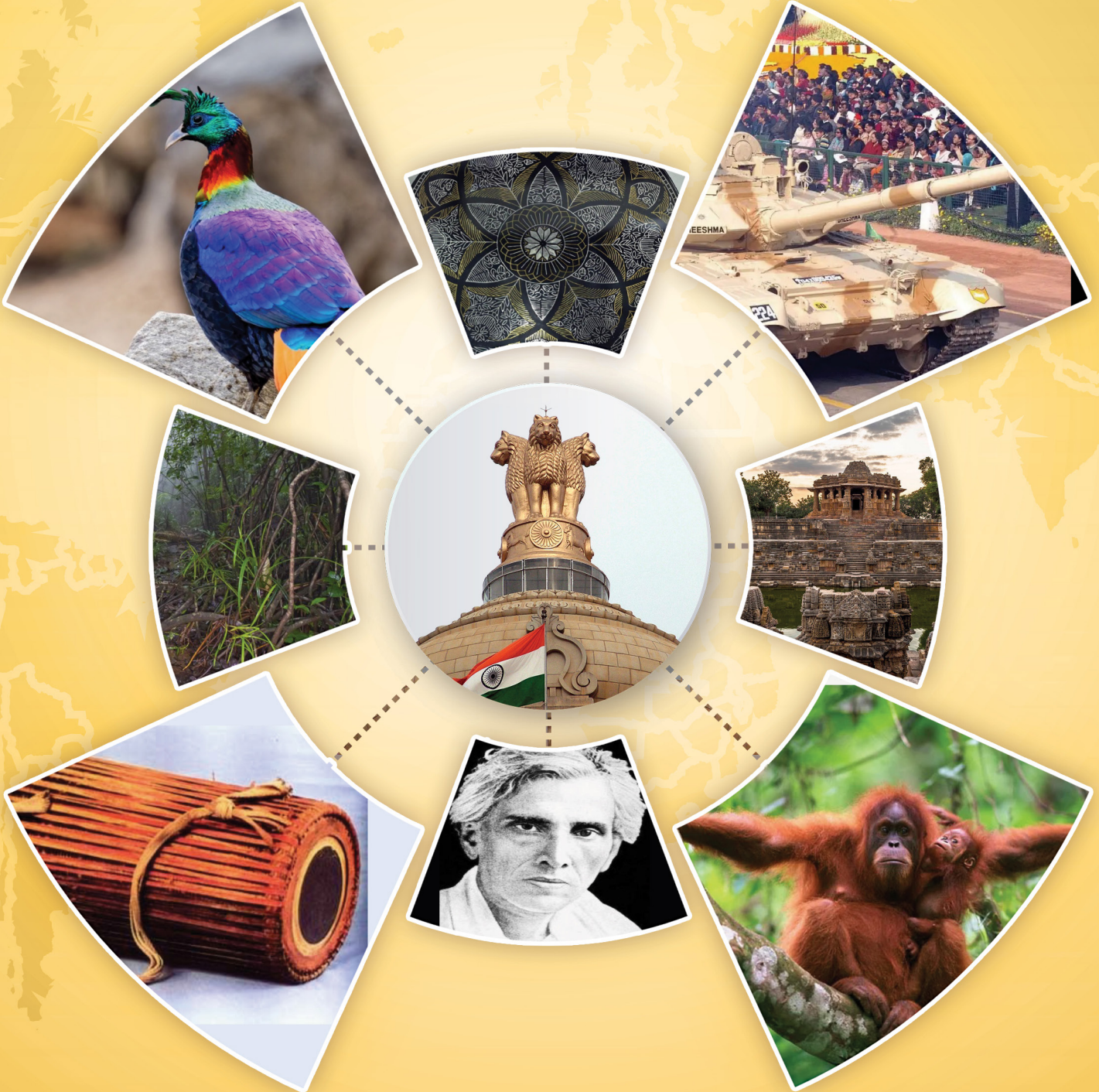


FORTUNE Prelims Precise

September 2026



FORTUNE IAS

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Preface

Fortune IAS Academy presents '**Prelims Precise**', a monthly current affairs magazine through which we make prelims current affairs revision precise and effective.

This magazine is a comprehensive resource that condenses the significant news of each month into distinct sections such as polity and governance, economic development, science & technology, among others.

Each content is organised with the why in news context followed by its explanation.

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Armed Forces (Special Powers) Act, 1958 (AFSPA)

- The **Union Ministry of Home Affairs (MHA)** has extended the AFSPA, 1958 in **parts of Manipur, Nagaland and Arunachal Pradesh** for another six months from October 1, 2026.
- The **AFSPA** is a law enacted by the Parliament that grants **special powers to the armed forces** to maintain public order and tackle serious security threats in areas declared “**disturbed areas**.”
- “**Armed forces**” under AFSPA includes the **Army, Air Force** when operating as land forces, and **other armed forces of the Union** when operating as land forces, which may include forces such as the Assam Rifles, BSF and CRPF.
- The Act in its original form was promulgated as an ordinance by the **British in response to the Quit India movement in 1942**.
- After Independence, the Armed Forces (Assam and Manipur) Special Powers Act, 1958 was enacted to deal with the **Naga insurgency**..
- In **1972 AFSPA was extended** to all the Northeast states, including Arunachal Pradesh, Meghalaya, Mizoram, Nagaland and Tripura.

Important Sections of AFSPA, 1958

- **Section 3:** The Centre or the State Governor can declare an area “disturbed”.
- **Section 4:** In a disturbed area, the armed forces can use force (even lethal), arrest and search without a warrant.
- **Section 6:** Personnel are legally protected, and no case can be filed without the Central Government’s previous sanction.

Note: A separate AFSPA Act was passed in Punjab and Chandigarh (1983, repealed 1997) and J&K (1990- still in force). The 1958 Act was withdrawn in Mizoram (1986), Tripura (2015) and Meghalaya (2018)

Removal of the Chief Election Commissioner

- **Opposition parties** have announced plans to move **removal notices against CEC Gyanesh Kumar** in Parliament.
- **Article 324(5)** provides that the CEC can be removed only **in the same manner and on the same grounds as a Supreme Court judge**.
- **Article 124(4)** provides that a Supreme Court judge can be removed only for **proved misbehaviour or incapacity**, through a **Presidential order after Parliament passes a removal motion by special majority in both Houses**.
- The detailed procedure is provided under the **Judges (Inquiry) Act, 1968**.
- As per the Act, removal motion can be initiated in either House and must be signed by at least **100 Lok Sabha MPs or 50 Rajya Sabha MPs**.
- After admission, the Act provides for a **three-member inquiry committee** comprising a Supreme Court judge or Chief Justice, a High Court Chief Justice and a distinguished jurist.
- If the committee finds the person guilty of **proved misbehaviour or incapacity**, the matter is placed before Parliament for voting.

Other ECs and Regional Commissioners are removed by the President **solely on the CEC’s recommendation**.

There is **no parliamentary impeachment process**, mandatory investigation, or defined grounds (such as misbehaviour or incapacity) for their removal.

Thus, despite having **equal voting power and equal salary/perks** with the CEC, ECs do **not enjoy equal security of tenure**.

Distinguished Jurist Provision

- The Supreme Court judge **Justice Ujjal Bhuyan** recently **highlighted Article 124(3)(c)**, noting that the provision allowing a **distinguished jurist to become a Supreme Court judge** has remained **unused** for over 76 years.
- **Article 124(3)** provides three **eligibility routes** for appointment as a Supreme Court judge: at least **5 years as a High Court judge**, at least **10 years as a High Court advocate**, or being a “**distinguished jurist**” in the opinion of the President.

- The **distinguished jurist** provision under Article 124(3)(c) has **never been used** since the Constitution came into force.
- A distinguished jurist **may include a person with exceptional expertise** in legal teaching, research or scholarship, even without courtroom practice.
- The Constituent Assembly envisaged this provision **to bring persons with outstanding legal and juristic learning** into the Supreme Court.
- **In practice, the collegium system has become the route** through which higher judicial appointments are recommended, creating a practical issue for using this provision.

Election Symbols Order, 1968

- The Election Commission of India (ECI) **froze the Trinamool Congress (TMC) name and "Flowers and Grass" symbol under Paragraph 15 of the Symbols Order, 1968.**
- **Article 324** of Indian Constitution gives the **ECI complete control** over the preparation of electoral rolls and the conduct of elections to Parliament, State Legislatures, and the offices of the President and Vice-President.
- The **Election Symbols (Reservation and Allotment) Order, 1968** was issued by the ECI under **Article 324** of the Constitution, along with relevant provisions of the **Representation of the People Act, 1951** and **Conduct of Elections Rules, 1961.**
- The Order regulates the **specification, reservation and allotment of election symbols** to political parties and candidates.
- **Reserved symbols** are allotted exclusively to candidates of **recognised (national or state) political parties**, while **free symbols** are available to registered unrecognised parties and independents.
- Under **Paragraphs 6, 6A and 6B**, political parties are classified as **recognised and unrecognised**; recognised parties can be **State or National parties** based on prescribed electoral performance criteria.
- **National parties** have their reserved symbol protected across India, while a **State party's symbol is reserved in the state where it is recognized.**
- **Paragraph 15** gives the ECI power to decide disputes between rival factions claiming a party's **name and symbol.**
- It may recognise one faction or **freeze the symbol** when the dispute cannot be conclusively resolved.
- **Paragraph 16** deals with **merger of political parties** and the consequences for their symbols.

National Commission for Safai Karamcharis (NCSK)

- The **Department of Social Justice and Empowerment** recently appointed the **Chairperson, Vice-Chairperson and Members** of the National Commission for Safai Karamcharis (NCSK).
- The NCSK was established in **1994** as a **statutory body** under the **National Commission for Safai Karamcharis Act, 1993.**
- After the Act **lapsed in 2004**, the NCSK became a **non-statutory body** under the Ministry of Social Justice and Empowerment, with its tenure periodically extended by government resolutions.
- It advises the government on the **welfare and socio-economic conditions of Safai Karamcharis** and sanitation workers.
- It can **investigate complaints and take suo motu action** regarding non-implementation of welfare measures and relevant laws.
- It monitors **working conditions, health, safety and wages** of sanitation workers.
- Under the **2013 Manual Scavenging Act**, it monitors the **eradication of manual scavenging and rehabilitation of manual scavengers.**
- It also monitors implementation of compensation for **sewer deaths**, including the Supreme Court-mandated **₹30 lakh compensation.**
- **Composition:** Chairperson, Vice-Chairperson and **five Members**, supported by a Secretary and administrative staff.

Article 142: Complete Justice

- The **Supreme Court recently invoked Article 142** to quash criminal cases against Gen Z protesters involved in protests linked to the **Cockroach Janta Party (CJP)** following the NEET-UG 2026 question paper leak.
- The **Article 142(1)** empowers the Supreme Court to pass any **decree or order necessary to do “complete justice”** in a matter before it.
 - ✓ There is no similar provision for High Courts and SC had earlier rejected a petition to extend it to HCs.
- The Article allows the SC to **go beyond existing procedural limitations** when necessary to achieve justice, but it cannot override the **Constitution or substantive law**.
- In **Prem Chand Garg v. Excise Commissioner (1963)**, the Court held that Article 142 cannot be used in a manner inconsistent with the **Constitution or Fundamental Rights**.
- In **Supreme Court Bar Association v. Union of India (1998)**, the Court clarified that Article 142 can **supplement the law but cannot supplant substantive law**.
- The provision has historical roots in **Section 210 of the Government of India Act, 1935**, and the earlier principle of “**justice, equity and good conscience**.”
- The **Article 142(2)** gives the Supreme Court full authority nationwide to compel witness attendance, order document production, and investigate or punish contempt of itself.

Registered Unrecognised Political Parties (RUPPs)

- Opposition Congress alleged a ₹10,000 crore tax evasion through donations to 3,260 RUPPs** and demanded a Joint Parliamentary Committee (JPC) probe.
- Under **Section 29A of the Representation of the People Act, 1951**, political parties can register with the **Election Commission of India (ECI)** as **Registered Unrecognised Political Parties (RUPPs)**.
- RUPPs get **tax exemptions on eligible donations, a common symbol on request, and 20 star campaigners**.
- They must report details of **donors contributing more than ₹20,000** annually. Failure to furnish these details can result in loss

of tax exemption.

