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For UPSC | IAS | IPS & State Civil Services Aspirants





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South Asia Wildlife Enforcement Network









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BURNING NEWS

PM Modi Tells Putin: India Backs Every Effort to End War in Ukraine



Why in News?

Prime Minister **Narendra Modi** held talks with Russian President **Vladimir Putin** on **31st August 2026** on the sidelines of the **26th Shanghai Cooperation Organisation (SCO) Summit** in **Bishkek, Kyrgyzstan**.

- The discussions covered major areas of **India-Russia bilateral cooperation**, including:
  - Trade and investment
  - Energy
  - Defence
- PM Modi reiterated India's support for **every effort aimed at ending the war in Ukraine**.
- He stressed that **every day of war sets humanity back** and called for efforts to end hostilities.
- The meeting took place **more than a week before President Putin's scheduled visit to India** for the annual **BRICS Summit**.
- Ahead of the meeting, officials indicated that traditional areas of India-Russia engagement would remain central to the discussions.

What Did PM Modi Say on the Ukraine War?

India reiterated its support for diplomatic efforts to end the conflict.

- PM Modi said that **India backs every effort to bring the war in Ukraine to an end**.
- He emphasised the humanitarian and global consequences of prolonged conflict.
- His message was that:
  - War causes setbacks for humanity.
  - Hostilities should be brought to an end.
  - Efforts towards **peace and stability** should continue.

What Were the Main Areas of India-Russia Talks?

The discussions focused on strengthening bilateral relations in several important sectors.

Trade and Investment

- Both sides discussed cooperation in **trade and investment**.
- Greater economic engagement remains an important component of India-Russia relations.

Energy

- **Energy cooperation** was another key area discussed.
- Energy remains an important traditional area of bilateral engagement.

Defence

- **Defence cooperation** was also discussed.
- Defence has traditionally been one of the major pillars of the India-Russia strategic partnership.

PM Modi's Visit to Kyrgyzstan

Prime Minister Narendra Modi arrived in **Bishkek, Kyrgyzstan**, for a **two-day visit**.

- He was received at the airport by **Kasymaliev Adylbek Aleshovich, Chairman of the Cabinet of Ministers**.
- A traditional **Kyrgyz dance performance** was organised to welcome him.
- PM Modi is visiting Kyrgyzstan at the invitation of **President Sadyr Zhaparov**.
- The main purpose of the visit is participation in the **26th SCO Summit**.

What Programmes Did PM Modi Attend in Bishkek?

- During the first day of his visit, PM Modi was scheduled to participate in several programmes and bilateral meetings.

Interaction with Friends of India

- PM Modi was scheduled to interact with the **Friends of India in Bishkek**.
- Such interactions highlight India's efforts to strengthen people-to-people and cultural connections.

Mahatma Gandhi Memorial Park

- PM Modi was scheduled to visit the **Mahatma Gandhi Memorial Park**.
- He would pay floral tributes at the **statue of Mahatma Gandhi**.
- The statue was unveiled by PM Modi during his **2015 visit to Kyrgyzstan**.

Bilateral Meetings

- PM Modi was scheduled to hold bilateral meetings with several leaders of SCO member countries.
- These included meetings with the Presidents of:
    - **Armenia**
    - **Kyrgyzstan**
    - **Iran**
    - **Russia**
- The meeting with President Putin was particularly important because of the broad scope of **India-Russia strategic cooperation**.

6th World Nomad Games

PM Modi was also scheduled to attend the **opening ceremony of the 6th World Nomad Games**.

- The event celebrates the **rich and vibrant cultural heritage of Central Asia**.
- India's participation also provides an opportunity to strengthen its **cultural and civilisational connections** with the Central Asian region.

India's Vision for Central Asia

In his departure statement, PM Modi said India would work towards advancing its vision for the region based on:

- **Security**
- **Connectivity**
- **Opportunity**

India also aims to work with SCO members towards creating a region free from:

- **Terrorism**
- **Separatism**
- **Extremism**

Why is Central Asia Important for India?

PM Modi's visit is aimed at strengthening India's engagement with Central Asia.

