News?

The Executive Director of the International Tea Committee has highlighted India's potential to emerge as a **global tea superpower**, given its strong production capacity, extensive domestic consumption, and expanding export opportunities.

#### Current Status of India's Tea Market

- **Major Producers:** India is the **2nd largest producer and consumer** of tea and the **3rd largest exporter** globally. Kenya leads as the top exporter, with nearly all its production shipped abroad, followed by China.
- **Tea-Producing Regions:** Major Indian tea-growing states include **Assam**

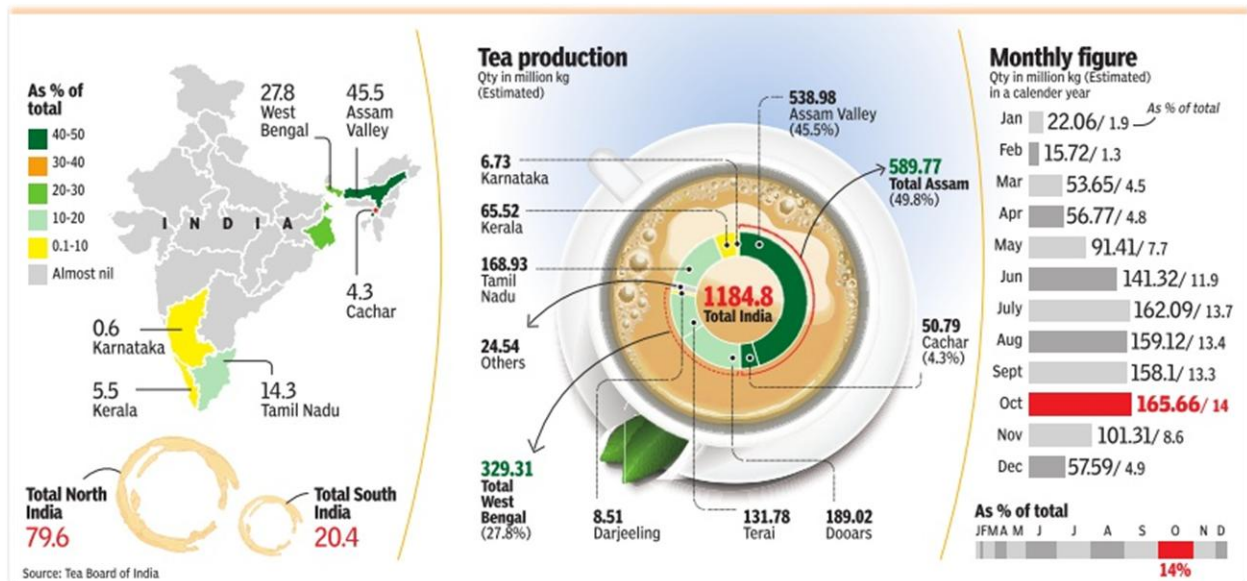
(Assam Valley and Cachar), West Bengal (Dooars, Terai, and Darjeeling), Tamil Nadu, and Kerala, collectively accounting for 96% of national output.

- **Consumption:** India remains a top domestic consumer, using **80% of its production**, with a per capita consumption of **840 gm/year** (compared to Turkey's 3 kg/year).

**support** for cultivation, production, and marketing.

- **Growth Conditions:**

- **Climate:** Tropical and subtropical; thrives in hot, humid conditions.
- **Temperature:** Ideal range **20–30°C**; above 35°C or below 10°C damages plants.



- **Exports:** India exports to over **25 countries**, with Russia, Iran, UAE, USA, UK, Germany, and China among the top importers. Black tea constitutes **96% of exports**, alongside green, herbal, masala, and flavoured teas.

### About Tea

- **Origin & Plant:** Derived from **Camellia sinensis**, tea is the world's second most consumed beverage.
- **Tea Board of India:** Established under the **Tea Act, 1953**, it operates under the Ministry of Commerce, with headquarters in Kolkata and overseas offices in London, Dubai, and Moscow. It provides **technical and financial**

- **Rainfall:** Requires **150–300 cm of well-distributed rainfall** annually.
- **Soil:** Prefers **slightly acidic, porous soils** allowing free water percolation.

### Challenges Confronting the Industry

1. **Weather-Driven Decline:** Extreme heat in May 2024, followed by Assam floods, **reduced production by 30%**, bringing output down to **90.92 million kg**, the lowest in over a decade.
2. **Stagnant Prices:** Assam, responsible for 55% of national production, faces **persistent price stagnation**, affecting farmer incomes.
3. **Intense Competition:** Competing with global producers like **Kenya and Sri Lanka**, India struggles to maintain export share.

4. **Rising Input Costs:** Costs for fertilizers, labour, and irrigation have risen **9–15%** over the past decade, while tea prices increased by only **4%**. A **ban on 20 key pesticides** has further escalated production costs.

### 31.ANNUAL LICENSING POLICY FOR OPIUM CULTIVATION

#### Why in News?

The **Union Government** announced the **annual licensing policy for opium poppy cultivation** in **Madhya Pradesh, Rajasthan, and Uttar Pradesh** for 2025–26, increasing the number of eligible farmers to **1.21 lakh**.

#### About

- **Objective:** Maintain consistent opium gum supply for pharmaceutical use and support Indian pharmaceutical companies under the **“Make for World”** vision.



- **Regulation & Incentives:**
  - Sets eligibility criteria for farmers.
  - Offers incentives to high-performing cultivators.
- **Modernization:** The **Government Alkaloid Factory at Neemuch (Madhya Pradesh)** has achieved **WHO Good Manufacturing Practices (GMP) certification**, ensuring global-quality standards in alkaloid extraction.

#### Opium Poppy (*Papaver somniferum L.*)

- **Family:** Papaveraceae; an **annual medicinal herb**.
- **Alkaloids Produced:** Morphine, codeine, thebaine, widely used as **painkillers, antitussives, and antispasmodics**.
- **Other Uses:** Edible seeds and seed oil.
- **Favourable Conditions:**
  - Temperate climate; winter cultivation possible in sub-tropical regions.
  - Well-drained, fertile light black or loamy soil with pH approx. 7.0.
  - Frost, heavy rain, or cloudy conditions reduce quality and yield.

#### Opium Cultivation in India

- **Historical Context:** Cultivated since the 10th century; became a **federal monopoly under Mughals**, later controlled by the British (1773), and now **regulated by the Indian government**.
- **Global Status:** India is the **only country authorized by the UN Single Convention on Narcotic Drugs (1961) to produce gum opium**. Other nations grow poppy but do not extract opium.
- **Legal Framework:**
  - NDPS Act, 1985: Opium cultivation is **prohibited without a license** from the **Central Bureau of Narcotics (CBN), Gwalior**.
  - Farmers must sell entire production to CBN at **government-fixed prices**.
  - Cultivation is restricted to selected tracts in **Madhya Pradesh, Uttar Pradesh, and Rajasthan**.

The policy ensures a steady supply of alkaloids for medical and palliative use while promoting **self-reliance in opium**

**and alkaloid production** via  
government-run factories.

## SCIENCE AND TECHNOLOGY

### 32. VIKRAM 32-BIT CHIP

#### Why in the news?

At Semicon India 2025, PM Modi receives first Made in India Vikram 32-bit chip, designed and developed by **the Vikram Sarabhai Space Centre** of the Indian Space Research Organisation (ISRO) and the Semiconductor Laboratory (SCL), Chandigarh.

#### Vikram 32-bit microprocessor

The Vikram 32-bit microprocessor, formally known as VIKRAM3201, is **India's first fully indigenous 32-bit space-grade microprocessor**, developed by ISRO's Semiconductor Laboratory (SCL) in Chandigarh. This chip succeeds the VIKRAM1601 16-bit processor, which has powered ISRO's launch vehicles since 2009.

#### Key Features

- VIKRAM3201 uses a 32-bit architecture, enabling it to process data in 32-bit chunks and support complex calculations, including floating-point operations.
- The chip can withstand extreme environmental conditions in space, such as temperatures from **-55°C to 125°C**, high levels of radiation, and mechanical stresses encountered during rocket launch.

#### Applications and Significance

- **VIKRAM3201** was validated during the **PSLV-C60** mission and is designed to

support navigation, control, and mission management functions within ISRO's launch vehicles, providing vehicle stability and guidance during missions.

- This creation represents a breakthrough in India's journey towards semiconductor self-reliance and technological independence, aligning with the **Atmanirbhar Bharat** initiative.
- This microprocessor also has promising potential for use in sectors such as defence, aerospace, automotive, and energy, in addition to space applications.

### 33. GREEN HYDROGEN POWERED TRAIN

#### Why in the news?

Indian Railways recently reported that a hydrogen-powered train, developed at the Integral Coach Factory in Chennai.

#### About

- The train is India's first hydrogen-powered train, engineered as part of India's push towards eco-friendly rail transport.
- The train operates on a pilot route between Jind and Sonipat in Haryana,



covering 356 kilometres with two daily round trips.

### Key Features

- It features a powerful 1,600 horsepower hydrogen engine that emits only water vapor, achieving **zero direct emissions** and higher energy efficiency compared to battery alternatives.
- Advanced safety measures are incorporated, including:
  1. Leak detection.
  2. Flame sensors.
  3. Pressure relief valves.
  4. Extensive testing of control systems
  5. International safety certification from TUV-SUD Germany.

### Significance

- This is a welcome sign of progress for the **National Green Hydrogen Mission**, which aims to produce at least **five million metric tonnes** of green hydrogen per year by 2030.
- Hydrogen trains provide higher energy efficiency and operate more quietly than diesel engines, improving passenger comfort and **reducing noise pollution** along rail routes.
- A milestone on the way to achieving nationwide **net zero emissions by 2070**, and building an **Atmanirbhar Bharat** in **advanced green technologies**.

## 34. MULTIFUNCTIONAL HEALING PAD

### Why in the news?

Researchers at the Jawaharlal Nehru Tropical Botanic Garden & Research Institute (JNTBGRI), Palode, have tapped into the wound-healing properties of the **red ivy plant** to develop an innovative and

multifunctional wound-healing pad using nanomaterials like electro-spun.

### Key Features of the Wound-Healing Pad

- **Main Bioactive Compound:** Acteoside, a natural molecule isolated from the red ivy plant, shows high wound-healing efficacy at a low concentration (0.2%).
- **Multilayer Design:**
  1. The **first** layer inhibits microbial growth and promotes healing through acteoside, neomycin sulfate, and FDA-approved polymers.
  2. The **second** layer, made of sodium alginate sponge, absorbs wound exudate.
  3. The **third** layer contains activated carbon to absorb and neutralize odour.