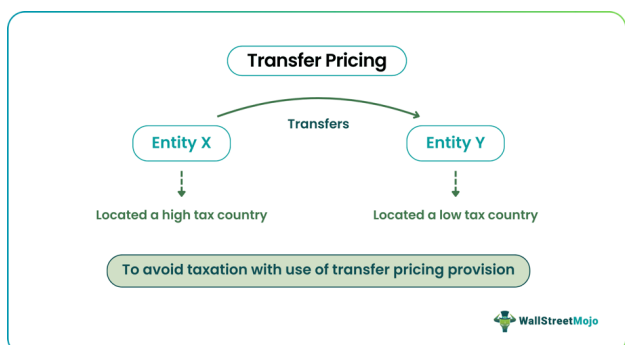
- Section 29C** requires political parties to submit details of contributions above the prescribed threshold.
- Many RUPPs do not contest elections and are sometimes called “**letter-pad parties**.”
- The **ECI cannot ordinarily deregister a political party** merely because it does not contest elections or fails to conduct internal elections.
- In **Indian National Congress v. Institute of Social Welfare (2002)**, the Supreme Court held that the ECI has **no general power of deregistration**, except in exceptional circumstances such as **fraudulent registration or loss of allegiance to the Constitution**.
- The **Law Commission (255th Report)** and ECI have recommended giving the ECI **greater deregistration powers**.

Note: A JPC is a **temporary, bipartisan panel of Lok Sabha and Rajya Sabha MPs** formed to investigate a specific public issue or review a bill before submitting non-binding recommendations. It is **established through a motion** adopted in one House of Parliament and agreed to by the other House, operating under **parliamentary rules, procedures, and privileges** rather than a specific constitutional provision



Economy

Transfer Pricing



- Finance Minister Nirmala Sitharaman recently urged **BRICS countries to share their experiences in resolving international tax disputes**, saying transfer pricing disputes often affect developing countries more.
- Transfer pricing** is the price charged when **two companies belonging to the same multinational group** transact with each other, such as when a subsidiary buys goods, services, technology or intellectual property from its parent company.
- Normally, these transactions should follow the **Arm's Length Principle**, meaning the price should be similar to what would have been charged between two independent companies.
- Transfer pricing can contribute to **Base Erosion and Profit Shifting (BEPS)** when MNCs manipulate prices in transactions between their own companies to **shift profits from high-tax countries to low-tax countries**, thereby reducing their overall tax liability.

For example, an Indian subsidiary may pay an artificially high price to its related company in a low-tax country for services or intellectual property.

This increases the Indian subsidiary's expenses and reduces its taxable profit in India.

The same group can therefore show **lower profits in the high-tax country and higher profits in the low-tax country**, reducing its overall tax liability.

- Measures against BEPS include the **OECD/G20 BEPS Action Plan** that provides 15 actions to tackle tax avoidance and profit shifting,

supported by measures such as transfer pricing rules, Country-by-Country Reporting, the Multilateral Instrument (MLI), and anti-treaty-abuse rules.

- BEPS 2.0** further introduces a **15% global minimum tax under Pillar Two**, reducing the incentive for MNCs to shift profits to low-tax jurisdictions.

Financial Intelligence Unit–India

- The **FIU-IND** recently issued notices to **15 Virtual Digital Asset Service Providers (VDA SPs)** for non-compliance under **Section 13 of the Prevention of Money Laundering Act (PMLA), 2002**.
- VDA Service Providers (VDA SPs)** are businesses such as crypto exchanges and platforms that facilitate the **buying, selling, exchange, transfer or custody of virtual digital assets** like Bitcoin.
- FIU-IND** was established in **2004** under the PMLA as India's central agency for receiving, processing, analysing and disseminating information on **suspicious financial transactions**.
- It coordinates national and international efforts against **money laundering and terrorist financing**.
- FIU-IND functions as an independent body and reports directly to the **Economic Intelligence Council (EIC)**, headed by the Finance Minister.
- It analyses **Cash Transaction Reports (CTRs)** and **Suspicious Transaction Reports (STRs)** and shares financial intelligence with law-enforcement agencies and regulators.
- It is a **multi-disciplinary body** with personnel drawn from organisations such as **CBDT, CBIC, RBI, SEBI, Department of Legal Affairs and intelligence agencies**.

SWIFT Payment System

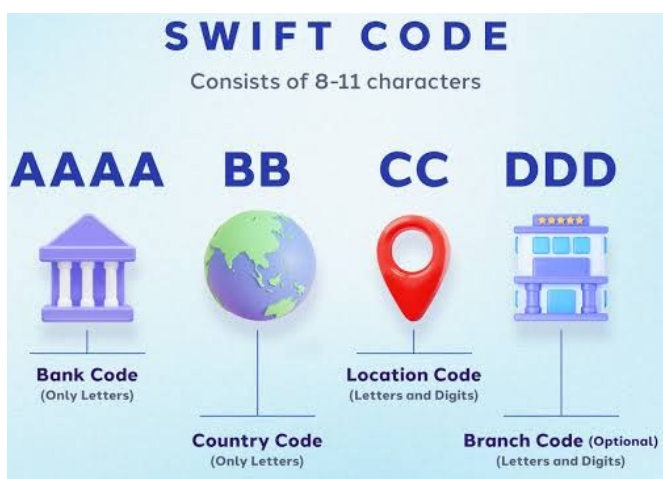
- Amid concerns over the **weaponisation of the US dollar** and Western financial sanctions, **BRICS and Global South countries** are exploring alternatives to the **SWIFT** financial messaging network.
- SWIFT or Society for Worldwide Interbank Financial Telecommunication**, is a secure global messaging network that financial

institutions use to transmit payment instructions and transaction data safely across international borders

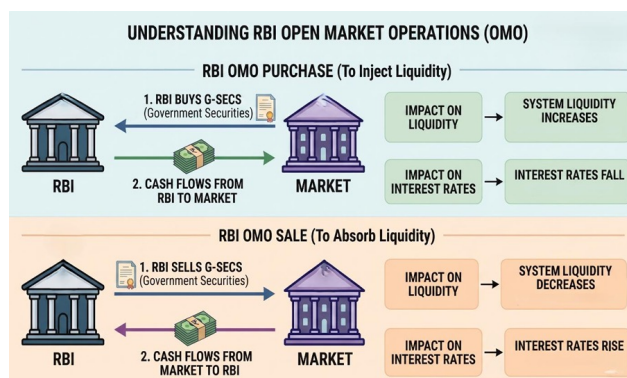
- Headquartered in **Belgium**, SWIFT connects **11,000+ financial institutions** across **200+ countries and territories**.
- Each participant is identified by an **8- or 11-character Bank Identifier Code (BIC)**, commonly called a **SWIFT code**.
- SWIFT **does not hold or transfer money or securities**; it transmits standardised payment instructions between financial institutions.
- ✓ The actual movement of funds occurs through separate **payment and settlement systems**.
- Exclusion from SWIFT can make **cross-border payments and access to international finance more difficult**, potentially affecting trade, investment and foreign funding.

Project mBridge is a **multi-central-bank digital currency (CBDC) platform** initially developed by the **Bank for International Settlements (BIS) Innovation Hub** with the central banks of **China, Hong Kong, Thailand and the UAE**, with **Saudi Arabia** later joining; it aims to facilitate faster **cross-border CBDC payments**.

Cross-Border Interbank Payment System (CIPS) is China's **yuan-denominated cross-border payment and settlement system**, launched in **2015** to facilitate the international use of the **renminbi (yuan)** and overseen by the **People's Bank of China (PBOC)**.



OMO (Open Market Operation) Auction



- The **RBI** conducted an **Open Market Operation (OMO) sale auction**, selling **₹25,000 crore of Government securities (G-Secs)** to absorb **surplus liquidity** from the banking system.
- OMO** is the RBI's **market-based tool to manage durable liquidity** by buying or selling government securities. **Purchase injects liquidity**, while **sale absorbs liquidity**.
- OMO is conducted under **Section 17(8) of the RBI Act, 1934**, which empowers the RBI to buy and sell government securities.
- In an **OMO sale**, banks and other eligible participants **buy securities from the RBI** and pay rupees, thereby **draining liquidity**; in a purchase, the RBI pays rupees to sellers, **injecting liquidity**.
- OMO transactions are conducted through the RBI's **E-Kuber platform** and settled on a **Delivery-versus-Payment (DvP)** basis, where cash payment and the transfer of securities happen simultaneously.

EPFO Wage Ceiling

- The **Union Cabinet** recently approved raising the **wage ceiling for mandatory EPFO coverage** from **₹15,000 to ₹25,000 per month**.
- At present, a **new employee joining with wages above ₹15,000** is generally not automatically required to be covered under the **Employees' Provident Fund (EPF)** system.
- The higher ceiling is expected to bring **over 51 lakh additional employees** under mandatory coverage.
- The **Employees' Provident Fund Organisation** is a statutory body under the **Ministry of Labour and Employment** and administers

three major social-security schemes: **Employees' Provident Funds Scheme (EPF)**, 1952; **Employees' Pension Scheme (EPS)**, 1995; and **Employees' Deposit Linked Insurance Scheme (EDLI)**, 1976.

- **EPF** provides a retirement savings fund, **EPS** provides pension benefits, and **EDLI** provides **life-insurance benefits** to eligible employees.
- Under the usual contribution structure, both the **employee and employer contribute 12% of basic wages plus dearness allowance**.
- The employee's contribution goes entirely to **EPF**, while the employer's contribution is mainly divided between **EPF and EPS**; **EDLI** has a separate employer contribution as prescribed.
- The EPF is **mandatory** for eligible **private-sector establishments** with 20 or more employees, while **public-sector** employees generally **have their own distinct provident funds**—such as the General Provident Fund (GPF) or the National Pension System (NPS)—rather than EPF

UPI MDR Framework, 2026

What Are the Latest UPI Rules?



- The Government recently announced a new **Merchant Discount Rate (MDR)** framework for **UPI**, introducing charges on specified merchant payments above **₹2,000**.
- Earlier, **Section 10A of the Payment and Settlement Systems Act, 2007** did not allow MDR charges to be imposed on specified digital payment transactions, including UPI; however, the **2026 amendment** removed this restriction, thereby enabling **MDR to be charged on eligible UPI transactions**.
- **UPI remains free for individual users**, including **person-to-person (P2P) transfers** and merchant payments up to **₹2,000** and banks have been advised to prevent the merchants from passing the MDR costs to customers

MDR is the fee charged for processing a digital payment, expressed as a **percentage of the**

transaction value. The MDR is generally distributed among participants in the payment ecosystem, such as the **acquiring bank, issuing bank and payment network**, depending on the payment instrument and applicable rules.

Middle Income Trap

- French economist **Thomas Piketty** recently said India can escape the **middle-income trap** through greater investment in **education, healthcare and infrastructure**, along with deeper global cooperation.
- The **middle-income trap occurs** when a **developing country** grows to a middle-income level but fails to transition into a high-income, innovation-driven economy

Why Middle Income Trap Happens?

- ✓ **Loss of Low-Cost Advantage:** As the economy grows, wages rise and the country can no longer compete with poorer nations in cheap, labor-intensive manufacturing (like textiles).
- ✓ **Lack of Innovation:** The country has not yet developed the advanced technology, strong institutions, or highly skilled workforce needed to compete with rich nations in high-value industries (like advanced electronics or pharmaceuticals).
- In the **early stage of development**, countries grow mainly by **investing in physical capital** such as infrastructure, factories, machinery and technology.
- However, as the economy becomes richer, simply **adding more capital produces progressively smaller increases in output (diminishing returns)**.
- To escape the trap, countries need to shift towards **technology adoption, productivity growth and innovation**, rather than relying mainly on cheap labour and capital accumulation.
- Since **1990, only 34 middle-income economies** have become high-income economies; more than a third benefited from **European Union integration or newly discovered oil resources**.
- According to **UNESCO's 2026 SDG 4 Scorecard**, India's **education spending remains around 4.1% of GDP**, while its share in total government expenditure has fallen to **14.2%**.

Global Gender Gap Index 2026

- India retained the **131st rank out of 145 economies** in the **Global Gender Gap Index 2026**, with **64.5%** of its gender gap closed.
- Released by the **World Economic Forum (WEF)**, the index measures gender disparities in **economic participation** and opportunity, **educational attainment**, **health and survival**, and **political empowerment**.
✓ **100% represents full gender parity.**
- Iceland** ranked first, closing **93%** of its gender gap.
- Globally, the average gap closed improved by **0.4 percentage points**, but **political empowerment** remained the weakest dimension at **22.1%**.
- India's overall score has improved by **4.3 percentage points since 2006**, largely due to gains in **education**.
- Education parity stands at **96.6%**, while health parity is **95.6%**.
- India's **economic participation** remains weak at **41.2%**.
- Professional and technical worker parity** nearly doubled from **26.6% in 2006 to 49.9% in 2026**.
- Political empowerment** is India's highest-ranked sub-index (**67th**), but the overall gap remains large: **parliamentary parity is 16.1%** and **ministerial parity is 5.9%**.
- Globally, at the current rate of progress, **full gender parity is estimated to take about 120 years**.

The state of gender gaps, by subindex

Percentage of the gender gap closed to date, 2026



Note: Population-weighted averages, 145 economies.
Source: World Economic Forum, Global Gender Gap Index 2026.