The visit is expected to:

- Strengthen India's **strategic partnerships** in Central Asia.
- Deepen India's **civilisational connect** with the region.
- Promote the shared objectives of:
    - Peace
    - Stability
    - Prosperity
- Improve cooperation on regional security and cross-border challenges.

Significance of the Modi-Putin Meeting

The meeting is important because **India-Russia relations extend across several strategic sectors**.

Strategic Cooperation

The two countries continue to cooperate in:

- Defence
- Energy
- Trade
- Investment

Peace Diplomacy

India's position on the Ukraine conflict reflects its emphasis on:

- Dialogue
- Peace
- Ending hostilities
- International stability

Upcoming Putin Visit to India

- The meeting also comes shortly before **President Vladimir Putin's visit to India** for the annual **BRICS Summit**.
- This provides an opportunity for both countries to further discuss their bilateral relationship and broader international issues.

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India–Denmark Cooperation in MSME and Intellectual Property



Why in News?

- **India and Denmark** recently held discussions to strengthen bilateral cooperation in the **Micro, Small and Medium Enterprises (MSME)** sector.
- The discussions also focused on cooperation in **Intellectual Property (IP)**.
- The engagement aims to promote greater collaboration in areas such as **innovation, entrepreneurship and technology**.

About Denmark

- **Location: North-central Europe**
- Denmark is one of the **Scandinavian countries**.
- It also includes:
  - **Faroe Islands**
  - **Greenland**
- Both are located in the **North Atlantic Ocean**.
- **Land border:** Germany to the **south**.
- **Capital: Copenhagen**

Water Bodies

- Denmark is surrounded by several important water bodies, including:
  - **North Sea**
  - **Baltic Sea**
  - **Kattegat**
  - **Kiel Bay**

Geographical Features of Denmark

Topography

- Most of Denmark consists of **low-lying and relatively flat terrain**.
- The main hilly region is found in the **central part of the Jutland Peninsula**.
- Denmark comprises:
  - **Jutland Peninsula**
  - An archipelago of **more than 443 islands**
- Its coastline is highly **indented**, with numerous fjords.
- **Limfjord**, located in northern Denmark, is the country's largest fjord.

Climate

- Denmark has a **temperate maritime climate**.
- The **Gulf Stream** helps moderate temperatures.
- As a result, Denmark generally experiences a **milder climate** than several other Scandinavian countries.

Major Rivers

- **Guden River** – longest river in Denmark
- **Odense River**
- **Skjern River**

Natural Resources

- **Petroleum**
- **Natural gas**
- **Fish**
- **Salt**
- **Limestone**
- **Chalk stone**

Russia Warns Japan Over U.S. Typhon Missile System



Why in News?

- **Russia** recently warned **Japan** against the deployment of **U.S. Typhon missile systems**.
- Russia described the deployment as **unacceptable** and a potential threat to its **security**.

About Typhon Missile System

- **Typhon**, also known as the **Mid-Range Capability (MRC)**, is a **surface-to-surface missile system**.
- It is manufactured by the U.S. defence company **Lockheed Martin**.
- The system has a **modular design**, allowing it to launch different types of missiles.
- It can fire:
    - **SM-6 missiles**
    - **Tomahawk cruise missiles**

Missile Range

- **SM-6:** Has an engagement range of **more than 320 km**.
- **Tomahawk:** Provides deep-strike capability of up to around **1,500 km**.

Key Features

- **Containerised:** Designed for easy transportation and deployment.
- **Road-mobile:** Can be moved by road to different locations.
- **Highly survivable:** Designed to operate in contested environments.
- It allows U.S. forces to **disperse precision-strike capabilities** across allied territories.
- The system can engage both **land and maritime targets**.

Operational Capabilities

- Typhon has a **dual-use strike capability**:
    - **Sea denial:** Helps target maritime threats.
    - **Precision land attacks:** Enables strikes against land-based targets.
- This makes the system useful in environments where both **land and maritime threats** need to be addressed.

Typhon Battery

- Each Typhon battery consists of:
    - **4 trailer-mounted launchers**
    - **4 vertical launch cells per launcher**
    - **16 missiles in total per battery**
- The system also includes:
    - **Mobile command post**
    - **Generator vehicles**
- These supporting vehicles provide power for the system's **sensors and communication equipment**.