### Significance

- This is India's first multifunctional herbal wound dressing pad, integrating traditional medicinal knowledge with advanced nanomaterial technology.
- It is designed to accelerate wound healing, offer protection, be environmentally friendly (biodegradable), and affordable compared to existing wound care solutions.
- Complies with **ISO** safety standard, showed; no genotoxicity or irritation in animal studies
- **Patent:** A provisional patent has been filed for this pad and its manufacturing process.

## 35. FLEXIBLE AQUEOUS ALUMINIUM ION BATTERY

### Why in the news?

Researchers in Bengaluru from the **Centre for Nano and Soft Matter Sciences (CeNS)**

in collaboration with the **Centre for Nano Science and Engineering (CeNSE)** have developed a novel battery technology that could serve as an alternative to traditional lithium-ion batteries.

### About

A novel battery technology has been developed that makes the battery flexible

#### *Bio-enablers:*

Bio-AI hubs, Bio foundries, and Biomanufacturing hubs to accelerate biotechnology commercialization.

enough to be folded like a piece of paper and is safe enough to be touched without any worry.

### Significance

- The battery maintains its functionality even when fully bent or folded in half.
- To demonstrate this capability, scientists

#### *Why is it better than other traditional lithium-ion batteries?*

- Commonly used Lithium-ion batteries, are prone to overheating and explosion.
- Whereas these flexible batteries uses aluminium—one of Earth's most abundant metals—and a water-based solution. This combination makes it safer, cheaper, and much kinder to our environment.
- It could protect from battery explosions and environmental hazards, and also reduce the power requirement of our devices.

continuously powered an LCD display

while bending the battery at extreme angles.

- This advancement paves the way for future devices that can be rolled up or seamlessly integrated into wearable technology within clothing.

### Applications

Potential developments could include:

- Flexible smartphones.
- Safer electric vehicles.
- Wearable devices that can be integrated into clothing.

Moreover, the use of Aluminum, an abundant and environmentally friendly resource, supports broader sustainability goals.

## 36. BIO E3 POLICY

### Why in the news?

The International Centre for Genetic Engineering and Biotechnology (**ICGEB**), New Delhi, hosted **BioE3@1** to mark the first anniversary of the BioE3 Policy, a flagship initiative of the Government of India integrating Biotechnology with *Economy, Environment, and Employment*.

### About the policy:

#### Key Objectives:

- Promote advanced biomanufacturing technologies to produce high-value bio-based products efficiently and sustainably.
- This policy aligns with India's green growth vision, the **Lifestyle for Environment (LiFE)** movement, and the National goal **net-zero carbon emissions**.

## SPACE

### 37. MAPPING THE DUSTY VEIL OF MILKY WAY

#### What's in the news?

Scientists from **Aryabhata Research Institute of Observational Sciences (ARIES)**, an autonomous institute under the Department of Science and Technology, Govt. of India, used the data from more than 6,000 open clusters (a type of star clusters), to chart the distribution of this interstellar dust across the Milky Way's galactic plane or disk.

Most of these clusters are **located close to the thin disk of the Galaxy, where interstellar matter is concentrated, and star formation occurs predominantly.**

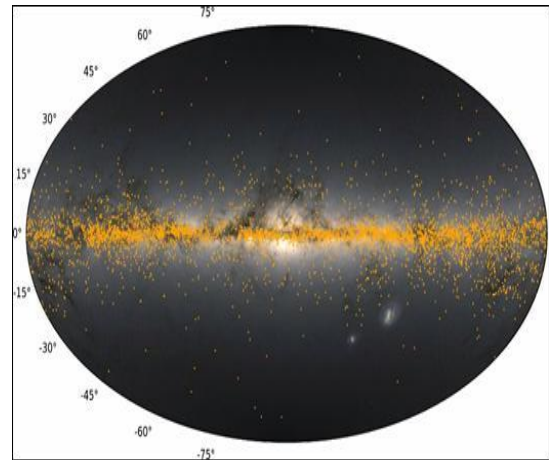
#### Preview on our milky way

- *Our galaxy, the Milky Way, is filled with vast clouds of interstellar dust and gas that can block or dim the light from stars. This is called as 'extinction' of star light.*
- *Understanding how the dust is spread across the Galaxy helps scientists learn more about where stars form and the structure of the Milky Way.*

#### The study highlights

- The irregular thickness of the dust layer within our Galaxy reveals its dynamic and intricate structure.
- This mapping gives astronomers a clearer picture of how dust is arranged in our part of the Galaxy, which is crucial for accurately **studying stars and other galaxies.**

- It also confirms that much of the dust is packed into a narrow band where new stars are actively forming.



- Understanding the dust's spatial distribution helps,
  1. Improve the accuracy of astronomical observations.
  2. Influences the search for exoplanets.
  3. Aids in planning future space exploration missions.
  4. The study also highlights, the need for future observations, especially of more distant regions, to build an even more complete three-dimensional view of the Milky Way's dusty structure.

## HEALTH

### 38. AONEUM-04

#### Why in the news?

The **Technology Development Board (TDB)** under the Department of Science and Technology has provided support to Aodh Lifesciences Pvt Ltd., Hyderabad for the development of a domestically produced antibiotic nebulization suspension for treating pneumonia (**AONEUM-04**) and tackling **antimicrobial resistance (AMR)**.

The innovation has successfully cleared pre-clinical trials and will undergo Phase III clinical trials before commercialization.

#### Key Objectives

- The new technology marks a major advancement in how antibiotics are delivered, moving beyond traditional oral and intravenous methods.
- AONEUM-04 utilizes nebulization for direct antibiotic delivery to the lungs, resulting in higher concentrations at the infection site with reduced side effects throughout the body.
- This innovative formula features sustained release, strong adherence to lung tissue (**muco adhesion**), and the ability to disrupt harmful biofilms, which helps limit the development of antibiotic resistance.
- The therapy is especially significant for India, given that pneumonia remains a leading cause of death among children, and **antimicrobial resistance (AMR) (termed a 'Silent pandemic' by WHO, contributing to nearly 5 million deaths annually)**.

#### Significance

- This project represents a significant stride in addressing **pneumonia** and **antimicrobial resistance (AMR)**, two pressing healthcare challenges in India and worldwide.
- By supporting indigenous innovation like **AONEUM-04**, TDB is reinforcing India's capability to deliver affordable, scalable, and globally relevant healthcare solutions.

#### Did you know?

"Nightmare bacteria" refers to bacterial strains resistant to all antibiotics and is capable of transferring resistance to other bacteria.

### 39. BROADLY NEUTRALISING ANTIBODIES (bNAbs)

#### Why in the news?

Researchers have found in a study that Indian strains of HIV were most effectively neutralised by bNAbs targeting the virus's **V3 glycan**.

#### What is v3 glycan?

A V3 glycan is a carbohydrate (glycan) attached to the third variable loop (V3) of the HIV-1 envelope protein, forming a key epitope recognized by broadly neutralizing antibodies.

These antibodies are a crucial target for HIV vaccine research because they can recognize and neutralize a wide range of HIV strains.


- In contrast, antibodies aimed at the V1/V2 apex of the viral spike protein are far less potent in neutralizing Indian HIV strains, likely due to higher variability and structural differences in that region.

## Significance

### HIV in India

Novel treatments for infections of the virus may not work everywhere in the same way

- In 1994, researchers discovered antibody b12, which neutralised HIV far more effectively than pooled plasma
- This led to identifying broadly neutralising antibodies (bNAbs) that recognise conserved regions of the viral envelope
- HIV's genetic diversity, even within one patient, means no single bNAb can neutralise every strain
- A new study compared the world's 14 top bNAbs against Indian and South African HIV variants, revealing regional differences
- Indian strains responded strongly to V3 glycan and CD4-site antibodies but resisted V1/V2-apex antibodies
- Researchers proposed a three-antibody cocktail, BG18, N6, PGDM1400, to overcome HIV resistance and enable region-specific strategies



Transmission electron micrograph of HIV-1 virus particles (red) replicating from an infected H9 T-cell (blue). US NIAID

- HIV can be classified into 'subtypes', which are similar but not identical variants of the virus. Each subtype has innumerable strains that circulate.
- No single bNAb can block all of them. Even within the same subtype, strains can differ in how sensitive they are.
- When viruses from India were compared with those from South Africa, the researchers found that Indian strains were more sensitive to antibodies such as N6, 10-1074, and BG18, but slightly more resistant to **CAP256-VRC26.25** (a type of antibody).
- The results of the study unearth opportunities for region-specific HIV prevention strategies
- **The study highlights a crucial insight for HIV researchers worldwide:** due to HIV's extensive genetic variability, the

virus evolves uniquely across different regions of the world.

- As a result, new treatments and vaccines may not have uniform effectiveness globally.
- This means that strategies to combat HIV must be tailored to the specific genetic variants prevalent in each region to ensure maximum efficacy and success in treatment and prevention efforts.

## 40. ADFALCIVAX

### Why in the news?

The Indian Council of Medical Research (ICMR) has licensed India's first indigenous multi-stage malaria vaccine, AdFalciVax, to five pharmaceutical companies.

### Key Features

- Targets the **deadliest malaria parasite, Plasmodium falciparum.**
- Multi-stage vaccine targeting two critical phases of the parasite's life cycle:
  1. Pre-erythrocytic (liver) stage to prevent infection.
  2. Sexual stage to block transmission of the parasite via mosquitoes.
- Recombinant chimeric vaccine combining multiple antigens for enhanced protection.

### Significance

- AdFalciVax represents a major breakthrough as India's first indigenous multi-stage malaria vaccine, marking a significant milestone in the country's fight against malaria.
- The vaccine aligns with India's goal to eliminate indigenous malaria cases by **2027** and achieve complete eradication by **2030**.
- Malaria remains a serious health challenge, and despite major progress in

reducing cases and deaths, pockets of transmission continue, especially in tribal and border areas.

- AdFalcivax offers a strategic advantage by not only protecting individuals from infection but also blocking the transmission cycle in communities, which current control methods do not fully address.
- Its **affordability, scalability, and thermal stability** make it well-suited for wide distribution across diverse Indian regions.

#### 41. BRAIN-EATING AMOEBIA

##### Why in the news?

Kerala witnessed an alarming rise in (Primary Amoebic Meningoencephalitis) PAM cases with 69 confirmed cases and 19 deaths reported by September, more than double previous years. Cases are scattered, highlighting challenges in containment.

##### What's new?

- Recent cases are widely scattered, not clustered around single water sources as in some previous years, complicating containment and epidemiological tracking.
- The age range of patients is very broad, from infants as young as **three months** to elderly persons up to **91 years**, emphasizing widened the demographics vulnerability.