International Relations

United Nations Convention Against Cybercrime

- India recently signed the **United Nations Convention against Cybercrime**, aimed at strengthening international cooperation to combat cybercrime.
- It is the **first universal legally binding international treaty on cybercrime** and was adopted by the **UN General Assembly in 2024**.
- The Convention was opened for signature in **Hanoi, Vietnam, in October 2025**.
- It provides mechanisms for **sharing electronic evidence** and facilitating cross-border cooperation in cybercrime investigations.
- It promotes cooperation in preventing, detecting, investigating and prosecuting cybercrime, along with **technical assistance and capacity-building**, particularly for developing countries.
- It also facilitates **tracing, freezing, confiscating and recovering proceeds of cybercrime**.

Community of Latin American and Caribbean States

- India recently held the **India–Community of Latin American and Caribbean States (CELAC) Foreign Ministers' Meeting** on the sidelines of the United Nations General Assembly session.



- CELAC** is a regional bloc of **33 countries** of Latin America and the Caribbean, established in **2011** to promote regional cooperation and integration.
- It was conceived in **2010 at Playa del Carmen, Mexico**, and formally established at the **Caracas Summit, Venezuela, in 2011**.

- The **United States** and **Canada** are not members of CELAC.
- CELAC promotes **political dialogue, regional integration and socio-economic cooperation** and provides a collective voice for the region in international forums.
- India sees CELAC as an important partner for strengthening **Global South cooperation**, particularly in trade, development, digital technology, artificial intelligence and innovation.

Visegrád Group

- The four members of the **Visegrád Group** recently backed **India's bid for a permanent seat on the United Nations Security Council (UNSC)** at their first foreign ministers' meeting with India.
- The **Visegrád Group (V4)** is a regional grouping of four **Central European countries: Poland, Hungary, Czech Republic and Slovakia**.
- It was established in **1991 at Visegrád, Hungary**, initially by **Poland, Hungary and Czechoslovakia**; after Czechoslovakia split in **1993**, Czech Republic and Slovakia became separate members.
- The V4 is an **informal intergovernmental forum** whose decisions are based on **consensus**, with **no permanent institutional structures**. Its presidency **rotates annually** among the four members.
- It promotes **political consultation and cooperation** in areas such as **economy, defence, energy, culture and regional affairs**.
- The V4 countries also agreed to deepen cooperation with India in **defence, technology, innovation, education, research, connectivity and trade**.



Outer Space Treaty

- **US President Donald Trump** recently posted "The Moon Is Ours" on Truth Social, but the **Outer Space Treaty, 1967** prohibits countries from claiming the **Moon as national territory**.
- The **Outer Space Treaty** provides the basic framework for **international space law** and contains **17 Articles**.
- It was **opened for signature in London, Moscow and Washington, D.C. on 27 January 1967**, and entered into force on **10 October 1967**.
- **Article I:** Outer space, the Moon and other celestial bodies are free for **exploration and use by all States**.
- **Article II:** Prohibits **national appropriation** of outer space, the Moon or other celestial bodies through sovereignty, occupation, use or any other means.
- **Article IV:** Prohibits **nuclear weapons and WMDs** in orbit or on celestial bodies and requires the Moon and other celestial bodies to be used for **peaceful purposes**.
- States are **internationally responsible** for their national space activities, including those of **non-governmental entities**, and are liable for damage caused by their **space objects**.
- **India is a party** to the Outer Space Treaty.
- Other major **UN space treaties** include the **Rescue Agreement (1968)**, **Liability Convention (1972)**, **Registration Convention (1975)** and **Moon Agreement (1979)**. India is a party to the first three and has **signed but not ratified the Moon Agreement**.

India-MERCOSUR PTA

- **India and MERCOSUR** recently signed the **First Additional Protocol** to their Preferential Trade Agreement (PTA) to facilitate acceptance of **electronic Certificates of Origin**.
- **MERCOSUR** stands for **Southern Common Market** (Mercado Común del Sur) and is a **South American regional integration bloc** established in **1991 through the Treaty of Asunción** by Argentina, Brazil, Paraguay and Uruguay.
- Its current **States Parties** are **Argentina, Brazil, Paraguay, Uruguay and Bolivia**, while

Venezuela remains suspended.

- MERCOSUR aims to promote **economic integration**, trade and investment and better integration of member economies with the global market.



- The **Protocol of Ouro Preto (1994)** established its institutional structure; key bodies include the **Common Market Council**, **Common Market Group** and **MERCOSUR Parliament (PARLASUR)**. Its headquarters is in **Montevideo, Uruguay**.
- The **India–MERCOSUR PTA** entered into force on **1 June 2009**; the new protocol gives **electronic Certificates of Origin the same legal validity as paper certificates**, promoting **paperless trade and faster customs procedures**.

International Atomic Energy Agency

- The **IAEA** recently reported **Iran's possible non-compliance to the United Nations Security Council (UNSC)** for the first time in 20 years, potentially opening the way for further action.
- The **IAEA** is an **autonomous intergovernmental organisation within the UN system**, but **outside the UN Charter**, that promotes the **peaceful use of nuclear energy** and seeks to prevent its use for **military purposes**, including nuclear weapons.
- It was established in **1957** as the **"Atoms for Peace"** organisation and is governed by the **Statute of the IAEA**, with headquarters in **Vienna, Austria**.
- The IAEA acts as the **world's nuclear inspectorate**, primarily through safeguards under the **Nuclear Non-Proliferation Treaty (NPT)**, regional nuclear-weapon-free-zone treaties and individual safeguards agreements.
- As of **December 2025**, the IAEA has **181 member countries** and received the **Nobel Peace Prize in 2005**.

- The IAEA has **two main policy-making organs**: the **General Conference**, comprising representatives of all member states, and the **Board of Governors**, which directs the Agency's work between General Conference sessions.
- Under **Article XII.C of the IAEA Statute**, when the Board finds a State in **non-compliance with its safeguards obligations**, it reports the matter to the **UN Security Council and UN General Assembly**.
- **Iran**, as an **NPT member**, has a **Comprehensive Safeguards Agreement (CSA)** with the IAEA, signed in **1974**, covering its declared nuclear material and facilities.
- **Four countries have never signed the NPT**: **India, Israel, Pakistan and South Sudan** and **North Korea** being the only country that **officially removed itself** from NPT in 2003 and from IAEA in 1994.

UN Charter's Enemy State Clauses

- **Japan's Prime Minister Sanae Takaichi** recently called for the removal of **"enemy state" references** from the **UN Charter** during the 81st session of the **UN General Assembly (UNGA)**.
- The **Enemy State Clauses** were included in the **UN Charter in 1945** after World War II, mainly referring to the former **Axis Powers — Germany, Italy and Japan**.
- References to enemy states appear in **Articles 53, 77 and 107**. **Article 53(2)** defines an enemy state as a country that was an enemy of a UN Charter signatory during World War II.
- Although these provisions are considered **obsolete and are not practically used today**, their presence creates a **legal and political anomaly** because Germany, Italy and Japan are now UN members.
- The **UN General Assembly recognised the clauses as obsolete in 1995** and called for their removal in **2005**, but they remain formally in the Charter because the required **amendment process** has not been completed.
- Under **Article 108**, a Charter amendment requires a **two-thirds majority in the UNGA** and ratification by **two-thirds of UN members**, including **all five permanent members of the Security Council (P5) — US, UK, France, Russia and China**.

US-Denmark-Greenland Agreement

- The **United States, Denmark and Greenland** signed a new **security agreement on 22 September 2026** at the **UN Headquarters in New York**, updating the **1951 US-Denmark Defense Agreement on Greenland**.
- It allows the US to expand activities at **Pituffik Space Base** and establish two additional **Defense Areas at Narsarsuaq and Mestersvig**.
- It provides US forces with **access and movement across Greenland**, including its territorial waters, while supporting greater **NATO planning, military presence, exercises and intelligence cooperation** in the Arctic.
- It restricts **non-NATO military installations and persistent military presence** in Greenland unless agreed by the parties, and provides for restrictions on certain **strategically sensitive foreign investments**.
- The agreement **reaffirms Denmark's sovereignty and territorial integrity** and recognises the **Greenlandic people's right to self-determination**.
- The agreement is **legally binding** but will enter into force after the necessary **national parliamentary procedures** are completed.
- Greenland became linked to Denmark through the **1814 Treaty of Kiel**, when Denmark retained Greenland after the dissolution of the Denmark-Norway union.
- Today, Greenland is **self-governing within the Kingdom of Denmark**: it gained home rule in **1979** and expanded self-government in **2009**, while Denmark retains responsibility mainly for **foreign affairs and defence**.

US plans new military bases in Greenland

● Existing US base ● Planned US bases



Source: Google Maps
CNA GRAPHICS



Partners for Multilateralism (P4M) Grouping

- India** joined the inaugural **Partners for Multilateralism (P4M)** Summit on the sidelines of the **UN General Assembly** in New York, with the External Affairs Minister participating as an **initial co-sponsor**.
- P4M** stands for **Partners for Multilateralism, International Law, Peace and Prosperity** and is a **cross-regional grouping of middle powers** aimed at strengthening multilateral cooperation.
- The inaugural summit was held in **New York on 21 September 2026**, during the **UN General Assembly High-Level Week**.
- The grouping includes **India, Australia, Barbados, Brazil, Canada, Kenya and the European Union**, representing different regions and political systems.
- P4M seeks to promote the **UN Charter, international law, peace, human rights, human dignity, inclusive development and shared prosperity**.
- India advocates **“effective multilateralism”**, combining universal institutions with **issue-based cooperation among willing countries**, rather than creating another exclusive bloc or bureaucracy.

Yemen War

Houthi advance toward Bab el-Mandeb

Iran-aligned Houthi forces have taken control of Perim Island (Mayun) and reached the town of Dhubab, after capturing the Red Sea port of Mocha, according to Reuters and AP reports.



Location and advance based on Reuters/AP reporting, Sept. 11, 2026.

The Indian EXPRESS
JOURNALISM OF COURAGE

- Houthis (Ansar Allah)** recently made military advances along Yemen's **Red Sea coast**, including **Mayun (Perim) Island** in the **Bab el-Mandeb Strait** and the port of **Mokha**.
- Houthis**, formally **Ansar Allah (Partisans of God)**, are an **armed political and religious movement from northern Yemen** that emerged in the 1990s and is associated with the **Zaydi Shia** community.

- They control much of **north-western Yemen** and are a major actor in the **Yemeni civil conflict**; their de facto leader is **Abdul Malik al-Houthi**.
- The Houthis are **backed by Iran** and identify with the Iran-led “**Axis of Resistance**”, but they remain a **Yemeni armed movement**, not an Iranian state organisation.
- They have attacked **commercial shipping in the Red Sea** and carried out **cross-border attacks against Saudi Arabia and the UAE**.
- Their presence around the **Red Sea and Bab el-Mandeb Strait** gives them strategic importance for **global maritime trade and energy security**.

The 1991 India–Pakistan Agreement

- **India summoned Pakistan’s Charge d’Affaires** after a Pakistani naval vessel collided with an Indian Navy warship in the **North Arabian Sea**, with India citing **Article 10** of the 1991 agreement.
- The **Agreement on Advance Notice on Military Exercises, Manoeuvres and Troop Movements** is a **bilateral confidence-building measure (CBM)** signed in **New Delhi on 6 April 1991** to prevent crises caused by **misreading military intentions**.
- It requires both countries to give **advance notice of major military exercises, manoeuvres and troop movements** and share relevant information through **diplomatic channels**.
- **Article 10** requires Indian and Pakistani **naval ships and submarines to maintain at least 3 nautical miles** of separation while operating in **international waters**, to prevent accidents.
- Advance-notice periods are **30 days for divisional-level, 60 days for corps-level, 90 days for army-level, 30 days for major naval exercises, and 15 days for Regional Command-level or higher air exercises**.
- **Combat aircraft** must generally remain at least **10 km from the other country’s airspace**, while aircraft operating from specified forward airbases must maintain a **5-km** separation.

Note: The High Commissions are currently headed by **Chargés d’Affaires** because both India and Pakistan presently have **no serving High Commissioners** in the other country since 2019. A **Charge d’Affaires** is a diplomat who heads the mission **when there is no serving High Commissioner** (or when the High Commissioner is temporarily absent).