India Gifts Special Sandalwood to Nepal for Pashupatinath Temple



Why in News?

- India recently gifted a **special variety of sandalwood** to the **Government of Nepal**.
- The sandalwood will be used at the **Pashupatinath Temple** in Kathmandu.
- The gesture highlights the long-standing **cultural and religious ties between India and Nepal**.

About Pashupatinath Temple

- **Location:** On the banks of the **Bagmati River**, on the eastern outskirts of **Kathmandu, Nepal**.
- **Deity:** Dedicated to **Lord Shiva**, worshipped here as **Pashupati**, the protector of animals.
- A religious centre has existed at the site since at least the **5th century BCE**.
- The oldest recorded temple at the site dates back to around **400 CE**.
- The earlier structures were mainly made of **wood**.
- These structures were gradually replaced by the present **stone and metal structures** during the **15th century CE**.
- The temple was declared a **UNESCO World Heritage Site in 1979**.

Architectural Features

- The main temple follows the **Nepalese pagoda style**.
- It has a distinctive **tiered roof and raised plinth**.
- The main structure is **cubic in shape**.

- It has **four main doors**, each covered with **silver sheets**.
- The temple has a **two-tiered copper roof**, covered with **gold**.
- There are **two inner chambers** where the Pashupatinath idol is housed.

Important Feature

- One of the prominent attractions is the large **golden statue of Nandi**, the sacred bull associated with **Lord Shiva**.

IAF Conducts Drop Trial of Khagantak-243 Glide Bomb



Why in News?

- The **Indian Air Force (IAF)** recently successfully conducted a **drop trial** of the indigenously designed and developed **Long Range Glide Bomb (LRGB)**, **Khagantak-243**.
- The trial highlights India's efforts to strengthen its **indigenous precision-strike capabilities**.

About Khagantak-243

- **Type:** Long-range, stand-off **precision-guided glide bomb**
- **Weight class: 300 kg**
- **Developed by: Bharat Electronics Limited (BEL)** and **JSR Dynamics**
- It is designed to be **launched from a fighter aircraft**.
- After release, the bomb uses its aerodynamic design to **glide towards the designated target**.

Key Features

- **Stand-off capability:** Allows aircraft to attack targets without flying directly over them.
- **Range:** Around **144–180 km**.
- The stated range is achieved when the bomb is released:
  - From an altitude of around **12 km**
  - At approximately **Mach 0.8**
- **Design features:**
  - **Cylindrical body**
  - **Swivel-type mid-body glide wings**
  - **Five rear control surfaces**
- These control surfaces help the weapon **navigate and guide itself towards the target**.

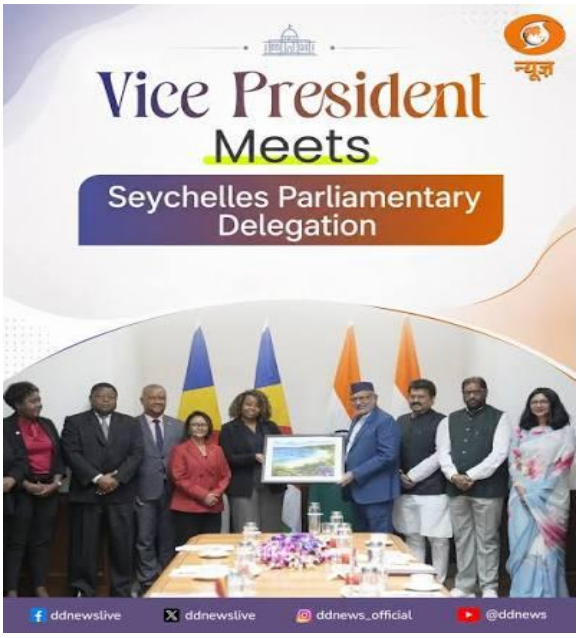
Glide Bomb vs Conventional Bomb

- **Conventional free-fall bomb:** Falls mainly under gravity after being released from an aircraft.
- **Glide bomb:** Uses **wings and control surfaces** to travel towards a target after release.
- This allows the launching aircraft to maintain a **greater distance from the target area**.