***For more information refer August pulse.***

#### 42. SICKLE CELL ANAEMIA

##### Why in the news?

There's been an ongoing struggle for disability justice for people with sickle cell

anaemia, highlighting how the Rights of a person with disabilities hasn't provided the promised reservations in housing and employment for the sickle cell patients.

##### About

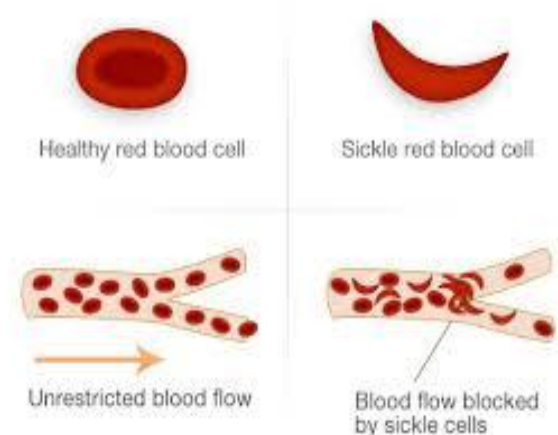
Sickle Cell Anaemia is a hereditary blood disorder caused by a mutation in the haemoglobin-beta gene, leading to abnormally shaped (**sickle-shaped**) **red blood cells** that impair oxygen transport and blood flow.

##### Symptoms

Chronic anaemia, pain crises (sickle cell crisis), fatigue, delayed growth, acute chest syndrome, stroke risks, and organ damage.

##### Treatment and Cure

No widely accessible permanent cure yet. Bone marrow or stem cell transplantation is curative but limited by donor availability and cost.



## DEFENCE

### JOINT EXERCISES/DRILLS

#### 43. YUDH ABHYAS ARMY EXERCISE

##### Why in News?

The **Indian Army** and the **United States Army** have begun their most extensive joint military exercise to date, **Yudh Abhyas**, at **Fort Wainwright** in **Alaska**.



##### About the Exercise

**Yudh Abhyas** is an **annual bilateral military exercise** conducted between the **Indian Army** and the **US Army**, with the goal of strengthening defence cooperation. It offers a framework for both forces to **exchange best practices** and improve mutual comprehension across various military operations.

##### Key Focus Areas

The joint training concentrated on:

- Combined practice in **counter-terrorism, peacekeeping missions, and high-altitude warfare**.
- Executing drills and simulations for operations in **extreme cold** and challenging, rugged environments.
- Improving coordination during **Humanitarian Assistance and Disaster Relief (HADR)** operations.

#### 44. EXERCISE ZAPAD 2025

##### Why in News?

The **Indian Armed Forces** contingent recently took part in the multilateral military drill, **Exercise Zapad 2025**, which was held in Russia. The drills were conducted at the **Mulino Training Ground** in **Nizhny Novgorod**.

##### About Exercise Zapad 2025

- **Zapad 2025** is a major **multilateral military exercise** organized primarily by **Russia and Belarus**. The exercise is structured to simulate scenarios of **high-intensity conventional warfare** and to practice **counter-terrorism operations** within a multinational framework.
- The Indian participation was a Tri-Service contingent, involving personnel from the **Indian Army, Indian Air Force, and Indian Navy**.

##### Objectives

The main goals of the Zapad 2025 exercise were:

- I. To **reinforce defence collaboration**.
- II. To **improve operational synergy**.
- III. To **develop joint operational capacity**.

#### 45. EXERCISE YUDH KAUSHAL 3.0

##### Why in News?

The **Indian Army** recently concluded **Exercise Yudh Kaushal 3.0** in the challenging, **high-altitude Kameng region** of **Arunachal Pradesh**, demonstrating its readiness and competence in operating within harsh terrain.

## About

- This extensive drill showcased the flawless **integration of advanced technology**, tactical innovations, and superior professional expertise.
- Key manoeuvres highlighted **multi-domain operations**, including the use of **drone-based surveillance**, **precision targeting**, and integrated **air-land coordination**.
- A significant feature was the first operational deployment of the newly raised **ASHNI platoons**.
- The exercise also featured the **active collaboration of the Indian Civil Defence Industry**, reinforcing the nation's broader **"Decade of Transformation"** initiative.
- The overall effort validated the Army's ability to maintain combat readiness in severe conditions while committed to embracing **unmanned platforms** and **multi-domain strategies** for future conflicts.



## 46. Exercise AIKYA

### Why in News?

The **National Disaster Management Authority (NDMA)** and the **Indian Army's Southern Command** jointly organized a two-day national symposium named

**"Exercise AIKYA,"** centered on enhancing **disaster management** capabilities.

### Key Focus Areas

- The event featured various **simulations, technology discussions, and expert perspectives** aimed at improving national disaster preparedness.
- It underscored the **vital role of the defence forces** in disaster response and emphasized the significance of leveraging **technology** for effective management.
- The symposium paid special attention to the vulnerability of the **southern states** of India, which face frequent threats from **cyclones and floods**.

## DEFENCE TECHNOLOGY

### 47. TECHNOLOGY PERSPECTIVE AND CAPABILITY ROADMAP (TPCR-2025)

#### Why in News?

The Ministry of Defence's **Technology Perspective and Capability Roadmap (TPCR) 2025** was recently detailed, outlining the planned acquisition of advanced weaponry over the next 15 years.

#### Planned inductions include:

Across the **Tri-Services**, planned inductions include:

1. Hypersonic missiles
2. Nuclear propulsion systems
3. Directed-energy systems
4. Unmanned platforms

#### What is it?

The **Technology Perspective and Capability Roadmap (TPCR) 2025** is a key strategic document issued by the Ministry of Defence (MoD). It specifies the technological and capability requirements of the Indian armed forces for the subsequent **15-year period**.

# TECHNOLOGY PERSPECTIVE AND CAPABILITY ROADMAP (TPCR-2025) INDIA'S FUTURE ARSNAL: 15-YEAR VISION

## WHY IN NEWS ?

MOD'S TPCR-2025  
DETAILS 15-YEAR  
ADVANCED-DVANCED  
WEAPON  
ACQUISITION PLAN  
PLAN

PLANNED INDUCTIONS:  
HYPERSONIC MISSILES,  
NOFUSION SYSTEMS,  
DIRECTED-ENERGY SYSTEMS,  
UNMANNED PLATFORMS

AI-ENABLED  
CONFLICTS

NUCLEAR  
PROPUSION SYSTEM

## PRIMARY OBJECTIVE

GUIDE DOMESTIC INDUSTRY,  
PROMOTE  
IMOVENGIZATION,  
SELF-RELIANCE  
(AATMANIHAR BHARAT)

## KEY FEATURES

TRI-SERVICES INDUCTIONS:  
HYPERSONIC, NUCLAR PDON (NAVY),  
DIRECTED-DIRECTIC (AIR FORCE),  
MODERNIZATION: FUBAY)  
GRIM ANNEVCARMS, AI,  
QUANTUM  
COMMUNICATION



MINISTRY OF DEFENCE, INDIA

### Primary Objective:

- To guide domestic defence industry and academic institutions, thereby promoting indigenous production and self-reliance (Aatmanirbhar Bharat) in defence technology.
- The TPCR aims to ensure the military is prepared to address **emerging multi-domain warfare** challenges, which encompass cyber, space, and AI-enabled conflicts.

### Key Features:

The roadmap also focuses on force modernization, such as the Army's planned procurement of **Future Ready Combat**

**Vehicles (FRCVs)** and the wide-scale adoption of **Unmanned Platforms, Artificial Intelligence (AI), and quantum communication** across all services to enhance deterrence and operational strength.

## 48.INDIA'S FIRST OVERSEAS DEFENCE MANUFACTURING FACILITY

### Why in News?

India's first overseas defence manufacturing plant was recently inaugurated in **Berrechid, Morocco**.

- The facility was established by **Tata Advanced Systems Limited (TASL)**, a private Indian entity, in partnership with **DRDO**.

- It was launched by the Defence Minister of India alongside his Moroccan counterpart.

### Core Details and Aim

- **Location:** Berrechid, Morocco (in 2025).
- **What it is:** A 20,000 sq. meter production facility set up by TASL, signifying India's first private defence manufacturing unit in Africa.
- **Goal:** To advance India's defence vision of "**Make with Friends, Make for the World,**" reinforce the India–Morocco strategic partnership, boost defence exports, and support stability in the regional security environment.

### Key Production and Features

- The plant will manufacture the **Wheeled Armoured Platform (WhAP) 8x8 Modular Combat Platform**, which was jointly developed by DRDO and TASL, for the Royal Moroccan Army.
- The **WhAP** offers flexible configurations, including an **Infantry Fighting Vehicle** and an **Armoured Personnel Carrier**, featuring advanced mobility, protection, and remote weapon systems.
- A notable commitment is to **local sourcing**, with one-third of components initially procured from Morocco, with plans to increase this to 50 percent.

### Strategic Importance

This venture holds strategic value by positioning **Morocco as an export hub** for both Africa and Europe. It deepens diplomatic and economic ties between India and Morocco, creates local employment, develops a local supplier ecosystem, and significantly **boosts India's defence exports**.

## 49. TEST FIRE AGNI-PRIME

### Why in news?

India successfully test-fired the **Agni-Prime missile** from a **rail-based mobile launcher**, a first-of-its-kind launch that enhances the mobility and stealth of India's strategic deterrence.

### About

India successfully test-fired the **Agni-Prime (Agni-P)**, a next-generation, nuclear-capable intermediate-range ballistic missile, utilizing a **rail-based mobile launcher**. This inaugural launch of its kind, developed by **DRDO** in collaboration with the **Strategic Forces Command (SFC)**, substantially strengthens India's strategic deterrence posture.

### Aim and Features

- The test seeks to provide India's nuclear doctrine with a flexible, survivable, and **rapid-response capability** by diversifying its launch platforms.
- The missile has a range of up to **2,000 km** and is housed in a **canisterized system** for safety and quicker deployment.
- Its **rail mobility** allows it to move freely across the national network, making launch sites less predictable and significantly enhancing its **stealth and resilience** against any pre-emptive strikes.

### Significance

This achievement places India among a select group of nations possessing **rail-based canisterized launch systems**. The added operational flexibility complements existing road and silo-based systems, complicating adversary targeting and strengthening the survivability of **India's nuclear triad** amidst regional security challenges.

## OTHER KEY EVENTS

### 50. SAMUDRA PRADAKSHINA

#### Why in news?

The Defence Minister of India virtually flagged off 'Samudra Pradakshina,' the world's first tri-service **all-women circumnavigation sailing expedition**, from the Gateway of India, Mumbai.