BRICS New Delhi Declaration

- **BRICS leaders** adopted the **New Delhi Declaration** at the **18th BRICS Summit** held under **India’s chairship** in New Delhi on **12 September 2026**, with the theme “**Building for Resilience, Innovation, Cooperation, and Sustainability**.”
- **BRICS** is a grouping of **major emerging-market and developing countries** that promotes consultation and cooperation on **global and regional issues** and **global political and economic governance**.
- BRICS began as **BRIC (Brazil, Russia, India and China)** in **2006**; **South Africa** joined in **2010**, while the **first BRIC Leaders’ Summit** was held at **Yekaterinburg, Russia, in 2009**.
- The Declaration supports **WTO reform** and a **rules-based multilateral trading system**, while opposing **unilateral economic sanctions, secondary sanctions and trade-restrictive measures**, including tariffs and non-tariff barriers.
- Key initiatives include **BRICS AGRIN** for cooperation on **agricultural inputs, genetic resources and information**, a **Continuity and Implementation Mechanism** through the **BRICS Troika**, and a **BRICS Training Hub Network** and **mental-health Centres of Excellence**, coordinated by **NIMHANS, Bengaluru**.



Permanent Court of Arbitration (PCA)

- The Hague based **PCA** ruled that the **Indus Waters Treaty (IWT)** remains in force and restricted certain works on the **Ratle Hydroelectric Project**.
- The **PCA** was established in **1899** through the **Hague Convention for the Pacific Settlement of International Disputes** and

is headquartered at the **Peace Palace, The Hague, Netherlands**.

- It is an **intergovernmental organisation** that provides **arbitration and other peaceful dispute-resolution mechanisms**; unlike the **International Court of Justice (ICJ)**, it has **no permanent bench of judges**.
- The PCA can administer disputes involving **States, State-controlled entities, international organisations and private parties**, depending on the applicable agreement and rules.
- **Arbitrators and conciliators are appointed for individual cases**, rather than being permanent judges.
- In the **Indus Waters Treaty dispute**, the PCA constituted a **Court of Arbitration in 2023 at Pakistan's request**.
- **India has not participated** in the Court of Arbitration, arguing that it is an **improper parallel process** because the same issues are already before the **Neutral Expert** under the **IWT's dispute-settlement mechanism**.

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History & Culture

Mandar Instrument



- The traditional **Mandar**, a folk percussion instrument of **Jharkhand**, has received the **Geographical Indication (GI) tag**, recognising its unique regional and cultural identity.
- **Mandar** is a **double-headed, barrel-shaped percussion instrument**, traditionally made using **locally sourced red clay and leather**.
- With the addition of Mandar, **Jharkhand now has 13 GI-tagged products**: **Sohrai paintings** of Hazaribagh, GI-tagged in **2021**, and **Mandar** being the latest addition.
- Other **GI-tagged percussion instruments** in India include **Palakkad Maddalam (Kerala)**, **Banaras Tabla and Amroha Dholak (Uttar Pradesh)**, **Assam Bihu Dhol and Bodo Kham (Assam)**, along with the recently GI-tagged **Mandar (Jharkhand)**.
- The **Geographical Indications Registry**, located in **Chennai**, is the official authority responsible for the **registration and legal protection of GI tags** in India.
- It functions under the **Controller General of Patents, Designs and Trade Marks, DPIIT, Ministry of Commerce and Industry**, under the **Geographical Indications of Goods (Registration and Protection) Act, 1999**, which came into force in **2003**.

Modhera Sun Temple



- The Prime Minister recently **highlighted the thousand-year history** of Modhera Sun Temple, recalling its destruction during invasions and its subsequent reconstruction, while also highlighting the village's transformation into India's first 24x7 village.
- The Modhera Sun Temple is located in **Mehsana district, Gujarat**, on the **left bank of the Pushpavati River**, a tributary of the Rupan River.
- The temple was built in **1026–27 CE during the reign of Bhima I of the Chaulukya (Solanki) dynasty** and is dedicated to the **Sun God (Surya)**.
- It is an important example of the **Maru-Gurjara architectural style** and is constructed mainly of **yellow sandstone** and the complex comprises the **Garbhagriha, Gudhamandapa, Sabhamandapa (Rangamandapa), and a sacred water tank (Kunda/suryakund)**.
- The rectangular **Suryakund** contains **108 shrines** dedicated to various deities and the temple also has **twelve representations of the Adityas**, symbolising the Sun in relation to the **twelve months**.

Tulu Language

- The **Karnataka government** recently granted **Tulu** the status of a **second additional administrative language** in **Dakshina Kannada and Udupi districts**, allowing its use in government offices alongside Kannada.
- **Tulu** is a **Dravidian language** mainly spoken in **Dakshina Kannada, Udupi and Kasaragod (Keralam)**, a region popularly known as **Tulu Nadu**.
- Tulu has a rich **oral literary tradition**, including **Paddana** folk songs and **Yakshagana** traditional theatre.

- Tulu historically had its own **Tigalari script**, which resembles the Malayalam script, but **Kannada script** is predominantly used for writing Tulu today.
- Despite long standing demand, **Tulu is not included in the Eighth Schedule** of the Constitution and is neither an official language of state.
- Tulu is classified as **Vulnerable by the UNESCO Atlas of the World's Languages in Danger**.
- **Official Language of State: Article 345** empowers a **State Legislature** to adopt **Hindi or one or more languages in use in the State** as the **official language(s) of the State** for administrative purposes.
- **Article 347** empowers the **President** to direct the **official recognition of a language** throughout a State or in a part of it when a **substantial proportion of the State's population** demands such recognition.

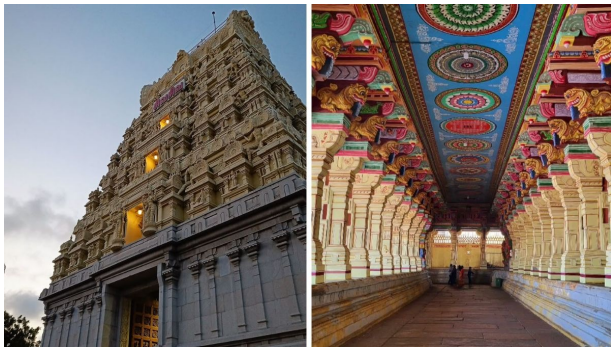
Bidriware



- **Bidriware**, the centuries-old metal craft of **Bidar, Karnataka**, is facing pressure from **rising prices of silver, copper and zinc**, along with declining demand and reduced availability of traditional Bidar Fort soil.
- Developed during the **Bahmani Sultanate**, Bidriware reflects **Persian, Arabic and Turkish influences** and is known for its distinctive **black-and-silver appearance**.
- The base is an alloy of **zinc and copper**, generally in a **16:1 ratio**, on which intricate designs are engraved and **pure silver is inlaid**; gold may also be used.
- The characteristic **black finish** is traditionally produced using **soil from Bidar Fort**, whose mineral composition helps create the dark surface that contrasts with the silver inlay.

- Techniques include **Aftabi, Koftgiri, Tehnishaan, Munabatkari and Tarkashi**, involving different forms of engraving, inlay and ornamentation.
- Bidriware has a Geographical Indication (GI) tag**, recognising its distinctive association with **Bidar, Karnataka**.

Ramanathaswamy Temple



- India welcomed **BRICS** leaders against a backdrop featuring the iconic **Ramanathaswamy Temple** of Tamil Nadu.
- Located at **Rameswaram on Pamban Island, Ramanathapuram district**, the temple is an important pilgrimage centre associated with **Shaivism and Vaishnavism**.
- It is one of India's **12 Jyotirlingas**, where **Lord Shiva** is worshipped as a Jyotirlinga, and is traditionally associated with **Lord Rama's worship of Shiva** after returning from Lanka.
- The temple is a major example of **Dravidian architecture**, known for its **38-metre-high gopuram, long corridors and intricately carved pillars**.
- While the exact origins are unknown, the temple was **developed and expanded over several centuries**, with contributions from the **Pandys** and later substantial additions under the **Sethupathi rulers**, particularly between the **12th and 17th centuries**.
- Its **third (outermost) corridor**, associated with **Muthuramalinga Sethupathi**, has **1,212 pillars** and is renowned for its monumental scale, symmetry and stone carvings.
- The temple has **22 sacred theerthams (holy water sources)**, with **Agni Theertham**, located on the seafront near the temple, being particularly important for pilgrims.

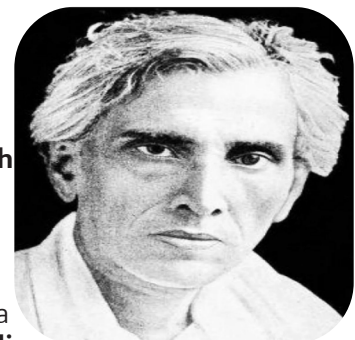
Gollala Gudi Temple



- The **Archaeological Survey of India (ASI)** recently notified **Gollala Gudi Temple** at Palampet in **Mulugu district, Telangana**, as a **Monument of National Importance**.
- Gollala Gudi** is a **Kakatiya-era temple** located at Palampet, on the **south-western side of the UNESCO World Heritage Site, Kakatiya Rudreshwara (Ramappa) Temple**.
- It is a **Trikutalaya**, consisting of an **east-facing mandapa** and **three garbhagrihas (sanctums)**; the central sanctum houses a **Shiva Lingam**.
- The temple stands on a **high plinth** decorated with animal figures and floral designs, while its walls contain niches depicting **Vishnu, Lakshmi, Ganesha and Mahishasuramardini**.
- A monument is declared a **Monument of National Importance** under the **Ancient Monuments and Archaeological Sites and Remains Act, 1958 (AMASR Act)** when it has **historical, archaeological or artistic interest** of sufficient national importance.
- The **Central Government**, through notification after following the prescribed process, can declare such a monument protected; the **ASI** then administers and conserves it.

Saratchandra Chattopadhyay

- The nation paid tribute to **Saratchandra Chattopadhyay** on his **150th birth anniversary**.
- Saratchandra Chattopadhyay (1876–1938)** was a renowned **Bengali novelist and short-story writer**, born on **15 September 1876** at **Devanandapur, Bengal**.
- His major works include **Devdas, Parineeta,**



Srikanta, Pather Dabi, Charitraheen and **Palli Samaj. Devdas (1917)** became one of his most widely recognised works and was adapted into several films.

- His writings portrayed **19th-century Indian society**, particularly rural Bengal, and addressed **poverty, social inequality and injustice**.
- He was known for his **strong portrayal of women and advocacy of women's rights**, with many female characters challenging prevailing social norms.
- He was also associated with the **Indian nationalist movement** and served as **President of the Howrah branch of the Indian National Congress from 1921 to 1936**.
- His novel **Pather Dabi** dealt with **revolutionary nationalism**.

Poompuhar

- **Third phase of underwater archaeological exploration** has commenced off the coast of **Poompuhar**, in **Mayiladuthurai district, Tamil Nadu**.
- **Poompuhar**, also known as

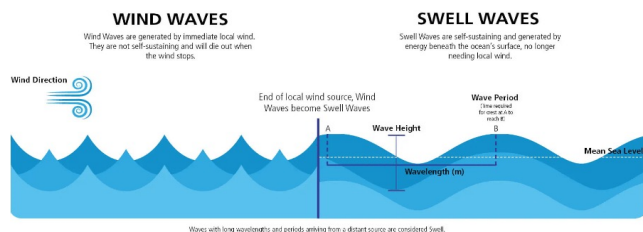


Kaveripoompattinam/Puhar, was an important **ancient Chola port city** located at the **mouth of the Cauvery River** and flourished during the **Sangam period**.

- It was a major centre of **maritime and international trade**, with archaeological evidence such as **ceramic fragments** and a possible **West Asian torpedo jar** indicating overseas connections.
- The ancient city is **partly submerged in the Bay of Bengal**; **Pattinappālai** and **Manimekalai** describe its prosperity and its subsequent loss to the sea.
- **Underwater exploration** has found **ceramic fragments and terracotta ring wells** on the seabed, while **sonar surveys** have identified possible structural remains beyond the present shoreline.

Geography

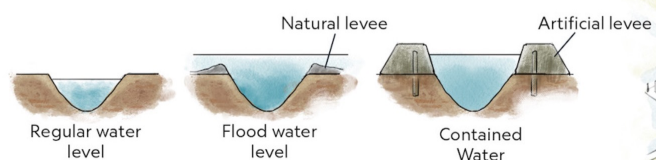
Swell Wave



- The **Indian National Centre for Ocean Information Services (INCOIS)** has issued a **Red Alert** for Kerala's coastal districts due to dangerous **swell waves** and possible coastal flooding.
- **Swell waves** are **long-period waves generated by distant storms and strong winds**, which can travel thousands of kilometres before reaching the coast.
- Along Kerala, they are often linked to storms over the **southern Indian Ocean** and are locally known as **Kallakkadal**.
- They can cause **coastal flooding, sea erosion and damage to fishing infrastructure**.
- Unlike **tsunamis**, which are usually triggered by **underwater earthquakes or other seabed disturbances**, swell waves are generated by **distant storms**.
- **INCOIS** is an **autonomous body under the Ministry of Earth Sciences (MoES)**, headquartered in **Hyderabad**, established in **1999** to provide **ocean data, information and early-warning services** to society, industries and government agencies.
- It operates the **Swell Surge Forecast System**, launched in **2020**, which can provide **up to seven days of advance warning** of swell-wave events.