Significance

- Long-range glide bombs provide aircraft with an enhanced **stand-off strike capability**.
- They allow combat aircraft to engage targets while remaining outside the range of **certain enemy air-defence systems**.
- The development of **Khagantak-243** strengthens India's capability to develop and deploy **indigenous precision-guided air-launched weapons**.

Vice President Meets Parliamentary Delegation from Seychelles



Why in News?

- The **Vice President of India** recently met a **parliamentary delegation from the Republic of Seychelles** at **Parliament House, New Delhi**.

About Seychelles

- **Seychelles** is an **archipelagic island country** in the **western Indian Ocean**.
- It is located:
  - **Northeast of Madagascar**
  - **East of mainland Africa**
- **Comoros and Mauritius** are located to its south, while the **Maldives** lie to its east.
- The country consists of an **archipelago of 115 islands**.
- Only around **8 islands are permanently inhabited**.
- **Capital:** Victoria

Geographical Features

- **Climate:** Tropical oceanic climate with **limited temperature variation** throughout the year.
- Seychelles consists mainly of **two island groups**:
  - **Mahé Group:** Mountainous **granitic islands**
  - **Coralline Islands:** Mainly flat coral atolls and elevated reefs

Mahé Group

- The Mahé group has a **volcanic origin**.
- It has:
  - A **narrow coastal strip**
  - **Rocky and hilly interior**
- The islands are part of the **Mascarene Plateau**.
- The other islands are comparatively **flat coral formations**.

Highest Point

- **Morne Seychellois** is the **highest point in Seychelles**.

India and Poland Strengthen Cooperation in Key Sectors



Why in News?

- **India and Poland** are working on a series of agreements in areas such as:
  - **Cyber security**
  - **Space**
  - **Clean coal**

About Poland

- **Poland** is a **Central European country**.
- It shares land borders with **7 countries**:
  - **Germany** – West
  - **Czech Republic** – Southwest
  - **Slovakia** – South
  - **Ukraine** – Southeast
  - **Belarus** – East
  - **Lithuania** – Northeast
  - **Russia** – Northeast
- It is bordered by the **Baltic Sea** in the north.
- Poland is a member of:
  - **NATO (North Atlantic Treaty Organization)**
  - **European Union (EU)**

- **Capital:** Warsaw

Geographical Features

Climate

- Poland has a mainly **continental climate**.
- Its climate is moderated by **westerly winds**.

Mountain Ranges

- Major mountain ranges include:
  - **Sudetes**
  - **Tatra Mountains**
- The Tatra Mountains form the **highest part of the Carpathian Mountains**.

Highest Point

- **Mount Rysy**
- Elevation: **2,499 metres**

Major Rivers

- **Vistula**
- **Warta**
- **Oder**

Natural Resources

- **Coal**
- **Natural gas**
- **Copper**
- **Rhenium**
- **Sulfur**
- **Salt**

Eastern Economic Forum

About Eastern Economic Forum

- The **Eastern Economic Forum (EEF)** is an annual international forum established by **Russian President Vladimir Putin in 2015**.
- It is held every year in **Vladivostok, Russia**.
- The forum focuses on:
  - Promoting the **economic development of Russia's Far East**
  - Expanding **international cooperation in the Asia-Pacific region**
- It serves as an important platform for building links between **Russian and global investment communities**.
- It brings together:
  - **Government representatives**
  - **Businesses**
  - **Investors**
  - **Experts**
- Discussions mainly focus on **economic cooperation and investment opportunities**.
- The forum attracts participation from countries including **China, India, Malaysia, Mongolia and Myanmar**.

Key Facts about Russian Far East

- It is the **easternmost part of Russia**.
- The region is generally **cold, sparsely populated and geographically remote**.
- It borders:
  - **Pacific Ocean**
  - **Arctic Ocean**
- It shares borders with **China, Japan, Mongolia, the United States and North Korea (DPRK)**.
- The region extends across **four time zones**.
- It contains diverse climatic conditions, ranging from **northern desert areas to subtropical regions**.