#### About

- **Samudra Pradakshina** is India's inaugural **tri-service** (Army, Navy, Air Force) all-women circumnavigation expedition.
- The voyage involves sailing around the globe, crossing all longitudes and major oceans, while adhering to the **World Sailing Speed Record Council's norms** for a complete circumnavigation.

#### Aims & Objectives:

- **Symbol of Nari Shakti:** To showcase the courage, resilience, and leadership of women in uniform.
- **Promote Jointness:** To strengthen synergy and cooperation among the Army, Navy, and Air Force. **Diplomatic Outreach:** To use port calls as opportunities for military diplomacy and cultural exchange.
- **Scientific Research:** To collaborate with the National Institute of Oceanography (NIO) to study micro-plastics, ocean biodiversity, and marine health.

#### Key Features:

- **Vessel:** **IASV Triveni**, a 50-foot indigenous **Class A yacht** built in Puducherry.
- **Route:** Approximately **26,000 nautical miles**, following an easterly route, crossing the Equator twice, and rounding Capes Leeuwin, Horn, and Good Hope.

- **Crew:** 10 women officers, co-led by **Lt Col Anuja Varudkar** (Army) and **Sqn Ldr Shraddha P Raju** (IAF).
- **Timeline:** Scheduled from September 2025 to May 2026.

#### Significance:

- **Women Empowerment:** It is the first global tri-service women-led expedition, marking a major milestone for **gender inclusion** in the armed forces.
- **Atmanirbhar Bharat:** Showcases India's indigenous shipbuilding and seamanship capabilities.
- **Strategic Messaging:** Demonstrates India's maritime ambition and global engagement.

### 51. 5TH COAST GUARD GLOBAL SUMMIT (CGGS)

#### Why in news?

India is scheduled to host the **5th Coast Guard Global Summit (CGGS)** in **Chennai** in 2027, an event that will align with the **Golden Jubilee** of the Indian Coast Guard.

#### About

A premier multilateral forum bringing together Coast Guards, maritime security agencies, and international organisations to discuss global maritime challenges.

## INTERNATIONAL RELATIONS

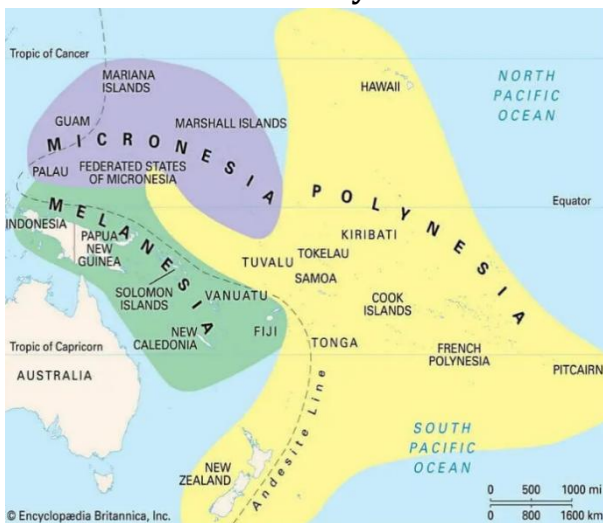
### 52. FORUM FOR INDIA-PACIFIC ISLANDS COOPERATION (FIPIC)

#### Why in news?

India recently hosted a meeting of the FIPIC foreign ministers in New York to discuss cooperation on climate change, economic partnership, and digital connectivity

#### About

- **The Forum for India-Pacific Islands Cooperation (FIPIC)** is a multilateral platform established by India in 2014 during the visit of the Prime Minister to Fiji.
- It aims to enhance cooperation and strengthen India's engagement with the Pacific Island countries, in line with India's "Act East Policy."



#### Member Countries

FIPIC comprises 14 Pacific Island nations - **Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.**

#### Economic Cooperation

Currently, the total annual trade between India and the Pacific Island countries stands

at approximately USD 300 million, with Indian exports valued at around USD 200 million and imports at about USD 100 million.

#### Key Indian Initiatives under FIPIC

- Establishment of a **special USD 1 million fund** to support climate change adaptation and clean energy projects.
- Setting up a **trade office in India** to promote commercial engagement.
- Launch of the **Pan Pacific Islands e-Network** to enhance digital connectivity across the region.
- Granting **visa-on-arrival** facilities at Indian airports for citizens of all 14 Pacific Island countries.
- Promoting **cooperation in space technology applications** to improve living standards in the islands.
- Providing **training programs for diplomats** from Pacific Island countries.

### 53. GEN Z PROTESTS IN NEPAL

#### Why in News

Nepal has recently witnessed a wave of **Gen Z-led protests** against social media restrictions, government corruption, and lack of accountability.

#### About Gen Z Protests

- The term "**Gen Z protests**" refers to demonstrations led primarily by individuals born between **1996 and 2010**, characterized by strong **digital activism, social awareness, and political engagement.**
- These movements are often **organized online**, using social media platforms as tools for mobilization and advocacy.

### Key Issues and Causes

- Restrictions on social media and online censorship.
- **Corruption and weak governance**, leading to erosion of public trust.
- **Economic inequality, unemployment, and limited opportunities for youth.**
- Broader **demands for social, political, and environmental reforms.**

### Similar Global Examples

- **Kenya (2024):** Protests against proposed tax hikes that disproportionately affected youth and students.
- **United States (2018–present):** *March for Our Lives* movement advocating for gun control and school safety.
- **Global (2018–present):** *Fridays for Future* campaign led by Greta Thunberg, calling for urgent action on climate change.

## 54. SCO TIANJIN SUMMIT 2025

### Why in News

The **25th SCO Summit 2025** in **Tianjin, China** brought together leaders from **23 countries and 10 organisations**, focusing on **regional security, economic cooperation, and global governance reforms.**

**India's vision**, "*One Earth, One Family, One Future*", was adopted in the **Tianjin Declaration**, highlighting New Delhi's influence within SCO.

### Institutional & Strategic Decisions

1. **Security Expansion:** Four new centres were established, including the **SCO Anti-Drug Center** and a **Universal Center for Countering Security Challenges**, to strengthen collaboration against transnational threats.
2. **Economic & Financial Measures:** The **SCO Development Bank** was approved to fund infrastructure and development projects. China pledged **¥10 billion** through the **SCO Interbank Consortium** for 2026–2029.
3. **Long-Term Strategy:** Member states adopted the **SCO 10-Year Development Strategy (2026–2035).**
4. **Global Governance Initiative (GGI):** Xi Jinping launched the **GGI**, promoting **sovereign equality, multilateralism, and people-centred approaches** as an inclusive alternative to the Western-led global order.

## PLACES IN NEWS

### 55. BAIRABI SAIRANG RAIL LINK

#### About



- It is a 51.38km broad gauge railway line connecting Mizoram to the national railway network.

Railway gauges are classified by rail distance: **Broad Gauge (1676 mm)**, **Standard Gauge (1435 mm)**, **Metre Gauge (1000 mm)**, and **Narrow Gauge (762/610 mm)**. India mainly uses Broad Gauge.

- It connects **Bairabi in Mizoram to Sairang**, only 20 kms from the capital Aizawl
- The line has 48 tunnels with a total length of 12.85km, 55 major bridges.
- India railways plan to **connect the other north eastern** states of Nagaland, Manipur, Meghalaya, and Sikkim with the **national network by 2030**.

### 56. SUDAN



- The Sudanese Civil war, ongoing since April 2023, stems from hostilities between the country's army and the paramilitary rapid support forces.
- The Darfur region has suffered from insurgency and violent extremist attacks for more than twenty years.
- Sudan remains one of the world's poorest and last delivered nations, ranking 170<sup>th</sup> on the Human development index (2024) and 185<sup>th</sup> globally in terms of nominal GDP per capita.

#### Sudan

**Location:** North Africa

**Capital:** Khartoum

**Bounded by:**

- Egypt to the north
- Libya to the northwest
- Chad to the west
- The Central African Republic to the south west
- South Sudan to south
- Ethiopia to the south east

## 57. VOC (V.O.CHIDAMBARANAR) PORT

### About

India's first **port-based Green Hydrogen Pilot Project** at V.O. Chidambaranar (VOC) Port, to power streetlights and EV charging in the port colony, marking a major step in India's clean energy transition.

**Location:** Thoothukudi, Tamil Nadu, under the V.O. Chidambaranar Port Trust (Ministry of Ports)



## 58. BAGRAM AIRBASE

### About

U.S. President Donald Trump has called for the U.S. to retake Bagram Air Base in Afghanistan, which was America's largest military facility there until the 2021 withdrawal.



**Location:** Afghanistan, Parwan province

- **Military Assets:** It has very long runways, stronger shelters, hospitals, and storage depots
- **Geopolitical Leverage:** Control of Bagram means control over key supply routes in Afghanistan.
- **Strategic Importance:** It offers logistical and surveillance advantages due to its location near Kabul and its proximity (around 1 hour's flight) to western China.

## 59. POINT NEMO

### About

The Prime Minister applauded two Indian Navy officers for being the first Asians to reach Point Nemo, **the oceanic pole of inaccessibility and the farthest point from any landmass**, describing their achievement as a testament to courage and determination.



### Location

Located in the South Pacific Ocean; about 2,688 km equidistant from three nearest landmasses.

## 60. MOROCCO

### About:

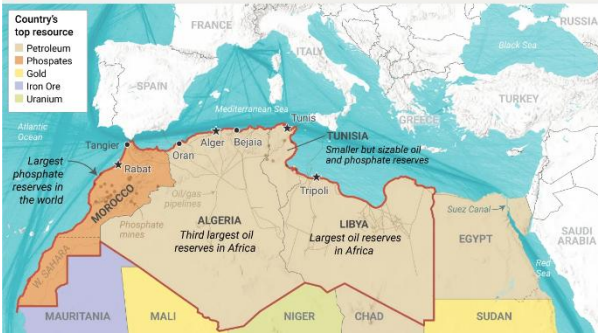
Defence Minister Rajnath Singh made his first visit to Morocco, where he inaugurated

India's first overseas defence manufacturing facility.

**Location:** Morocco is a North African country, Part of the **Maghreb (Libya, Tunisia, Algeria, Morocco, and Western Sahara)**.

Key Resources of the Maghreb

■ The Maghreb ■ Major commercial shipping lanes



**Bounded by:**

- Mediterranean Sea in the north
- Atlantic ocean in the west
- Algeria in the east and southeast
- Western Sahara in the south

## 61. BARREN ISLAND



**Location:**

It is a volcanic island located in the Andaman Sea and part of union territory of Andaman and Nicobar island.