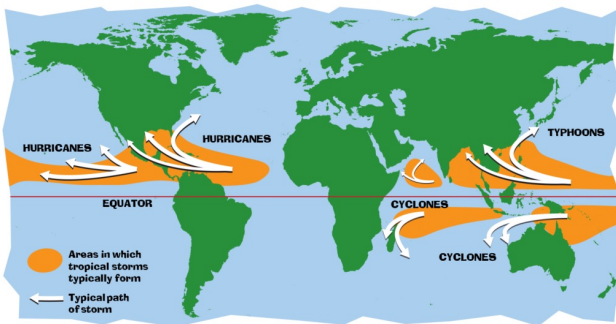
Levees on the Mississippi

One of the oldest strategies to manage flooding is the artificial levee. Artificial levees are human-made embankments, designed to keep floodwaters out of developed areas.



- Nearly **2,000 km of levees** along the **Mississippi River** have helped protect cities and farmland from major floods.
- Levees are raised barriers**—built as **earthen embankments or concrete floodwalls**—designed to **keep rising water inside a river channel or coastal area** and protect adjacent land from flooding.
- While human-made levees are engineered, **natural levees form over time** when sediment, sand, and silt drop alongside a riverbank during repeated floods.
- Along the Mississippi, levees have reduced natural flooding and **sediment deposition in Louisiana's coastal wetlands**, contributing to **wetland degradation and coastal land loss**.
- Thus, levees provide **flood protection** but can also create **downstream ecological consequences**.

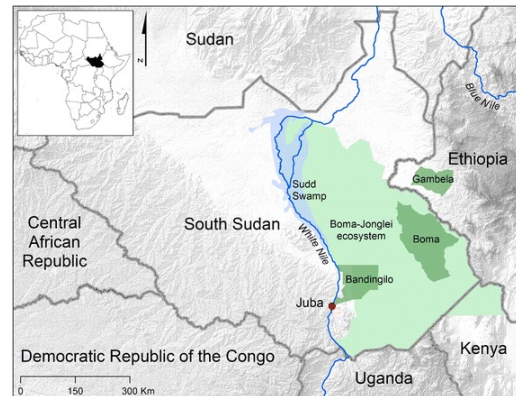
Typhoon Dujuan



- Typhoon Dujuan** recently battered **Tokyo and eastern Japan**, bringing torrential rain and damaging winds; **Izu Oshima** recorded a record **832 mm of rain in 48 hours**.
- Dujuan was a **tropical cyclone** over the **Northwestern Pacific**, with maximum sustained winds of **130 km/h** and gusts up to **194 km/h**.
- It intensified over **warm ocean waters ($\geq 26.5^{\circ}\text{C}$)** as evaporation and condensation released **latent heat**, lowering pressure and strengthening the storm; the **Coriolis force** causes its anticlockwise rotation in the Northern Hemisphere.
- It caused **flooding, landslides and debris flows**, besides disrupting **flights and bullet-train services**.
- A **tropical cyclone** is a rapidly rotating **low-pressure storm** formed over warm oceans, with strong winds and heavy rainfall. It is called a **hurricane** in the Atlantic/Eastern Pacific,

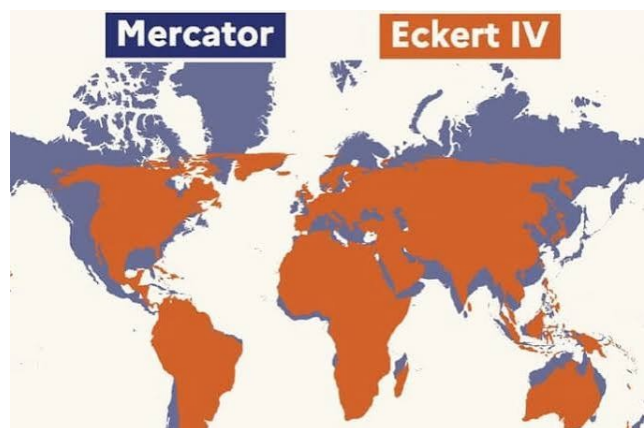
typhoon in the Northwest Pacific, and **cyclone** in the Indian Ocean/South Pacific.

Badingilo–Boma Landscape



- Boma–Badingilo Migratory Landscape (BBML)** in **South Sudan** has become the country's **first UNESCO World Heritage Site**.
- It includes **Boma and Badingilo National Parks** and surrounding **wetlands, floodplains, savannas and wildlife corridors**.
- It hosts one of the world's largest wildlife migrations, involving about **6 million antelopes**, especially **White-eared Kob, Tiang and Mongalla Gazelle**.
- Located between the **Sudd wetland system** and **East Sudanian Savanna**, it supports species such as **African Savanna Elephant, Lion, African Wild Dog and Nile Lechwe**.
- Major threats include **poaching, wildlife trafficking, infrastructure, extractive activities and climate change**.

Equal Earth Map

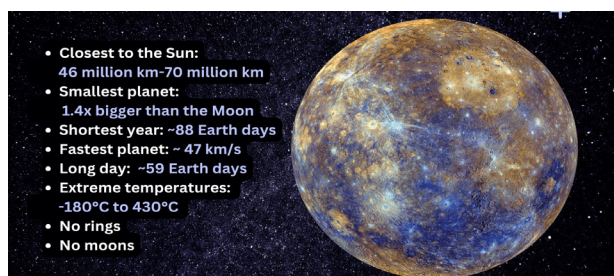


- The **United Nations General Assembly** recently adopted the **“Correct the Map” resolution**, supporting the use of the **Equal Earth projection** and other **equal-area**

projections where accurate comparison of land areas is important.

- **Equal Earth**, developed in **2018**, is an **equal-area world map projection** that preserves the relative sizes of continents and countries more accurately than the **Mercator projection**.
- **Mercator projection** increasingly enlarges landmasses towards the poles, making regions such as **Greenland appear disproportionately large**. Equal Earth preserves their actual relative area.
- **Africa is about 14 times larger than Greenland**, although their apparent sizes can look much more comparable on Mercator maps.
- The UN resolution is **non-binding**. It **does not ban Mercator** or mandate Equal Earth as the single replacement; it recognises that every flat-map projection involves compromises in **area, shape, distance and direction** because the Earth is spherical.

Mercury: Planetary Shrinkage



- A recent study suggests **Mercury may have shrunk by up to 23 km in diameter**, about **30% more than earlier estimates**, as its interior cools and contracts.
- **Mercury** is the **smallest and innermost planet**, closest to the Sun; it completes an orbit in **88 Earth days** and has **no moons or rings**.
- It has extreme temperatures of about **430°C by day and -180°C at night**, while **Venus is the hottest planet** due to its strong **greenhouse effect**.
- Cooling and contraction of Mercury's interior produce **lobate scarps** and provide clues about its **interior, geological history and magnetic field**.
- It has a **large metallic core** and is the **second-densest planet after Earth**.
- **BepiColombo**, the **ESA-JAXA** mission, is studying Mercury's **surface, interior, composition and magnetosphere** and is expected to enter orbit in **November 2026**.

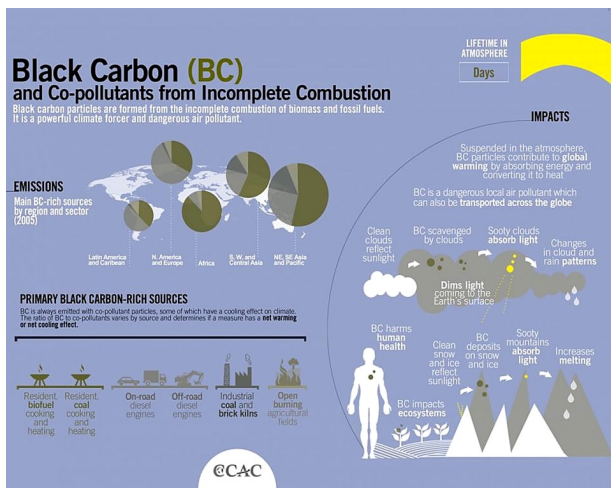
Environment & Ecology

PRAMAAN Certificate

- India has issued its first **PRAMAAN certificates** under the **Indian Forest and Wood Certification Scheme (IFWCS)**.
- **IFWCS** was launched by the **Ministry of Environment, Forest and Climate Change (MoEFCC)** in **2023** as a **verification system** designed to certify that wood, bamboo, and other forest products are **sourced sustainably and legally**.
- This was supposed to **help Indian farmers and wood companies** sell products globally—such as to Europe—where strict anti-deforestation rules apply.
- **Now, PRAMAAN** becomes the **first physical certification** issued under this scheme and stands for the Programme for Recognition and Accreditation of sustainable Management practices for Agroforestry And Natural forestry resources.
- Once an **independent auditor** checks a farm and confirms it **follows all the IFWCS rules**, the government awards them a **PRAMAAN Certificate**.
- This reduces costs and dependence on foreign labels such as **FSC (Forest Stewardship Council)**.
- **PRAMAAN Certification is valid for 5 years**, with **annual independent third-party audit**, and no self-declaration.



Black Carbon



- A recent report identifies **black carbon** as a major contributor to **Himalayan glacier melt**.
- Black carbon (soot)** is produced by **incomplete combustion** of fossil fuels, biofuels and biomass and is a component of **PM2.5**.
- It is a **Short-Lived Climate Pollutant (SLCP)**, remaining in the atmosphere for **days to weeks**, but strongly absorbing sunlight and warming the atmosphere.
- When deposited on **snow and ice**, it reduces **albedo (reflectivity)**, increasing solar absorption and accelerating **snow and glacier melt**.
- In the Himalayas, modelling attributes about **one-third of glacier mass loss** to South Asian black carbon; **brick kilns** account for around **32–42%** of anthropogenic black-carbon deposition in the region.

Limiting Overshoot Report

- The **UN Environment Programme (UNEP) Limiting Overshoot Report** warns that global warming is potentially peaking around **1.8°C even under an optimistic scenario**.
- A **smaller and shorter overshoot** around **1.5°C** would reduce climate risks, while prolonged warming could threaten **ice sheets, the Amazon rainforest and Atlantic Meridional Overturning Circulation (AMOC)**.
- AMOC** is a **large-scale ocean circulation system in the Atlantic** that transports warm surface water northward and cold, dense deep water southward, helping distribute heat and regulate the climate of Europe, the Atlantic region and beyond.

- Countries need to **cut emissions immediately**, and achieve **net-negative CO₂ emissions** to reduce temperatures.
- The impacts will be **unequal**, with countries contributing least to global warming often being highly vulnerable.

Myristica Swamps



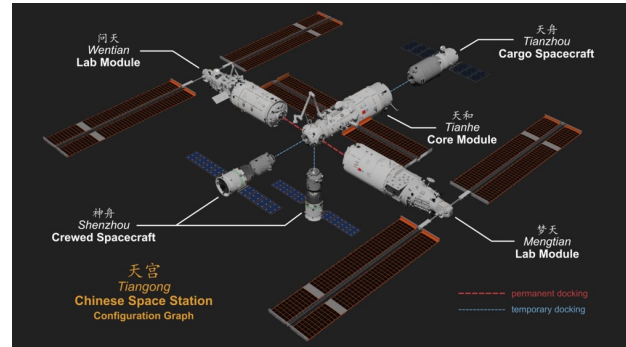
- A recent study highlights that **Myristica Swamps** are at risk of extinction.
- Myristica swamps are **rare, ancient freshwater swamp forests** dominated by **evergreen trees of the nutmeg family (Myristicaceae)**, found primarily in low-lying, waterlogged (poorly drained) valleys of India's Western Ghats.
- Swamp forests** are forested wetlands where the soil is **permanently or seasonally saturated or flooded with water**. Unlike open marshes or bogs that are dominated by grasses and mosses, swamp forests are defined by their **dense growth of woody trees and shrubs that have adapted** to survive in waterlogged, oxygen-poor environments.
- Their trees have specialised **stilt roots and pneumatophores (breathing roots)** that help them survive oxygen-poor, waterlogged conditions.
- They are **restricted to pockets in the Western Ghats**—primarily in southern **Kerala** (such as Kulathupuzha), **Karnataka** (Uttara Kannada), **Goa**, small parts of **Tamil Nadu**, and **Maharashtra**, as well as the **Andaman and Nicobar Islands**.
- They are important **freshwater reservoirs, biodiversity hotspots and carbon stores**; in Kerala, they cover only about **0.004% of the State's area** but harbour **16.3% of Western Ghats endemic species**.