Natural Resources

- The Russian Far East is rich in natural resources, including:
  - **Gold**
  - **Diamonds**
  - **Oil**
  - **Natural gas**
  - **Coal**
- Around **one-third of Russia's coal reserves and hydro-engineering resources** are located in this region.

India-Luxembourg Discuss Cooperation in Emerging Technologies



India and **Luxembourg** recently discussed expanding bilateral cooperation in **space** and exploring new areas such as **artificial intelligence, quantum technologies, advanced materials and life sciences**. The discussions reflect growing cooperation between India and European countries in emerging and high-technology sectors.

Why in News?

India and Luxembourg held discussions on expanding cooperation in **space** and developing partnerships in emerging technologies.

- **Luxembourg** is a small **landlocked country in Western Europe**.
- It shares borders with **Belgium, Germany and France**.
- **Capital:** Luxembourg.
- It is a **founding member of the European Union and NATO**.
- Major rivers include **Alzette, Eisch, Moselle, Our and Sûre**.
- **Highest point:** Burgplatz, about **559 m**.
- It has a **continental climate**, with cold winters and relatively mild to warm summers.
- Important natural resources include **minerals and forests**.

India–MERCOSUR Preferential Trade Agreement

Why in News?

India and MERCOSUR recently signed the **First Additional Protocol** to their Preferential Trade Agreement (PTA). The protocol will enable the acceptance of **electronic Certificates of Origin**, making trade documentation faster and more efficient.

About MERCOSUR

- **MERCOSUR** stands for **Southern Common Market**. It is a **South American regional economic organisation**.
- It was established in **1991** through the **Treaty of Asunción**.
- It aims to promote the **free movement of goods, services, capital and people** among member countries.
- It became a **customs union in January 1995**.
- **Headquarters:** Montevideo, Uruguay.
- **Official working languages: Spanish and Portuguese**.

Members

- **Founding members:** Argentina, Brazil, Paraguay and Uruguay.
- **Bolivia** later joined as a member.
- **Venezuela** joined later but has been **suspended since 2016**.
- **Associate members:** Chile, Colombia, Ecuador, Guyana, Peru and Suriname.

Governance

- **Common Market Council (CMC):**
  - It is the **highest decision-making body** of MERCOSUR.
  - It coordinates major **foreign and economic policies**.

- It consists mainly of the **foreign and economic ministers** of member states.
- Decisions are taken by **consensus**.
- The presidency **rotates every six months** among full members.

India–MERCOSUR Trade Relations

- **India–MERCOSUR PTA:** Signed on **25 January 2004**.
- **Came into force: 1 June 2009**.
- The agreement provides **preferential tariff concessions** on:
  - **450 tariff lines** by India.
  - **452 tariff lines** by MERCOSUR.
- The new protocol supports the use of **electronic Certificates of Origin**, helping simplify and modernise trade procedures.

Alternatives to the SWIFT System



Why in News?

Growing **geopolitical tensions and economic sanctions** have encouraged countries to explore alternatives to the **SWIFT network**.

- Groups such as **BRICS** are examining cross-border payment arrangements based on **local currencies, Central Bank Digital Currencies (CBDCs)** and platforms such as **mBridge** and **Project Nexus**.

What is the SWIFT System?

- **SWIFT (Society for Worldwide Interbank Financial Telecommunication)** is a secure global **financial messaging network** used by banks and other financial institutions for international transactions.
- It **does not directly transfer or settle money**. Instead, it sends standardised payment instructions between financial institutions.
- **Establishment:** SWIFT was established in **1973** and is headquartered in **Brussels, Belgium**.
- **Governance:** It is overseen by the central banks of the **G10 countries**, along with the **European Central Bank** and the **National Bank of Belgium**.
- **Global Reach:** More than **11,000 financial institutions** use the SWIFT network across the world.
- It supports transactions in major currencies including the **US dollar, euro, pound sterling, yen and Indian rupee**.
- **SWIFT/BIC Codes:** Financial institutions are identified using **8-character or 11-character alphanumeric codes**.