**Capital:** Port Blair (Sri Vijaya Puram)

- It is the **only active volcanoes in the Indian sub-continent**
- It is a **stratovolcano** composed of lava rock fragments, and volcanic ash.

## 62. DARDANELLES STRAIT

**Why in News?**

Turkey has suspended all its shipping traffic through the strait due to extensive forest fire.



**Location:**

- The strait lies within the Turkey's territorial waters and located to the northwestern part of Turkey, separating Europe's Gallipoli Peninsula (northwest) from Asia minor (southeast).
- It connects Aegean Sea with the sea of Marmara.

## ORGANISATIONS

### 63. WORLD TRADE ORGANIZATION

#### Why in News?

On September 15th, the WTO celebrated the official entry into force of the Agreement on Fisheries Subsidies.

#### What is the Agreement on Fisheries Subsidies?

The **WTO Agreement on Fisheries Subsidies** aims to **eliminate harmful government subsidies that drive overfishing and illegal fishing, promoting sustainable fisheries globally.**



#### About WTO:

- The **World Trade Organization (WTO)** was established on **1 January 1995** under the **Marrakesh Agreement**, concluding the **Uruguay Round of Trade Negotiations (1986–1994)**.
- It replaced the **General Agreement on Tariffs and Trade (GATT)**, which had governed international trade since 1948.
- The main objectives of the WTO are to **promote free and fair trade, reduce trade barriers, settle disputes, and support developing nations** through special and differential treatment.

#### Structure of the WTO:

The World Trade Organization operates through a well-defined institutional

structure to ensure smooth decision-making and global coordination.

- **Ministerial Conference:** The highest decision-making body, meeting every two years. It reviews all multilateral trade agreements and sets broad policy directions.
- **General Council:** Handles the organization's daily affairs and also functions as the Dispute Settlement Body and the Trade Policy Review Body.
- **Specialized Councils:** Three main councils, Council for Trade in Goods, Council for Trade in Services, and Council for TRIPS (Intellectual Property Rights), oversee specific areas.
- **Secretariat:** Based in Geneva, Switzerland, it provides technical and administrative support and is headed by the Director-General (currently Ngozi Okonjo-Iweala).

#### Features of WTO:

- **Only Global Trade Body:**
  - It is the **only international organization** that sets and enforces global trade rules among nations.
- **Covers Goods, Services & IPR:**
  - Unlike GATT, WTO covers **trade in goods, services, and intellectual property rights** under one framework.
- **Binding Dispute Settlement Mechanism:**
  - WTO has a **legal and time-bound** dispute resolution system with an **Appellate Body**, making its rulings enforceable.
- **Consensus-Based Decision-Making:**

- All members, large or small, have **equal voting rights**; decisions are made by consensus, not by majority.
- **Special Treatment for Developing Nations:**
  - WTO provides **Special and Differential Treatment (SDT)**, giving developing countries longer time frames and flexibility in commitments.

## 64. UNITED NATIONS GENERAL ASSEMBLY

### Why in News?

The **United Nations General Assembly (UNGA)** holds its annual session every September, where world leaders gather to discuss global issues, set international priorities, and adopt key resolutions.

### About UNGA:

The United Nations General Assembly (UNGA), established in 1945 after World War II as **one of the six principal organs of the United Nations (UN)**, serves as a deliberative body promoting peace, security, and cooperation among nations.

### Structure of UNGA:

- **Membership:** All **193 UN member states** are members; each has **one vote** regardless of size or power.
- **President:** Elected annually, the President presides over sessions and represents the Assembly.
- **Secretariat:** Provides administrative and technical support; led by the **UN Secretary-General**.

### Functions of UNGA:

- Provides a **forum for multilateral discussion** of international issues and provides **humanitarian assistance**.

- Adopts **resolutions and declarations** (though non-binding, they carry political weight).
- UNGA grant observer status to the non-member states and inter-governmental organisations.
- Elects **non-permanent members** of the UN Security Council, judges of the International Court of Justice, and members of other UN bodies.

### Features of UNGA:

- **Universal Representation:** Every member state has equal voting rights (1 state = 1 vote).
- **Non-binding Resolutions:** UNGA resolutions are **recommendations** but often influence international norms.
- **Six Specialized Committees:** Each committee handles specific aspects of global governance.
- **Budgetary Authority:** Approves the UN budget and allocates funds to specialized agencies.
- **Annual Sessions in New York:** Sessions typically begin every September at the UN Headquarters.

## 65. WORLD ECONOMIC FORUM

### Why in News?

The **World Economic Forum (WEF)** recently held its annual meeting in Davos, Switzerland.

### What is the World Economic Forum?

The **World Economic Forum (WEF)** is an **international non-governmental organization** established in **1971** by **Klaus Schwab**. It is headquartered in **Cernobbio, Switzerland**.

### Objectives of WEF:

- Facilitate dialogue among global leaders on **economic growth, trade, and investment**.
- Promote **sustainable development and climate action**.
- Encourage **technological innovation and digital transformation**.

### Structure of WEF:

- **Board of Trustees:** Provides strategic guidance and oversight of the Forum.
- **Founder & Executive Chairman:** Klaus Schwab, responsible for overall direction and vision.
- **Global Agenda Councils:** Expert groups advising on thematic issues like health, energy, and geopolitics.
- **Secretariat:** Manages daily operations, research, and program implementation.
- **Regional Offices:** Facilitate engagement with global stakeholders across continents.

### Functions of WEF:

- Organizes the **Annual Meeting in Davos**, bringing together world leaders, business executives, and civil society.
- Conducts **research and publishes reports**, including the **Global Competitiveness Report, Global Risks Report, and Global Gender Gap Report**.

## 66. INTERNATIONAL CIVIL AVIATION ORGANIZATION

### Why in News ?

India has been re-elected to the **Part II of the Council of International Civil Aviation Organization (ICAO)** for the 2025–2028 term.



International Civil Aviation Organization

### About International Civil Aviation Organization ( ICAO )

The International Civil Aviation Organization (ICAO) is a **specialized agency of the United Nations (UN)**, established in **1944 by the Chicago Convention** (Convention on International Civil Aviation).

### Mandate and Role

- ICAO's primary role is to **promote the safe and orderly development** of international civil aviation globally.
- It sets **Standards and Recommended Practices (SARPs)** for various critical aspects like **air navigation, aircraft airworthiness, licensing, aviation security**, and environmental protection.
- These SARPs are **adopted by its 193 member states**.

### Structure and Headquarters

- The ICAO is **headquartered in Montreal, Canada**.
- The organization is governed by two main bodies: an Assembly, which meets every three years, and a permanent Council composed of 36 elected member states.
- The Council is the body directly responsible for adopting and managing the SARPs.

### India's role in ICAO

- **Founding Member Status:** India was a **founding member** of ICAO.

## 67. ORGANISATION OF ISLAMIC COOPERATION (OIC)

### Why in News?

The OIC celebrated its 56th anniversary on September 25, 2025.

### About OIC

The Organisation of Islamic Cooperation (OIC) presents itself as the **united voice of the global Muslim community**. It was founded in **Rabat, Morocco, in 1969**. It currently includes **57 member countries**.

- **Headquarters: Jeddah, Saudi Arabia.** The organization intends to relocate its headquarters to East Jerusalem once the city's disputed status is resolved.
- **Objectives:** The OIC seeks to foster **solidarity** among member states, support the territorial integrity of occupied Muslim states, protect and defend Islam from defamation, and coordinate a **unified stance** by members in international forums like the UN General Assembly and Human Rights Council.
- **Charter:** Its governing document, last revised in **2008** (Dakar, Senegal), commits members to Islamic values and the principles of the UN Charter.

### Functioning

- **Membership:** UN member states with a Muslim majority are eligible to join, requiring full consensus from the Council of Foreign Ministers. (**India is not a member of the OIC**).
- **Decision Making:** Decisions typically require **complete consensus** and a quorum of two-thirds of member states. If consensus fails, a two-thirds majority of those present and voting is needed.
- **Structure:**
  - **Islamic Summit:** The supreme authority, composed of Heads of State, meets every three years to set policy.
  - **Council of Foreign Ministers:** The main decision-making body, meeting annually to implement policies, approve budgets, and pass resolutions.
- **Finance:** Funding is based on member states' national incomes. Voting rights are suspended for members whose contributions are in arrears for two or more years.

## REPORTS AND INDICES

### 68. GLOBAL INNOVATION INDEX

#### Why in news?

The GII 2024 was released on September 26, 2025, and has garnered significant attention due to several key developments. The theme of the GII 2024 is "**Unlocking the Promise of Social Entrepreneurship**," highlighting the role of social enterprises in driving innovation that addresses global challenges.



#### About

- The Global Innovation Index (GII) is an annual ranking **published by the World Intellectual Property Organization (WIPO)** that evaluates the innovation performance of countries and regions.
- It assesses around 130 plus economies based on around 80 indicators, including **research and development (R&D) investments, infrastructure, business sophistication, and knowledge and technology outputs.**

#### Key Highlights of the report

- India, currently ranked 39th among 133 economies, leads the Lower-Middle Income and Central and Southern Asia

categories, rising from 81st in 2015 to 39th in 2024.

- India ranks 4th globally in the World Intellectual Property Organization's (WIPO) Science & Technology (S&T) Cluster Ranking.
- India stands 7th globally in intangible asset intensity and excels in innovation outputs, ranking 33rd, marking a notable improvement from the previous year.
- For the 14th consecutive year, **Switzerland is the most innovative economy in 2024** followed by Sweden, the United States, Singapore and the United Kingdom.

#### WIPO

- The **World Intellectual Property Organization (WIPO)** is a specialized agency of the United Nations, established in 1967 and headquartered in Geneva, Switzerland.
- WIPO has 194 member states as of 2025 and serves as a central body **to promote intellectual property (IP) protection worldwide and encourage creativity and innovation.**

### 69. OECD ECONOMIC OUTLOOK

#### Why in news?

The OECD's latest **Interim Economic Outlook**, released on September 23, 2025, has revised projections and indicates that while the global economy showed resilience in the first half of 2025.

#### About

- The **OECD Economic Outlook** is a biannual report **published by the Organisation for Economic Co-operation and Development (OECD)** that presents the analysis of major short-

term global economic trends and prospects.

- Two Interim Economic Outlooks provide a further update on annual GDP and inflation projections for G20 countries, the OECD, euro area and world aggregates.

### Key highlights of the report

- The OECD projects global GDP growth to slow from 3.3% (2024) to 2.9% (2026) due to weaker performance in major economies like the US and China.
- Headline inflation is expected to fall from 3.4% (2025) to 2.9% (2026), while core inflation in advanced G20 economies remains steady around 2.5%.
- India's GDP growth is revised upward to

**Headline inflation** measures the overall change in prices of all goods and services, including volatile items like food and fuel.