India's CCTS and UK CBAM

- The **UK** has officially recognised India's **Carbon Credit Trading Scheme (CCTS)** as a qualifying carbon-pricing framework under the **UK Carbon Border Adjustment Mechanism (CBAM)**.
- CBAM is an **environmental import tax** designed to **prevent "carbon leakage"**—a process where domestic companies move production to countries with weaker climate laws to avoid carbon costs. The **EU CBAM** was launched this January 2026 and **UK CBAM** is set to begin next year.
- **CCTS**, introduced in **2023**, is a **market-based system** that puts a **price on greenhouse-gas emissions** and allows **carbon credits to be traded**.
- It was enabled by the **Energy Conservation (Amendment) Act, 2022**, which empowers the government to establish a carbon market and Bureau of Energy Efficiency (BEE) to issue **Carbon Credit Certificates (CCCs)**.
- Under the **compliance mechanism**, industries receive **GHG emission-intensity targets**; entities performing better can earn CCCs, while those falling short may need to purchase credits from the market.
- **One CCC = one tonne of CO₂ equivalent (tCO₂e)** reduced, avoided or removed.
- The **BEE** develops the emission-intensity targets, the **Ministry of Power (MoP)** recommends them after reviewing inputs from BEE and the **National Steering Committee for the Indian Carbon Market (NSICM)**, and the Ministry of Environment, Forest and Climate Change (**MoEFCC**) formally notifies them under the **Environment Protection Act, 1986**.

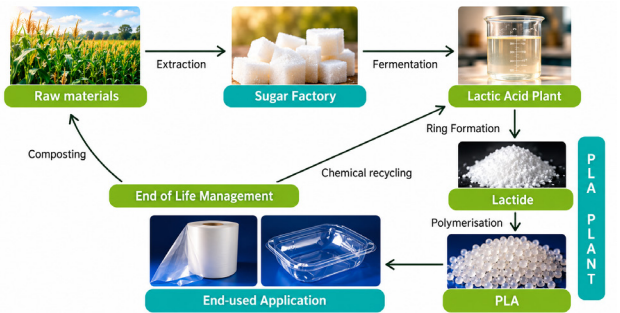
Science & Technology

Tiangong Space Station



- **Pakistan** is set to send its **first astronaut** to China's **Tiangong Space Station** as a **payload specialist** under a China–Pakistan cooperation programme.
- **Tiangong ("Sky Palace")** is a **Chinese-operated, permanently crewed space station** in **Low Earth Orbit (LEO)** and the third and final stage of China's **Manned Space Program**.
- It consists of the **Tianhe core module** and two science modules, **Wentian and Mengtian**; the **Xuntian space telescope** (set for launch in 2027) will share its orbit and be capable of docking with the station.
- It orbits at about **340–450 km**, similar to the **International Space Station (ISS)**, but is much smaller with **three main modules**.
- Unlike the ISS, Tiangong is **operated by a single country, China**, and normally accommodates **three astronauts** for about **six months**.
- It serves as an **in-orbit laboratory** for research in **space life sciences, biotechnology, microgravity physics, materials science and fundamental physics**.
- **Bharatiya Antariksh Station (BAS)** is India's planned **modular space station in Low Earth Orbit (LEO)**, expected to orbit at about **400 km altitude** and consist of **five modules**. The first module is planned for launch around **2028**, with the station targeted to become fully operational by **2035**.

Polylactic Acid production



- India has launched commercial production of **Polylactic Acid (PLA)-based biodegradable plastic** through Balrampur Chini Mills Limited (BCML) under the **BioE3 framework**.
- PLA is a plant-based **thermoplastic** (can be melted and reshaped) **polymer** made from **renewable resources** such as sugarcane, corn and cassava.
- It is produced by **converting lactic acid**, obtained through **fermentation** of plant-based sugars, **into a polymer**.
- Applications** include food packaging, bottles, films, medical devices and 3D printing.
- Although biodegradable, **PLA does not readily decompose** under ordinary environmental conditions; **industrial composting** helps accelerate its breakdown.
- BioE3 Policy** stands for Biotechnology for Economy, Environment and Employment. Approved in **August 2024** under the **Department of Biotechnology (DBT)**, it promotes high-performance biomanufacturing and sustainable economic growth.

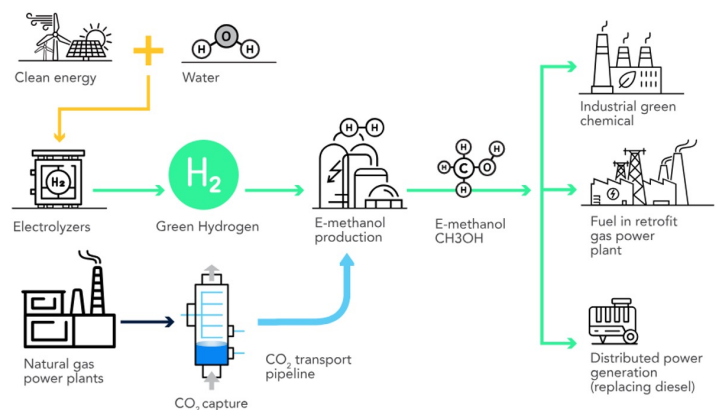
PFOS “Forever Chemical”

- A recent study found that **PFOS exposure can weaken the body’s ability to fight viral infections**.
- PFOS (Perfluorooctanesulfonic acid)** is a **man-made fluorosurfactant** belonging to the **PFAS (per- and polyfluoroalkyl substances)** group.
- A **fluorosurfactant** is a synthetic chemical that **lowers the surface tension of liquids** much more effectively than standard soaps or hydrocarbon options
- It is a **persistent organic pollutant (POP)** that resists degradation and can **persist and accumulate** in the environment and living organisms.

- PFOS has been used in **fire-fighting foams, water- and stain-resistant coatings, metal plating and floor polishes**.
- It was added to **Annex B of the Stockholm Convention in 2009**, restricting its production and use subject to specified exemptions.
- Exposure is associated with **immune and developmental effects**, and PFOS has been detected in **humans and wildlife**.

E-Methanol

- The government recently laid the foundation stone for **India’s first port-based e-methanol plant at Kandla, Gujarat**, with an investment of **₹2,300 crore**.
- E-methanol** is a **synthetic low-carbon fuel** made by combining **green hydrogen** produced using renewable electricity with **renewable CO₂**.
- Its main inputs are **renewable electricity, water and renewable CO₂**, sourced from **biogenic sources** or technologies such as **Direct Air Capture (DAC)**.
- Direct Air Capture (DAC)** is a technology that uses chemical or physical processes to extract carbon dioxide (CO₂) directly **from ambient air**.
- It can be used as a **marine fuel**, helping decarbonise the **hard-to-abate shipping sector**, while using existing methanol storage and bunkering infrastructure.
- Large-scale production faces challenges including the availability of **cheap renewable electricity and renewable CO₂**, and the need for **electrolysers, CO₂ capture and transport infrastructure**



Peptides

- A '**peptide party**' in Bengaluru was recently cancelled after **Karnataka Food Safety and Drug Administration** officials intervened.
- **Peptides** are **short chains of amino acids** that can act as signalling molecules in the body.
- Naturally occurring peptides include **insulin, endorphins and growth hormone-releasing hormone**, involved in blood-sugar regulation, pain relief and growth.
- They play roles in **hormone regulation, metabolism, immunity, tissue repair, growth and inflammation**.
- Some peptides are used in **approved medicines**, including **insulin and GLP-1 medicines** for diabetes and obesity.
- Many peptides marketed online for **weight loss, muscle growth and anti-ageing** are unapproved or inadequately studied and may pose risks such as **contamination, allergic reactions and unknown long-term effects**.

India's First LNG-Powered Train

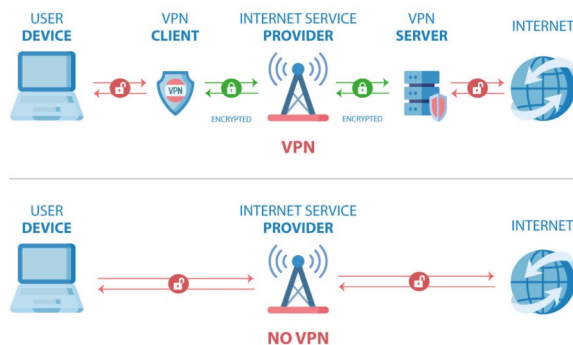
- India's first **LNG-powered train** was recently flagged off from **Sabarmati, Gujarat**, as a **Diesel-LNG dual-fuel DEMU (Diesel-Electric Multiple Unit)**.
- **DEMU is a self-propelled train** (moves using its own built-in motors or engines and not a separate locomotive) where **onboard diesel engines drive electrical generators** that power electric traction motors on the wheels
- It uses **two 1,400-horsepower Driving Power Cars** converted to operate on both **LNG and diesel**, with LNG expected to replace about **40% of diesel consumption**.
- The initiative aims to **reduce diesel use, emissions and operating costs**, with carbon emissions potentially reduced by up to **30%**.
- **LNG-powered trains** provide an alternative for **non-electrified railway routes**, complementing electrification and supporting Indian Railways' **net-zero emissions target by 2030**.

Earth observation satellite (EOS-05)

- **ISRO** has launched **EOS-05 (formerly GISAT-1A)** aboard **GSLV-F17** from **Sriharikota**, replacing the earlier lost **GISAT-1** mission.
- **EOS-05** is India's first imaging satellite designed to operate from a **geosynchronous orbit**, enabling **continuous observation of the same region**.
- The **2,367-kg satellite** will be placed in a **Sub-Geosynchronous Transfer Orbit (SGTO)** and then raised to its operational geosynchronous orbit.
- From about **36,000 km altitude**, it will provide **near-real-time imagery** for **border monitoring, weather observation, agriculture, disaster management and strategic applications**.
- Its geosynchronous orbit enables **persistent Earth observation** of the Indian subcontinent.
- A **geosynchronous orbit** is an **Earth-centered orbit** where a satellite's orbital period **matches the Earth's rotational period** of one sidereal day (23 hours, 56 minutes, and 4 seconds)

Virtual Private Network (VPN)

HOW A VPN WORKS



- Authorities in **Doda, Jammu & Kashmir**, recently banned **VPN use for two months**, citing **cybersecurity, unlawful activities and public-order concerns**.
- A Virtual Private Network (VPN) works by **routing your device's internet connection** through an encrypted, **private server** instead of your regular Internet Service Provider (ISP)
- It uses **encryption and tunnelling** and **masks the user's IP address**, making the connection appear to originate from the VPN server's location.

- VPNs enable **secure remote access** to private networks and protect sensitive data, especially on **public or unsecured networks**.
- However, VPNs can also be used to **bypass website blocks and cyber restrictions**; in Doda, the ban applies to **individuals, institutions, cyber cafés, businesses and Internet Service Providers (ISPs)**, except authorised government use.



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Defence

T-90 Main Battle Tank



- The **Ministry of Defence** signed a **₹586 crore Make-II contract** with **Accurate Industrial Controls** for indigenous **Auxiliary Power Units (APUs)** for India's **T-72 and T-90 tanks**.
- **T-90** is a 3rd generation Russian **Main Battle Tank (MBT)** developed from the **T-72**, with a **three-member crew** and **automatic loading system**.
- It has a **125 mm smoothbore gun** capable of firing **anti-tank guided missiles**, along with machine guns.
- It uses **composite armour**, **Explosive Reactive Armour (ERA)**, **NBC/CBRN protection**, **night-vision and laser-warning systems**, with speeds of around **60–65 km/h** depending on the variant.
- India operates the **T-90S Bhisma**, manufactured in India under licence, with production associated with **Heavy Vehicles Factory (HVF), Avadi**.

RAKSHA Document

- The **RAKSHA Document**, released by Defence Minister **Rajnath Singh** on **3 September 2026**, is India's **10-year roadmap for defence diplomacy**, outlining its vision for **global defence partnerships and long-term security**.
- It integrates objectives of the **Ministry of Defence, Ministry of External Affairs and National Security Council Secretariat**, signalling a more **proactive global strategic role**.