Impact of Sanctions

- Removing a country's banks from SWIFT can severely restrict their ability to:
  - Conduct **international financial transactions**.
  - Receive **export payments**.
  - Access **short-term international credit**.
- The exclusion can also affect financial networks connected to international transactions and create wider economic effects, including disruptions to **energy supplies and commodity markets**.

Major Alternatives to SWIFT

1. National Interbank Payment Systems

India – UPI

- **Unified Payments Interface (UPI)** is India's real-time **instant payment system**.
- It is increasingly being connected with foreign payment networks through **bilateral arrangements**, enabling cross-border digital payments.
- According to an **IMF report released in June 2025**, UPI accounted for around **49% of global real-time payment transaction volume in 2024**.
- By **2026**, UPI had been enabled in **11 foreign countries** for merchant payments and cross-border remittances.
- Its international presence includes countries such as **Singapore, UAE, France, Bhutan, Nepal, Sri Lanka, Mauritius, Qatar, Cambodia, Greece and Maldives**.

- India is also working to expand UPI interoperability with other countries and facilitate payments for **Non-Resident Indians (NRIs)**.

China – CIPS

- **Cross-Border Interbank Payment System (CIPS)** was launched in **2015** with support from the **People's Bank of China**.
- It facilitates **cross-border clearing and settlement of transactions in yuan**.
- It allows participating banks to access China's onshore clearing infrastructure instead of relying entirely on offshore clearing centres.
- The system has participants across **more than 120 countries**.

Russia – SPFS

- **System for Transfer of Financial Messages (SPFS)** was developed by the **Bank of Russia in 2014**.
- It was designed as an alternative financial messaging channel in response to Western sanctions.
- It became particularly important after Russian banks were disconnected from **SWIFT in 2022**.

Iran – SEPAM

- **SEPAM** is Iran's domestic interbank financial messaging system.
- In **2023**, Iran's Central Bank connected SEPAM with Russia's **SPFS**, allowing Iranian and foreign banks to communicate through the linked systems.

2. Multilateral and Blockchain-Based Platforms

Project mBridge

- **mBridge** is a cross-border **multi-CBDC platform** based on **Distributed Ledger Technology (DLT)**.
- It was launched in **2021** to facilitate direct cross-border payments and foreign-exchange transactions using multiple central bank digital currencies.
- The initial participants included the central banks of **China, Thailand, UAE and Hong Kong**, with the **Saudi Central Bank** joining in 2024.
- The **RBI** is among its observing members.
- The platform achieved **minimum viability in 2024**, allowing direct multi-currency wholesale transactions.
- The **BIS exited the initiative in 2024** amid concerns regarding its possible use for bypassing unilateral sanctions.
- By late 2025, the platform primarily operated as a **renminbi-based settlement channel** for energy and commodity trade between China and Gulf countries.

Project Nexus

- Developed by the **BIS Innovation Hub**, Project Nexus seeks to connect domestic **Fast Payment Systems (FPSs)**.
- Its aim is to enable **instant cross-border retail payments**.
- **India, Malaysia, the Philippines, Singapore and Thailand** are the founding participants.
- It builds on India's **UPI** and existing bilateral payment connections to create a **multilateral cross-border payment network**.

BRICS Pay

- **BRICS Pay** was proposed by the **BRICS Business Council in 2018**.
- It seeks to create a **decentralised digital payment ecosystem** for transactions among BRICS countries.
- It is intended to work alongside existing systems and provide an alternative to Western payment networks such as **SWIFT, Visa and Mastercard**.
- The emerging approach focuses on connecting **national payment systems, local currencies and CBDCs** rather than creating a single replacement for SWIFT.
- Possible interoperability could involve systems such as **India's UPI and Brazil's Pix**, along with greater use of national currencies for settlement.

Stablecoin Settlements

- **Stablecoins** are digital tokens whose value is linked to fiat currencies such as the **US dollar**.
- Examples include **USDC and USDT**.
- They can be used for cross-border transfers through **public blockchains**, allowing transactions to take place quickly and continuously.

- Their **24/7 availability, low transaction costs and borderless nature** have increased their use in areas such as **international business payments and payroll**.

UNSC Veto Power and Its Reform



Why in News?