**Core inflation** excludes these volatile items to show the underlying, long-term trend in prices, helping policymakers assess persistent inflationary pressures.

6.7% for FY 2025, driven by strong domestic demand, fiscal and monetary easing, GST reforms, and higher public investment.

- Private consumption is likely to rise with increasing real incomes and moderate inflation.
- Investment will be supported by declining interest rates and sustained public capital expenditure.

- Export growth may face pressure from higher US tariff rates and global trade headwinds.

### OECD

- The **Organisation for Economic Co-operation and Development (OECD)** is an international economic organization founded in 1961, headquartered in Paris, France. It has **38 member countries** as of 2025, primarily advanced economies.
- **NOTE: India is not a member of OECD.**
- The OECD provides a platform for governments to **compare policies, share experiences, and coordinate solutions** on issues such as economic growth, employment, trade, investment, education, and sustainable development.

## 70. BUILDING ECONOMIC RESILIENCE TO THE HEALTH IMPACTS OF CLIMATE CHANGE

### Why in News

The **World Economic Forum (WEF)**, in collaboration with the **Boston Consulting Group (BCG)**, released a report titled "*Building Economic Resilience to the Health Impacts of Climate Change*".

### About the Report

- The report highlights that **climate change is a major health and economic risk multiplier**, with rising temperatures, vector-borne diseases, and malnutrition threatening labour productivity and public health.
- The report warns that climate-related health risks could lead to **annual productivity losses worth US \$1.5 trillion by 2050**, disproportionately affecting developing countries such as India. It calls for integrating **climate and health adaptation** within economic

policy frameworks to safeguard long-term growth.

- It argues that health impacts of climate change could **erode human capital**, strain fiscal resources, and deepen poverty in vulnerable economies.
- It stresses that building resilience requires **climate-resilient health systems, adaptive social protection, and sustainable infrastructure** investments.
- It connects **governments, businesses, academia, and civil society** to develop policies and initiatives that promote **sustainable economic growth, social development, and technological progress**.

### Key Highlights

- **Economic Implications:** Climate-induced health shocks may reduce GDP growth and widen inequality; heat-exposed sectors could lose up to **5 % of labour productivity** by mid-century.
- **Resilient Health Systems:** Urges investment in **climate-smart healthcare**, early-warning systems, and disease surveillance integrating meteorological data.
- **Financing Adaptation:** Calls for leveraging global funds such as the **Green Climate Fund** and promoting **climate-linked insurance mechanisms** to cushion health-related economic losses.
- **India Context:**
  - India's proposed **nationwide climate-linked insurance scheme** aligns with these recommendations.
  - Frequent heat waves, air pollution, and vector-borne diseases are already impacting productivity and increasing health expenditure.

## 71. NATIONAL CRIME RECORDS BUREAU (NCRB) – CRIME IN INDIA REPORT 2023



### Why in News?

The **National Crime Records Bureau (NCRB)**, released its annual report "*Crime in India 2023*" on **30 September 2025**.

### About

- **NCRB** was established in 1986 under the **Ministry of Home Affairs**, to maintain and analyze crime data at the national level.
- It acts as the **central repository of crime statistics**, helping in **crime prevention, policymaking, and research**.

### Functions:

#### Crime Analysis:

- Identifies crime trends, hotspots, and patterns.
- Supports law enforcement agencies with data-driven policing strategies.

#### Information Technology Support:

- Implements IT solutions for police, such as:
  - Crime and Criminal Tracking Network & Systems (CCTNS)
  - Finger Print & Forensic Databases
  - National Database on Sexual Offenders

#### Training & Research:

- Provides training to police personnel in crime recording, analysis, and IT applications.

### Reports Published by NCRB

- **Crime in India (Annual Report):** Covers all registered crimes, including IPC and SLL crimes.
- **Accidental Deaths & Suicides in India (ADSI):** Trends in deaths, road accidents, and suicides.
- **Prison Statistics India:** Details on prison population, conditions, and inmates.
- **Finger Print & Forensic Reports:** Supports criminal identification and investigation.
- The **Crime in India** report compiles data from all States/UTs and provides comprehensive statistics on crime trends, conviction rates, and law enforcement performance and registered cases across India under the **Indian Penal Code (IPC)** and **Special & Local Laws (SLL)**.

### Key Highlights of the 2023 Report

- **Violent Crimes:**
  - **Murder cases** declined by about 3%, showing a slight improvement in grave crime control.
  - However, **overall violent crimes** like kidnapping and assault continued to rise.
- **Crimes Against Women:**
  - Increased marginally by 0.7%.
  - Major categories: **cruelty by husband/relatives, assault on women with intent to outrage modesty,** and **kidnapping/abduction.**
- **Crimes Against Children:**
  - Recorded an increase of about 9.2%, reflecting both higher incidence and improved reporting.
  - Offences under the **POCSO Act** formed a significant share.

- **Crimes Against SCs/STs:**
  - **Crimes against STs** rose sharply by 28.8%.
  - **Crimes against SCs** also saw a marginal increase.
- **Cybercrime:**
  - **Fraud-related offences** accounted for nearly 69% of total cybercrimes.
  - **Bengaluru** recorded over half of all cybercrime cases among major cities.
- **State Trends:**
  - **Uttar Pradesh** and **Bihar** led in murder cases.
  - **Maharashtra's** crime rate (470.4) remained above the national average.
  - **Kolkata** was ranked as the **safest metro city** for the fourth consecutive year.

## 72. CHILDREN IN INDIA 2025 REPORT

### Why in News?

The **Ministry of Statistics and Programme Implementation (MoSPI)** released the *Children in India 2025* report during the **29th Conference of Central and State Statistical Organisations (CoCSSO)** held in Chandigarh.

### About the Report

- It compiles data from national surveys and administrative sources such as the **Sample Registration System (SRS), National Family Health Survey (NFHS), Ministry of Education,** and **NCRB.**
- Structured across **seven thematic chapters:**
  - Overview of children in India
  - Population and vital statistics
  - Health and nutrition
  - Education and development
  - Crimes involving children and child protection

- Policy and legal framework
- SDGs related to children

### *Conference of Central and State Statistical Organisations (CoCSSO)*

- It is an annual forum convened by India's **Ministry of Statistics and Programme Implementation (MoSPI)**.
- It aims to enhance **coordination and cooperation** within the country's statistical framework.

## Key Highlights of the Report

### 1. Health and Vital Statistics

- Infant and under-five mortality rates have shown a **steady decline**, reflecting improved healthcare access and maternal-child health initiatives.
- Birth rates remain higher in rural areas compared to urban regions, with rural areas continuing to report higher child mortality indicators.

### 2. Nutrition

- Child malnutrition, particularly stunting among under-five children, remains a major public health concern despite gradual improvement.
- Rural regions and certain states in central and northeastern India record **comparatively higher levels of stunting and undernutrition**.

### 3. Education

- School **dropout rates** across all levels have **reduced markedly**, indicating better retention and implementation of NEP 2020 and related government schemes.

- Improved enrolment and continuity point to strengthened education infrastructure and targeted interventions for vulnerable groups.

### 4. Child Protection and Welfare

- Incidence of **child marriage has declined** over the years but persists in some regions.
- Adoption processes have seen steady progress, with a balanced gender ratio among adopted children.
- Crimes against children remain a concern, particularly offences under the POCSO Act and cases of kidnapping and abduction.

### 5. Gender and Regional Gaps

- Male infants have a slightly higher IMR than female infants.
- **Rural-urban disparity** persists in health, education, and nutrition outcomes.
- States in the north-east and central India lag behind in key child welfare indicators.

## 73. ENVIRONMENTAL ACCOUNTING ON FOREST - 2025

### Why in News

The **Ministry of Statistics & Programme Implementation (MoSPI)** released “**Environmental Accounting on Forest - 2025**” on **25 September 2025**, during the 29th Conference of Central & State Statistical Organisations (CoCSSO) in Chandigarh.

### About the Report

- It is the **first dedicated forest accounting report** in India following the **System of Environmental-Economic Accounting (SEEA)** framework, aimed at integrating ecological data with economics.

- The report offers comprehensive **forest ecosystem accounts** (extent, condition, services) at both national and state/UT levels
  - It useful for policymaking, tracking forest health, and measuring ecosystem services monetarily.
- Uses data primarily from **India State of Forest Report (ISFR)**, **Forestry Statistics (ICFRE)**, SEEA central and ecosystem accounting guidelines, NCAVES, and national accounts and is published in **two volumes**:

### Key Highlights - Environmental Accounting on Forest, 2025

#### 1. Physical Asset Account

- Tracks changes in forest area over time, reflecting trends in regeneration and conservation.
- India's forest cover has shown a significant increase, indicating successful afforestation and sustainable management efforts.
- Southern states such as Kerala, Karnataka, and Tamil Nadu have been major contributors to the rise in forest area.

#### 2. Extent Account

- Measures changes in the extent of ecosystems like recorded forest areas.
- India has seen a net increase in recorded forest area, largely due to reclassification and improved boundary mapping.
- States such as Uttarakhand, Odisha, and Jharkhand reported notable gains in their recorded forest share.

#### 3. Condition Account

- Assesses forest quality through indicators like *growing stock* (volume of living trees).

- India's growing stock has improved, showing healthier and denser forests.
- Madhya Pradesh, Chhattisgarh, and Telangana are key contributors, while Andaman & Nicobar Islands lead among Union Territories.

#### 4. Services Account

- Captures the *economic valuation* of forest ecosystem services, provisioning, regulating, and cultural.

##### A. Provisioning Services

- Include timber, non-timber forest products, and other extractive benefits.
- Their value has grown steadily, contributing to national income and rural livelihoods.
- Maharashtra, Gujarat, and Kerala are leading contributors.

##### B. Regulating Services

- Include carbon sequestration and climate regulation functions of forests.
- Their valuation has increased substantially, highlighting forests' critical role in carbon storage and climate mitigation.
- Arunachal Pradesh, Uttarakhand, and Assam are major contributors.

### 74. NITI AAYOG REPORTS

#### Why in News

- In **September 2025**, NITI Aayog released several key reports and initiatives aimed at inclusive growth, sustainability, and agricultural transformation.
- Major among them:
  - **“Strategies and Pathways for Accelerating Growth in Pulses towards the Goal of**

**Atmanirbharta** – roadmap for self-sufficiency in pulses by 2030.

- **“Pathways to Progress: India’s Journey towards Viksit Bharat @2047”** – a comprehensive vision document assessing growth challenges and reform priorities.