- Its **four pillars** are:
 - ➔ **Strategic Partnerships:** Deeper bilateral and multilateral security cooperation.
 - ➔ **Capacity Building: Joint exercises, training and interoperability.**
 - ➔ **Indigenous Defence Exports:** Promoting **Make in India** defence platforms and exports.
 - ➔ **Maritime Security:** Strengthening India as a **Net Security Provider and First Responder in the Indian Ocean Region.**

Military Exercises

Exercises	Countries	Force	Description
KAZIND 2026	India - Kazakhstan	Army (Others incl Air Force also Participated)	The ninth edition of the Joint Military Exercise was held in Oskemen, Kazakhstan.
Tarang Shakti 2026	Multilateral	Air Force	The Exercise held at Air Force Station Jodhpur is themed "Power in Partnership". Seven Friendly Foreign Countries (FFCs) — Australia, the USA, the UAE, France, Germany, Sri Lanka and Bangladesh — are participating in the exercise hosted by India.
Varuna	India - France	Navy	The 24th edition of the exercise was held in Toulon in France.
Nomadic Elephant	India - Mongolia	Army	The 18th edition of the annual platoon-level exercise was held at the Foreign Training Node, Pithoragarh, Uttarakhand.
SLINEX - 26	India - Sri Lanka	Navy	Conceptualised in 2005, the 13th edition of the Exercise was held at Visakhapatnam.
Yudh Abhyas	India - USA	Army	The 22nd edition of the military exercise was held at Uttarakhand's Auli Foreign Training Node for high-altitude mountain drills and Rajasthan's Mahajan Field Firing Range for semi-desert mechanized maneuvers.
Veer Guardian 2026	India - Japan	Air Force	The Exercise was held at Air Force Station Jodhpur.
Super Garuda Shield 26	Multilateral	Multi-Domain	15 nations—including the U.S., Indonesia, Australia, Canada, India, Japan, New Zealand, Singapore, and South Korea—alongside 12 observer countries participated in the Exercise held at Indonesia.

Miscellaneous

Global Cities Index 2026

- **Delhi** ranked **268th** among **1,000** cities, highest among Indian cities, in the **Oxford Economics Global Cities Index (GCI) 2026**.
- **Oxford Economics** (UK based private research firm) GCI assesses **Economics, Human Capital, Quality of Life, Environment and Governance**.
- **New York** ranked 1st, followed by **London, Paris, Seattle and San Francisco**.
- Indian rankings: **Bengaluru 311th, Mumbai 330th, Chennai 381st, Hyderabad 421st, Pune 427th**.
- Delhi ranked **13th globally in Human Capital** and is projected to become the **14th-largest city economy by 2050**, exceeding **US\$2 trillion**.
- **Bengaluru** was a “**City to Watch**”; **Hyderabad and Chennai** ranked **15th and 16th** globally for forecast GDP growth.

Paraquat Dichloride

- The **Central Government** has **banned Paraquat Dichloride**, a highly toxic **non-selective herbicide**, citing risks to human and animal health.
- **Paraquat Dichloride** is widely used in agriculture and can cause severe **lung and kidney damage**; there is **no specific antidote**.
- It can persist in **soil and water** and poses risks of **accidental poisoning and intentional self-harm**.
- The ban was imposed under the **Insecticides Act, 1968**, following recommendations of an **Expert Committee** and consultation with the Registration Committee.
- It **prohibits fresh registration immediately** and cancels existing registrations issued under **Section 9** of the Act.



PRAGATI-50 Initiative

- The **Union Minister for Housing and Urban Affairs** launched **PRAGATI-50** to develop **50 model cities across 24 States/UTs** with higher standards of urban cleanliness.
- **PRAGATI-50** operates under **Swachh Bharat Mission–Urban 2.0 (SBM-U 2.0)** using **Key Performance Indicator (KPI)-based action** and technology-enabled monitoring.
- It focuses on **urban cleanliness, solid waste management, used-water management, sanitation and citizen participation**.
- The selected cities include **major, cultural, tourism, pilgrimage and economic centres**, covering **76 municipal areas**.
- Progress will be monitored through a **digital review mechanism on the Swachhatam Portal**, with **bi-monthly reviews** chaired by the Union Minister.

PM Anusuchit Jaati Abhyuday Yojana (PM-AJAY)

- The **Ministry of Social Justice and Empowerment** reported that over **₹11,186 crore** has been released under **PM-AJAY** since FY 2014–15.
- **PM-AJAY (Pradhan Mantri Anusuchit Jaati Abhyuday Yojana)**, launched in **FY 2021–22**, is a **100% centrally funded scheme** for the socio-economic and educational empowerment of **Scheduled Castes (SCs)**.
- It merged **Pradhan Mantri Adarsh Gram Yojana (PMAGY)**, **Special Central Assistance to Scheduled Castes Sub Plan (SCA to SCSP)** and **Babu Jagjivan Ram Chhatrawas Yojana (BJRCY)**.
- Its three components are **Adarsh Gram development, Grants-in-Aid for socio-economic projects, and SC student hostels**.
- Villages with **≥40% SC population** and **population ≥500** are eligible under Infrastructure Development; Grants-in-Aid prioritises beneficiaries with annual income **up to ₹2.5 lakh**.
- It aims to improve **employment, skills, infrastructure, basic services, literacy and educational enrolment** among SCs.

Nicotine Pouches

- An **Indian Council of Medical Research (ICMR) study** found nicotine pouches rapidly entering Indian urban markets through **e-commerce, delivery platforms and hookah shops**, raising regulatory concerns.
- Nicotine pouches** are small oral sachets containing **nicotine but no tobacco**, placed under the lip for absorption through the oral mucosa.
- They are **illegal and unapproved for sale in India** because the government classifies them as an unlicensed drug
- They are **addictive**, pose health risks and have **not been established as effective smoking-cessation aids**.

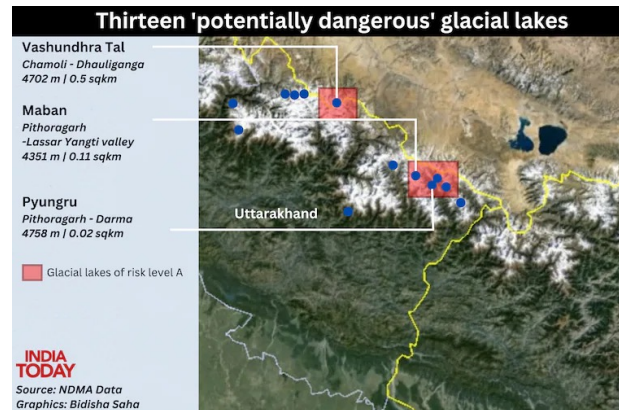
Eiffel Tower

- The **Eiffel Tower** in **Paris, France**, was temporarily closed after staff protested directives reportedly requiring female employees to swap workstations during a private visit by a **BAPS Hindu delegation**.
- Built by French engineer **Gustave Eiffel** for the **1889 Paris World's Fair**, it was completed in **March 1889**.
- The tower is made of **puddled iron**, with about **18,038 metallic parts** joined by **2.5 million rivets**.
- Eiffel Tower is part of a **UNESCO World Heritage Site**, specifically as part of the **Paris, Banks of the Seine** site inscribed in 1991.
- It also served **scientific and military purposes**, including meteorological research and **radio communications/interception** during **World War I**.



Places in News

Vasundhara Lake



- Uttarakhand** is installing its first **glacial-lake early-warning system** at **Vasundhara Tal**, Chamoli, to monitor it in real time.
- Vasundhara Tal** is a **proglacial lake** at about **4,795 m**, in the Dhauliganga River basin.
- A **proglacial lake** is a body of water that forms **directly in front of a retreating or expanding glacier**, fed by melting glacial ice and trapped by natural barriers.
- Its area expanded from **0.058 km² (1976)** to **0.17 km² (2005)**, increasing **GLOF (Glacial Lake Outburst Flood)** risk.
- The **solar-powered, satellite-linked system** will monitor **water level, flow, weather, snow, ground movement and vibrations**, generating alerts when safety thresholds are crossed.

Luxembourg



- During an official visit to India, **Luxembourg** backed **India's bid for a permanent seat on the UN Security Council (UNSC)**.
- Luxembourg** is a **landlocked country in Western Europe**, bordered by **Belgium, France and Germany**; capital: **Luxembourg City**.
- It is a **Grand Duchy** and **parliamentary constitutional monarchy**, with the **Grand Duke** as head of state.
- A **founding member of the European Union**, Luxembourg joined in **1958** and is part of the **euro area and Schengen Area**.
- It has the **highest GDP per capita in the EU** and a strong **financial-services sector**.

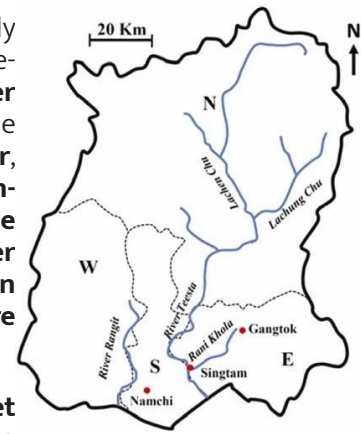
Krasheninnikov Volcano



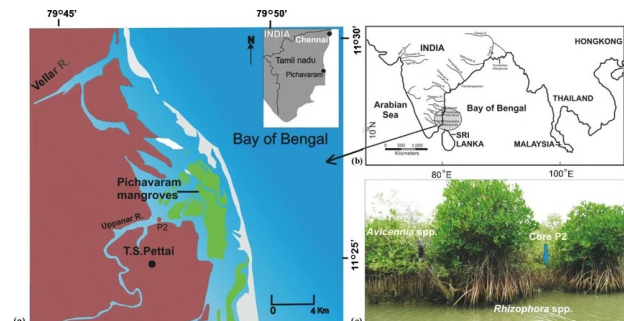
- The **NASA-ISRO NISAR satellite** captured detailed radar images of the **Krasheninnikov volcano** in Russia as lava spread across **Kamchatka**.
- Krasheninnikov** is a pair of **twin volcanoes** on the **Kamchatka Peninsula**, near **Lake Kronotskoye**.
- It lies within the **Kronotsky Nature Reserve** and the **Volcanoes of Kamchatka UNESCO World Heritage Site**.
- Kamchatka** is a volcanic peninsula extending into the **Pacific Ocean**, between **Japan and Alaska**.

Rangeet River

- Sikkim** recently hosted a three-day **river festival** on the **Rangeet River**, promoting **catch-and-release fishing, river conservation and adventure tourism**.
- The **Rangeet** originates from a **glacial lake near the Rathong Glacier** in the southern slopes of **Kabru South Peak**.
- It is the **main tributary of the Teesta River**, with a catchment of about **2,132 km²**, and joins the Teesta near **Melli** on the **Sikkim–West Bengal** border.
- The river flows for about **97.5 km** through the **Eastern Himalayas**, characterised by deep gorges and steep valleys.

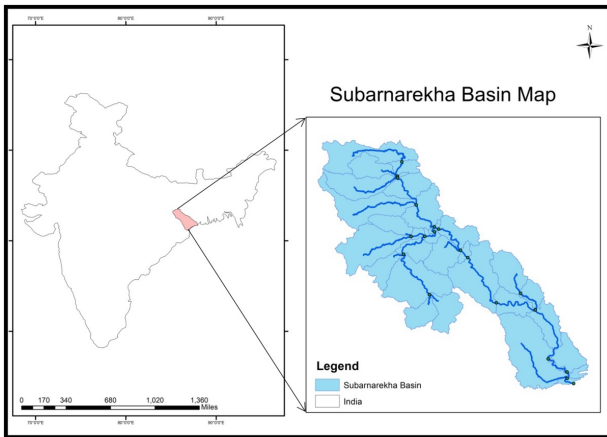


Pichavaram Mangrove Forest



- A recent study estimated the **Total Economic Value (TEV)** of the **Pichavaram mangrove ecosystem** at **₹2,485.38 crore**, or about **₹1.83 crore per hectare**.
- Spread over **1,478.64 hectares**, Pichavaram is one of India's **largest and best-preserved mangrove ecosystems**, located between the **Vellar and Coleroon estuaries** in **Cuddalore, Tamil Nadu**.
- Major ecosystem values include **tourism ₹484.25 crore**, **carbon stock ₹387.77 crore**, **oxygen regulation ₹181.22 crore**, **coastal protection ₹147.17 crore** and **soil organic carbon ₹1,224.63 crore**.
- Other benefits include **fish, crab and shrimp production, nutrient cycling, carbon sequestration and biodiversity conservation**.

Subarnarekha River



- **Subarnarekha River** recently breached its banks in Balasore, Odisha.
- The **Subarnarekha**, meaning “**Streak of Gold**”, originates in **Jharkhand** and flows through **Jharkhand, West Bengal and Odisha** before entering the **Bay of Bengal**.
- It is about **470 km long** and flows through the **Chota Nagpur Plateau** and a major **copper-mining region**.
- **Kanchi and Karkari** are its chief tributaries.

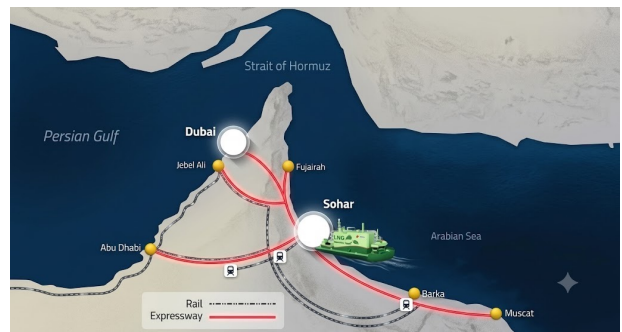
Caspian Sea



- **Iran** has shifted some **oil exports and critical cargo transit north to the Caspian Sea** amid disruption to its southern maritime routes and the Strait of Hormuz.
- The **Caspian Sea** is the **world's largest enclosed inland water body**, shared by **Iran, Russia, Azerbaijan, Kazakhstan and Turkmenistan**.

- It lies between the **Caucasus Mountains** and the **Central Asian steppes**, covering about **386,400 km²**.
- It is about **1,200 km long** and **320 km wide on average**, with around **50 islands**.
- Major rivers draining into it include the **Volga, Ural and Terek**, mainly from the north.
- The Caspian is divided into **North, Middle and South Caspian** based mainly on differences in **seafloor depth and characteristics**.

Sohar Port



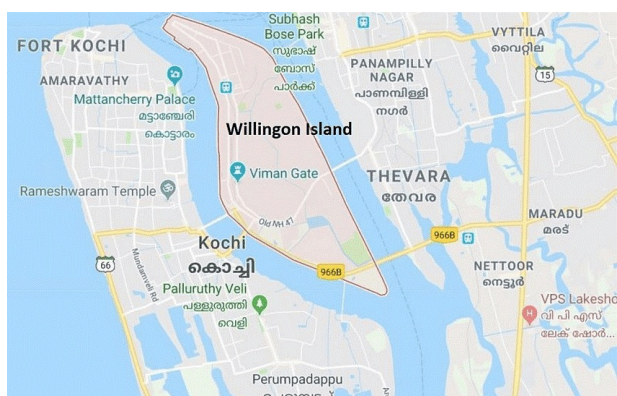
- Amid disruptions in the **Strait of Hormuz**, **Sohar Port** has emerged as a strategic alternative gateway for Indian cargo bound for **Gulf Cooperation Council (GCC)** countries.
- Sohar is on Oman's **Al-Bāṭinah coast of the Gulf of Oman**, about **190 km northwest of Muscat**.
- Along with **Fujairah in the United Arab Emirates (UAE)**, Sohar has become an important location for **ship-to-ship (STS) cargo transfers**.

Tso Kar Lake



- **Ladakh administration** launched a project to **revive Tso Kar**, whose area reportedly shrank from nearly **11,000 acres to ~3,200 acres** over the past decade, affecting **black-necked cranes**.
- **Tso Kar (Tsho Kar)** is a **fluctuating salt lake** in the **Rupshu Plateau, Changthang region of Ladakh**, about **102 km from Leh**.
- It is **India's 42nd Ramsar site**.
- **Tso Kar = "white lake"**, named after the **white salt deposits** formed by evaporation along its margins.
- It is connected by an **inlet stream** to the smaller **Startsapuk Tso**.

Willingdon Island



- **Willingdon Island, Kochi**, is being considered for **comprehensive revitalisation and diversification** to boost **Cochin Port's revenue and employment**.
- One of India's largest **man-made islands**, it was created in **1936** using soil dredged from **Vembanad Lake** during the development of the modern port.
- Named after **Lord Willingdon**, the then Viceroy of India; **Robert Bristow** played a key role in developing Cochin Port.
- Spread over about **775 acres**, it hosts the **Cochin Port, Indian Navy's Kochi Naval Base and Central Institute of Fisheries Technology (CIFT)**.
- Connected to mainland Kochi by the **Venduruthy Bridge**.



Species in News

Tokay Gecko



- Directorate of Revenue Intelligence (**DRI**) intercepted two persons in **Mariani, Assam**, and seized **86 live Tokay Geckos**.
- **Tokay Gecko (Gekko gecko)** is a **nocturnal lizard** found mainly in **South and Southeast Asia**, including India.
- It is known for its distinctive **blue/grey body with orange-red spots** and loud **"to-kay"** call.
- It is **arboreal** and feeds mainly on insects and other small animals.

Indian Peafowl



- **Orang National Park and Tiger Reserve, Assam**, recorded the **Indian peafowl (Pavo cristatus)** for the first time, adding to its biodiversity record.
- Indian peafowl belong to the **pheasant family**; males are **peacocks** and females **peahens**.
- **Peacocks** have long, colourful tail feathers, while **peahens** are mostly brown with a white belly and lack the long train.
- Native to **India and Sri Lanka**, they are among the **largest flying birds**.

Eurasian Whimbrel

- **Eurasian Whimbrel (Numenius phaeopus)** was recently spotted at **Kadalundi-Vallikkunnu Community Reserve, Kerala**.
- A **brown shorebird** with a **long, down-curved bill, head stripes and white rump**.
- Found mainly in **beaches, mudflats and coastal salt marshes**, often in flocks with other large shorebirds.
- Breeds in the **Arctic tundra** and migrates south to **Africa and Australia**.



- GAS is a major **agricultural pest**, feeding on **500+ types of crops and ornamental plants**.
- It can transmit parasites such as **rat lungworm**, posing risks to humans and animals.
- It thrives in **tropical and subtropical regions** and reproduces rapidly; a single snail can establish a population through **self-reproduction**.
- Adults are usually **3–4 inches** long but can reach **8 inches**, with characteristic **brown, cone-shaped shells**.



Caspian Cobra



- **Caspian cobra (Naja oxiana)** has been confirmed for the first time as the cause of **snakebite envenomation and human deaths in India**.
- Mainly found in **Central Asia**, with records from **Pakistan, Kashmir and Himachal Pradesh**; it was recorded in **Chamba in 2019**.
- Its range has expanded **northeastward from Iran**, with reports of expansion to lower elevations in Chamba.
- **Snakebite envenoming (SBE)** is a major preventable cause of rural mortality in India.
- India's **Big Four: spectacled cobra, Russell's viper, common krait and saw-scaled viper** account for most snakebite deaths; standard **anti-snake venom (ASV)** primarily targets these four.

Giant African Snail (GAS)

- **Kerala Agricultural University (KAU)** launched a project to eradicate the **Giant African Snail (GAS), Lissachatina fulica**, following a request from the Agriculture Department.

Himalayan Monal

- A study in **Uttarakhand** found that roads, tourism and pilgrimage traffic are causing **Himalayan monals to use higher-frequency calls**, altering their calling behaviour.



- **Himalayan Monal (Lophophorus impejanus)** is a **pheasant native to Himalayan forests**.
- The male has striking **green, blue and copper plumage**.

Badri Cattle



- A **Badri female calf**, an indigenous breed of Uttarakhand, has been born using **Ovum Pick-Up and In Vitro Fertilization (OPU-IVF)**.

technology.

- Badri, also called “**Pahadi**”, is a **dual-purpose breed** adapted to the **hilly terrain and climate of Uttarakhand**.
- Usually **black, brown or grey**, with upward- and inward-curved horns; small, active and **sure-footed**.
- Reared for **bullock power, milk and manure** under semi-intensive management.
- Average milk yield is about **632 kg per lactation**, with around **4% milk fat**.

Przewalski's Horse



- Two **Przewalski's horse** (*Equus ferus przewalskii*) foals, **Botai and Tumar**, were born at a reintroduction centre in **central Kazakhstan**, the first such births there in over **200 years**.
- Known locally as **kertagy**, it is the **only surviving wild horse** and the closest living wild relative of the domestic horse.
- Once **Extinct in the Wild**, it was reintroduced and is now classified as **Endangered (IUCN)**.
- Historically, it ranged across the **steppes of Kazakhstan, Mongolia, Russia and northern China**.
- Acts as an **ecosystem engineer** by grazing vegetation, disturbing soil with its hooves and **dispersing seeds**, helping maintain grassland ecosystems.

Striped Hyena

- **Striped hyena** (*Hyaena hyaena*) is found mainly in **dry and semi-arid landscapes** of India.
- An estimated **5,000–14,000 striped hyenas** exist globally, including around **1,000–3,000 in India**.

- It is largely **nocturnal**, weighs about **25–45 kg**, and is known for its distinctive **laugh-like call**, **unique gait and ability to digest bones**.



- Its key ecological role is **scavenging**: by consuming carcasses and animal remains, it removes dead organic matter and helps maintain ecosystem health.
- It belongs to the **Hyaenidae** family under the order **Carnivora**, and is more closely related to **cats (feliforms)** than dogs.
- The four living hyena species are: **Striped hyena** (Africa, Middle East, Central Asia and India), **Spotted hyena** (sub-Saharan Africa), **Brown hyena** (southern Africa), and **Aardwolf** (eastern and southern Africa).
- The **aardwolf** is distinctive because it mainly feeds on **termites**.

Orangutan

- **Odisha Police and Wildlife Crime Control Bureau (WCCB)** investigated after **five juvenile orangutans** were rescued from Balasore.



- Orangutans are **great apes** and the **largest arboreal mammals**, naturally found only in **Borneo and Sumatra**.
- Three species: **Bornean, Sumatran and Tapanuli**; Tapanuli was recognised in **2017** and has the smallest population.
- Mostly **solitary**, fruit-eating **seed dispersers** that build nests in trees.

Keywords

- **Totaliser:** It is a proposed **hardware mechanism for Electronic Voting Machines (EVMs)** to prevent disclosure of booth-wise voting patterns and help ensure voter secrecy. It **combines votes from around 14 polling booths**, giving a consolidated result instead of booth-wise results. It is developed by **Bharat Electronics Limited (BEL) and Electronics Corporation of India Limited (ECIL)** but not yet implemented.
- **Superalignment:** It is an **AI-safety approach** that aims to ensure highly advanced AI systems **follow human goals and values**. It focuses on keeping **superhuman AI systems safe and under human control**. The challenge is that humans may not be able to **understand or control** AI that becomes more intelligent than humans.
- **Reverse Vaccinology:** It is a **vaccine-development method** that uses the **genetic information of a pathogen** to find parts that can be targeted by a vaccine. It avoids the need to **grow the pathogen in a laboratory first**. It can help develop vaccines that work against **multiple strains** of a pathogen, such as those causing **pneumonia and meningitis**.
- **Agentic AI:** It refers to AI systems that can **reason, plan and execute complex tasks** with limited human supervision. Unlike conventional AI, which mainly responds to instructions, agentic AI can **make decisions, use tools and take multiple actions** to achieve a given goal.
- **Thismia daemona “Devil Flower”:** A new dark, horn-like **flowering plant discovered in western Thailand**, has **no leaves, branches or chlorophyll** and therefore cannot perform photosynthesis. It is **mycoheterotrophic**, obtaining nutrients/carbon through underground fungi, and remains mostly hidden under leaf litter except when flowering. **With fewer than 50 known individuals**, it is provisionally assessed as Critically Endangered.
- **Table Top Exercise (TTX):** It is a **discussion-based simulation** where participants **sit around a table to talk through hypothetical emergency scenarios**, strategies, and response plans instead of deploying actual physical assets, troops, or equipment in the field. A TTX was conducted under the aegis of the **Colombo Security Conclave (CSC)** at Eastern Naval Command (ENC), Visakhapatnam..
- **Market Infrastructure Institutions (MIIs):** They are core financial institutions that provide the infrastructure for the smooth functioning of India’s **securities markets** and are regulated by **SEBI**. The three main types are **Stock Exchanges** (NSE, BSE, MCX), **Clearing Corporations** that clear and settle trades, and **Depositories** (NSDL, CSDL) that hold securities electronically.
- **Anti Dumping Duty (ADD):** It is an **extra tariff charged on imported goods** when foreign companies sell them below the price at the exporting **country’s domestic market**, which hurts local manufacturing. It is governed by **Section 9A of the Customs Tariff Act, 1975** and is imposed by the **Central Government (Department of Revenue)** based on the recommendations of the **Directorate General of Trade Remedies (DGTR)**. India recently extended the ADD on **Decor Paper** imports from China.
- **Soil Carbon Payments:** They are **financial incentives to farmers** for adopting practices that **increase soil carbon storage** and reduce greenhouse-gas emissions. Farmers adopt **regenerative practices**, the resulting **increase in soil carbon is measured and verified**, and they receive payments based on the verified carbon benefits. Farmers in **Punjab and Haryana** received India’s first farm-level soil carbon payments from **Grow Indigo**, a private agricultural technology/climate company with **ICAR technical support**.
- **Steel Slag Road:** A **steel slag road** uses processed **steel slag**, a by-product of steel production, instead of natural stone aggregates in road construction. It was developed by **CSIR-Central Road Research Institute (CSIR-CRRI)** with Indian steel producers helping utilise India’s large quantity of steel waste. India’s first steel slag road was built in **Surat in 2022**, followed by a section on **NH-66 in 2024**; a 1.85-km stretch in **Raigarh, Chhattisgarh** holds the Guinness World Record for the longest such road.

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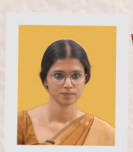
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