**NITI Aayog**

#### About NITI Aayog

- **Full form:** *National Institution for Transforming India (NITI Aayog)*
- **Established:** 1 January 2015 (replaced the Planning Commission).
- **Objective:** To act as the Government of India’s premier policy think tank fostering cooperative and competitive federalism.
- **Chairperson:** Prime Minister of India.
- **Headquarters:** New Delhi.

#### Key Functions

- Formulates **long-term strategies, sectoral policies, and vision documents** (e.g., *Viksit Bharat 2047*).
- Promotes **evidence-based policy-making** through data analytics and monitoring.
- Acts as a **platform for Centre–State coordination** under *Team India*.
- Oversees **SDG localization** and progress tracking.
- Coordinates **aspirational districts and blocks** programmes.

#### Recent Initiatives (2025)

- **Atmanirbhar Pulses Mission Report (Sept 2025)** – Targets 350 lakh tonnes production by 2030–31.
- **Pathways to Progress Report (Sept 2025)** – Lays out governance and economic reforms for Viksit Bharat.
- **Environmental Accounting on Forests (2025)** – Introduces natural capital valuation in national accounts.
- **Children in India 2025 Report (with MoSPI)** – Focuses on child development indicators and SDG progress.

## SCHEMES AND INITIATIVES

### 75. ADI VAANI

#### Why in News?

The Government is set to launch the Beta version of Adi Vaani, an AI-based translation tool for tribal languages.

#### About

- Adi Vaani is an AI-powered translation platform that lays the groundwork for a future large language model (LLM) dedicated to tribal languages.

#### Large Language Model (LLM)

Large Language Model (LLM) is a type of AI model trained on massive amounts of text data to learn patterns, grammar, context, and meaning in language. It can perform tasks such as **translation, summarization, question-answering, text generation, and conversation.**

- Marks a Landmark step towards inclusive tribal empowerment and preservation of India's rich linguistic diversity.
- Launched by the **Ministry of Tribal Affairs.**
- Developed by a consortium led by IIT Delhi, in collaboration with BITS Pilani, IIIT Hyderabad, IIIT Nava Raipur, and Tribal Research Institutes from Jharkhand, Odisha, Madhya Pradesh, Chhattisgarh, and Meghalaya.

#### Objectives of the Project

- Enables real-time translation (text and speech) between Hindi/English and tribal languages.

- Provide interactive language learning tools for students and early learners.
- To digitally preserve folklore, oral traditions, and cultural heritage.
- Enhance awareness of government schemes and key messages via subtitled health advisories, PM's speeches, and official communications in tribal languages.
- Promote digital literacy, healthcare communication, and civic participation in tribal communities.
- Strengthen tribal entrepreneurship, creating livelihood opportunities.
- Expected to benefit over 20 lakh tribal youth and community leaders, driving social and economic transformation.

#### Scope and Language Coverage

- **Beta Launch:** Santali (Odisha), Bhili (Madhya Pradesh), Mundari (Jharkhand), and Gondi (Chhattisgarh).
- **Next Phase:** Expansion to languages including **Kui and Garo.**

#### Do you know?

India is home to **461 tribal languages** spoken by Scheduled Tribes and 71 distinct tribal mother tongues (Census of India 2011). Among these, **81 are vulnerable and 42 are critically endangered.**

### 76. ANGIKAAR

#### Why in news?

**Housing & Urban Affairs Minister Manohar Lal** has launched the **Angikaar 2025** campaign under **Pradhan Mantri Awas Yojana – Urban 2.0 (PMAY-U 2.0).**



### About

- **Objective:** Outreach campaign to **accelerate implementation of PMAY-U 2.0** by spreading awareness nationwide.
- **Functions:**
  - Fast-track **verification of applications** under PMAY-U.
  - **Expedite completion** of already sanctioned houses.
- **Additional Focus:**
  - Spread awareness of **Credit Risk Guarantee Fund Trust for Low Income Housing (CRGFTLIH)**.
  - Ensure **last-mile delivery** through community mobilization, targeted engagement, and convergence with other schemes.
  - **Fast-tracking housing delivery** – Completion of 20 lakh pending houses, Griha Pravesh ceremonies for dignified handovers, and loan facilitation for 8.5 lakh sanctioned homes.
  - **Inclusive coverage** – Prioritizing Special Focus Groups like safai karamcharis, street vendors (PM

### PMAY-U (2.0)



### PMAY- U 2.0

- **Launch & Duration:** Revamped version of PMAY-Urban, launched in September 2024, to run till 2029, aiming to fulfill the goal of **“Housing for All”**.
- **Target & Assistance:** Covers 1 crore urban families, providing up to ₹2.5 lakh central assistance per family for constructing or purchasing a pucca house.
- **Scheme Verticals:** Implemented through four verticals: Beneficiary-Led Construction (BLC), Affordable Housing in Partnership (AHP), Affordable Rental Housing (ARH), and Interest Subsidy Scheme (ISS).
- **Funding Pattern:** Centrally Sponsored Scheme (except ISS as a Central Sector Scheme) with cost-sharing ratios like 60:40 (Centre: State); 90:10 for NE & special category states.
- **Convergence & Reforms:** Linked with other schemes such as AMRUT 2.0, Smart Cities Mission, PM SVANidhi, PM Vishwakarma, Swachh Bharat (Urban); promotes green and innovative building technologies.
- **Eligibility & Safeguards:** Beneficiary families must not own a pucca house in India; Aadhaar-based verification, geo-tagging, DBT for transparency; houses not transferable for 5 years.

SVANidhi), artisans (PM Vishwakarma), Anganwadi & construction workers, and residents of slums/chawls.

- **Convergence with other schemes** – Extending PM Surya Ghar: Muft Bijli Yojana benefits to completed houses and spreading awareness through PMAY-U’s Unified Web Portal.
- **Nationwide mobilization** – Field-level verification, community

engagement, and celebrations such as PMAY-U Awas Diwas (17 Sept 2025) and Housing Months (Sept–Oct 2025). **PM Awas Mela – Shehri** launched for camps, loans, solar benefits & community engagement.

➤ **Progress so far:**

- **120 lakh houses sanctioned** under PMAY-U.
- **94.11 lakh pucca houses completed & delivered.**
- Angikaar 2025 to facilitate completion of the **remaining houses.**

## 77. RASHTRIYA POSHAN MAAH 2025

### Why in news?

The Prime Minister **launched the 8th Rashtriya Poshan Maah along with the Swasth Nari Sashakt Parivar Abhiyaan (SNSPA).**



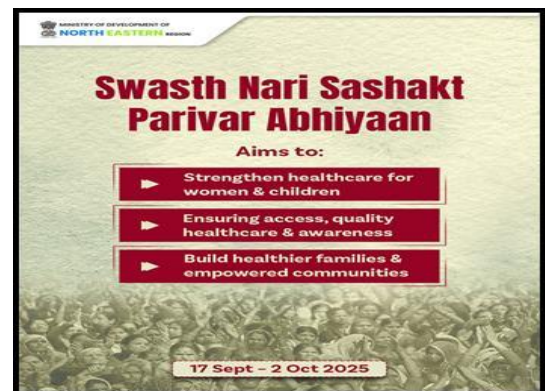
### About

#### Rashtriya Poshan Maah

- Rashtriya Poshan Maah is a nationwide initiative dedicated to combating malnutrition and promoting holistic child health and nutrition.
- The month-long event aimed to intensify efforts under the broader framework of “**Poshan Abhiyaan**” to ensure better nutrition for all, especially children, adolescents, and women.

- **Key activities** include Awareness campaigns, Health competitions, and Community outreach programs to encourage positive nutrition-seeking behaviours.
- **Critical themes include:**
  - **Obesity reduction:** campaigns promoting reduced sugar and oil consumption.
  - **Early Childhood Care & Education:** *Poshan Bhi Padhai Bhi* integrated with **NEP 2020**.
  - **EK Ped Maa Ke Naam:** linking tree plantation initiatives with nutrition awareness.
  - **Infant & Young Child Feeding (IYCF):** promoting breastfeeding and complementary feeding.
  - **Men's participation:** encouraging male involvement in caregiving and nutrition awareness.

#### Swasth Nari Sashakt Parivar Abhiyaan (SNSPA)



- The Swasth Nari Sashakt Parivar Abhiyaan aims to enhance healthcare for women and children across India by improving access, ensuring quality care, and raising awareness.
- The initiative actively involves private hospitals under a **Jan Bhagidaari Abhiyaan** model, promoting collaborative participation.

- Launched jointly by the **Ministry of Health and Family Welfare** and the **Ministry of Women and Child Development**, SNPSA represents a landmark effort in women and child healthcare.
- The program will organize over **one lakh health camps** across **Ayushman Arogya Mandirs** and **Community Health Centres**, providing comprehensive screenings for conditions such as **anaemia, hypertension, diabetes, and cancer**.
- The **SASHAKT** portal will enable real-time monitoring of progress, ensuring **transparency and efficient implementation**.
- SNPSA promotes **community engagement** through **Nikshay Mitras** and volunteer participation, with a focus on **tribal and rural regions**.
- It also emphasizes **awareness on menstrual hygiene, nutrition, and overall wellness**, delivered through **Anganwadi programs** and health camps.

## 78.PM- MITRA PARKS

### Why in news?

India's first PM-MITRA park was inaugurated in Bhainsola village in Dhar district, Madhya Pradesh as the foundation stone was laid by the Honorable Prime Minister of India.

### About

#### PM Mega Integrated Textile Region and Apparel (MITRA) Scheme

- **Launch:** Introduced by the Ministry of Textiles in 2021.
- **Objective:** To enhance India's global competitiveness by creating a modern value chain, attracting investments, and

generating significant direct and indirect employment opportunities.

- **Vision:** Based on the 5F concept – *Farm to Fiber to Factory to Fashion to Foreign*.
- **Duration:** Implemented during 2021–22 to 2027–28.



- **Implementation:** Managed through a Special Purpose Vehicle (SPV) jointly owned by the Central and State Governments. Parks can be developed as Greenfield or Brownfield projects.

#### Funding Support:

- Development Capital Support (DCS):
  - Greenfield parks: Up to ₹500 crore, or 30% of the project cost.
  - Brownfield parks: Up to ₹200 crore, or 30% of the project cost for balancing infrastructure.
- Competitive Incentive Support (CIS): Up to ₹300 crore per park to incentivize manufacturing units to set up early.

#### Proposed Parks:

- **Seven** PM MITRA Parks will be developed at **Virudhunagar** (Tamil Nadu), **Warangal** (Telangana), **Navasari** (Gujarat), **Kalaburagi** (Karnataka), **Dhar** (Madhya Pradesh), **Lucknow**

(Uttar Pradesh), and **Amravati** (Maharashtra).

### Eligibility & Selection:

Requires a contiguous, encumbrance-free land parcel of at least 1,000 acres, along with supportive state textile and industrial policies.

## 79.SWACHH SHEHAR JODI INITIATIVE (SSJI)

### Why in news?

The **Ministry of Housing and Urban Affairs** (MoHUA) launched the Swachh Shehar Jodi (SSJ) initiative.

### About

The Swachh Shehar Jodi Initiative is a **structured mentorship and collaborative action program** involving 72 mentor cities and around 200 mentee cities.

### Objectives:

- Support low-performing cities to improve their Swachhata performance.
- Enable mentee cities to replicate tested best practices in sanitation and waste management.



### Focus areas:

- Visible Cleanliness
- Waste Segregation and Transportation
- Solid Waste Processing
- Access to Sanitation
- Used Water Management
- Mechanization of Desludging Services

- Advocacy for Swachhata
- Citizen Feedback and Grievance Redressal

### Permissible activities:

#### ➤ Capacity building:

- Organizing city-level or joint mentor-mentee workshops on swachhata processes, IEC, grievance redressal, etc.
- Field-level training of sanitation staff and municipal teams.

#### ➤ Exposure visits:

- Mentee city teams visiting mentor cities for learning.
- Hosting of exchange visits involving elected representatives and key officials

#### ➤ Community and stakeholder involvement:

- Hosting Swachh Ward competitions, SwachhTalks at ward level, zero waste awareness events, citizen hackathons or idea competitions.

#### ➤ Development of SOPs, Toolkits, IEC Materials:

- Preparation of operating guidelines, SOPs, process flow documents for sanitation and waste processing. Customization, printing, and dissemination of IEC materials.

### Mentor City Criteria:

- Top-performing cities featuring in Rank 1, 2, or 3 in Swachh Survekshan (SS) 2022, 2023, 2024 (Super Swachh League).
- Top three cities across population categories in SS 2024.
- Promising clean cities emerging across States/UTs in SS 2024.

### Mentee City Criteria:

- Cities at the bottom of State cumulative SS rankings.

- Preference for geographical proximity with mentor cities.

#### Funding:

- Mentor and mentee cities can use **Capacity Building (CB) Funds** under SBM-U 2.0.

States/UTs may top up these funds if required. Cities may also leverage partner organizations / other funds.

## 80. INDIA- AI IMPACT SUMMIT 2026

### Why in news?

The **Ministry of Electronics & Information Technology**, Government of India, unveiled the logo and key flagship initiatives for the India-AI Impact Summit 2026. **It is the first global AI summit to be hosted by a Global South nation.**

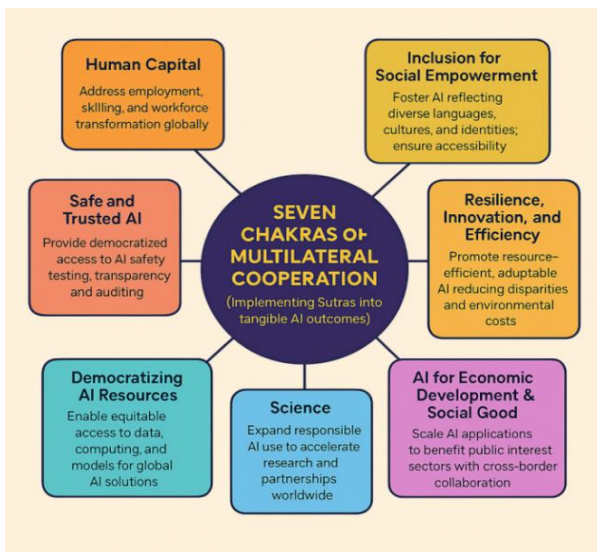


### About

- The **India-AI Impact Summit 2026** will be held on **February 19-20, 2026** at Bharat Mandapam, New Delhi. The large-scale summit is expected to see participation from heads of states, global leaders, policy makers, researchers, industry experts and innovators.
- The India-AI Impact Summit 2026 will feature a **series of flagship initiatives**, including:
  - **AI Pitch Fest (UDAAN):** It will showcase innovative AI startups from across the globe and high-potential ventures from India's Tier 2 & 3 hubs, with a special focus on women leaders and differently-abled changemakers.
  - **Global innovation challenges for youth, women, and other participants:** The initiative aims to foster AI-driven solutions that address real-world public challenges across sectors.
  - **Research symposium:** A one-day interdisciplinary gathering set to showcase cutting-edge AI research forum.
  - **AI Expo:** The Expo for Responsible Intelligence will feature 300+ exhibitors from India and 30+ countries with 10+ thematic pavilions.
- The official logo features the **Ashoka Chakra**, representing justice and constitutional values, with **neural network flares** showing AI's power to **connect people, industries, and regions for inclusive growth.**
- The **three Sutras** are **People** (inclusive, respectful, and human-centered AI), **Planet** (sustainable, resource-efficient, and climate-resilient AI), and **Progress** (equitable, accessible, and beneficial AI for all sectors).
- The seven Chakras are **Human Capital** (skills and workforce), **Inclusion for Social Empowerment** (languages, cultures, accessibility, bias-free), **Safe and Trusted AI** (safety, transparency, governance), **Resilience, Innovation & Efficiency** (resource-efficient, adaptable AI), **Science** (responsible research and discovery), **Democratizing AI Resources** (equitable access to data, compute, models), and **AI for Economic Development & Social Good** (scalable

public interest applications and collaboration.

- **Other key takeaways:**



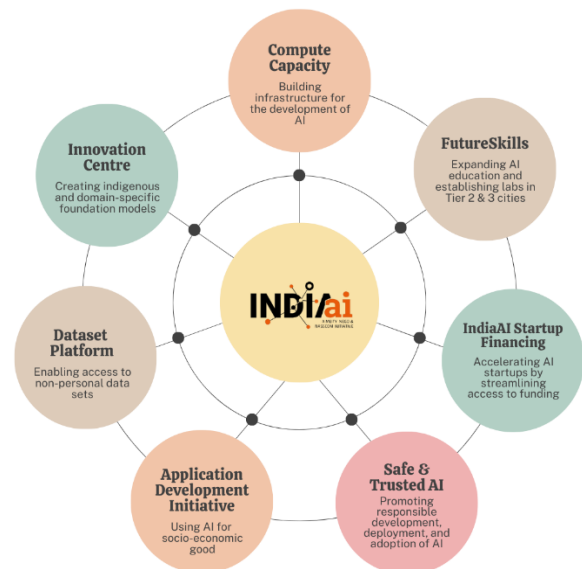
- Launch of **Eight Indigenous Foundational Model Projects** to build Multilingual, Healthcare, Scientific, Industrial, Governance and Agriculture AI Capabilities.
- **Dedication of 30 IndiaAI Data and AI Labs** forming the first wave of a 570-lab network.
- **Foundational courses on data annotation and data curation** to equip learners to participate in the AI economy by offering entry-level training
- **Announcement of IndiaAI Fellowship Program and Portal** - expanded to support 13,500 scholars, covering 8,000 undergraduates, 5,000 postgraduates, and 500 PhD researchers from all disciplines.

### The IndiaAI Mission

- The IndiaAI mission was officially launched in March 2024.
- The Mission aims to build a comprehensive ecosystem that fosters AI

innovation by **democratizing computing access, enhancing data quality, developing indigenous AI capabilities, attracting top AI talent, enabling industry collaboration, providing startup risk capital, ensuring socially impactful AI projects, and promoting ethical AI.**

- This mission drives responsible and inclusive growth of India's AI ecosystem through following **seven pillars**.
  - IndiaAI Innovation Centre
  - IndiaAI Application Development Initiative
  - AlKosh platform
  - IndiaAI Compute Capacity
  - IndiaAI Startup Financing
  - IndiaAI FutureSkills
  - Safe & Trusted AI



## MISCELLANEOUS

### 81. BLOOD MOON

#### Why in News

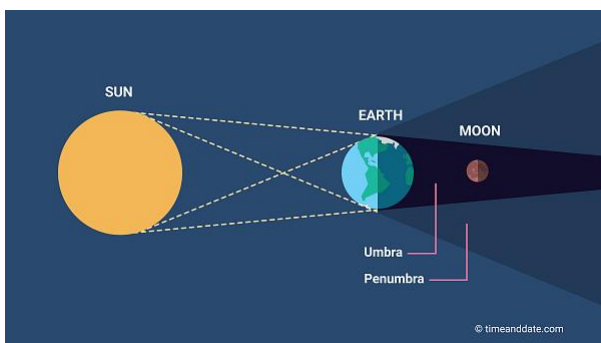
A special cosmic show was seen on September 8, Asia, Australia, and parts of Africa witnessed a '**Blood Moon**', or a total lunar eclipse in which the moon appeared red.

#### About Blood Moon:

- The Blood Moon is visible during a total lunar eclipse.
- As the earth is placed between the sun and the moon, only some sunlight, filtered from the earth's atmosphere, reaches the moon.
- When sunlight collides with the molecules suspended in the air, blue light scatters away easily, and only the red light reaches the moon, making it look red.

#### Total Lunar Eclipse:

- An astronomical event that occurs when Earth passes directly between the Sun and the Moon, **casting a shadow on the Moon's surface**.
- This can only happen during a full moon phase, dimming the Moon and sometimes turning it a striking red colour due to **Rayleigh scattering of sunlight** through Earth's atmosphere.



### 82. KOLKATA HEAVY RAINFALL

#### Why in News:

A low-pressure area over the northeast Bay of Bengal was brought heavy rainfall to several districts of South Bengal

#### Causes:

- A **low-pressure area over the Bay of Bengal** is intensifying into a depression.
- Moisture-laden winds from the Bay of Bengal interacting with local topography have enhanced rainfall.

#### Cloudburst

According to IMD: rainfall exceeding 100 mm (10 cm) in 1 hour is considered a cloudburst.

#### Why Not Called a Cloudburst?

- **Not localised:** rainfall spread across a large urban area.
- **Not hourly extreme:** intensity was high but spread over several hours.
- **Not hilly terrain:** Kolkata is in a flat alluvial plain, without orographic lifting.
- **Meteorological cause different:** linked to monsoon depression, not convective burst.

### 83. EXERCISE MAITREE XIV

#### About

The 14th edition of **Exercise Maitree** commenced in **Meghalaya, India**. Instituted in **2006**, it is a key **India-Thailand joint military exercise** focusing on **company-level counter-terror operations** in **semi-urban terrain**, conducted under **Chapter VII of the UN Charter**.