At the **81st Session of the United Nations General Assembly (UNGA) in September 2026**, member states discussed reforms to the **UN Security Council (UNSC) veto**, especially its use during major humanitarian crises.

- **Russia reaffirmed its support for India's permanent membership of the UNSC**.
- India reiterated its commitment to the **Pact for the Future**, adopted at the **2024 UN Summit**.
- India also called for **urgent and time-bound reforms** of the UNSC.

What is the Veto Power of the UNSC?

- The term **"veto"** is not directly mentioned in the UN Charter. Its legal basis comes from **Article 27(3)**.
- Decisions on **non-procedural matters** require at least **nine affirmative votes**, including the agreement of all five permanent members.
- The **Permanent Five (P5)** are:
    - **China**
    - **France**
    - **Russia**
    - **United Kingdom**
    - **United States**
- The UNSC also has **10 non-permanent members**, elected by the UNGA for **two-year terms**.
- A negative vote by any P5 member can block a **substantive resolution**, even when it has broad international support.
- However, an **abstention or absence** of a P5 member does not amount to a veto.

Arguments for Abolishing the Veto

1. Undemocratic Structure

- The veto gives five countries a special position within the UNSC.
- Critics argue that this conflicts with the UN principle of **sovereign equality of all member states**.

2. Institutional Paralysis

- Repeated vetoes can prevent the UNSC from taking action during major international crises.
- During the **Syrian Civil War**, Russia, often along with China, vetoed more than **15 draft resolutions between 2011 and 2023**.
- Even the threat of a veto can prevent a proposal from being formally introduced, creating a **"pocket veto" effect**.

3. Accountability Concerns

- The veto can protect P5 countries or their strategic partners from international action.
- The US has repeatedly vetoed resolutions critical of **Israel's actions in Gaza**, while Russia has used its veto against resolutions concerning **Ukraine**.
- Between **1945 and 2025**, the UNSC veto was used **320 times** on 264 draft resolutions or amendments.
- The **Soviet Union/Russia accounted for 155 vetoes**, followed by the **US with 94**.

4. Outdated Representation

- The present P5 structure reflects the global power balance of **1945**.
- Major regions such as **Africa and Latin America** do not have permanent representation.
- Countries such as **India, Brazil, Germany and Japan**, collectively known as the **G4**, also seek greater representation.
- France has argued that veto power should come with a **greater responsibility to act during mass atrocities**.

Arguments Against Abolishing the Veto

1. Preventing a Repeat of the League of Nations

- The **League of Nations** relied heavily on unanimity and eventually failed when major powers withdrew or refused to accept decisions against their interests.

- Supporters therefore view the veto as a **"safety valve"** that keeps major powers within the UN system.

2. Difficulty of Amending the UN Charter

- **Article 108** requires amendments to the UN Charter to be ratified by **two-thirds of the UNGA as well as all five permanent members**.
- This makes complete abolition of the veto extremely difficult because the P5 themselves must approve such a fundamental change.

3. Risk of Greater Deadlock

- The **Uniting for Consensus group**, also known as the **Coffee Club**, argues against expanding permanent membership with veto powers.
- According to this view, adding more veto-holders could increase the number of actors capable of blocking UNSC action and lead to greater **institutional gridlock**.

Major Initiatives for Veto Reform

French-Mexican Initiative

- Launched by **France and Mexico in 2015**.
- Calls on P5 countries to voluntarily avoid using their veto in situations involving **genocide, crimes against humanity and large-scale war crimes**.
- It has the support of **128 UN member states**, including **France and the UK**.

Liechtenstein Initiative

- Based on **UNGA Resolution 76/262 (2022)**.
- Requires the **UN General Assembly to meet within 10 working days** after a veto is used in the UNSC.
- It increases **transparency and political accountability** by requiring the vetoing country to explain its position.

ACT Code of Conduct

- Developed by the **Accountability, Coherence and Transparency (ACT) Group**.
- Calls on UNSC members to avoid voting against credible resolutions aimed at **preventing or stopping mass atrocity crimes**.

India's Position on UNSC Veto Reform

- India supports **comprehensive UNSC reform** and opposes a system in which new permanent members have fewer powers than existing permanent members.
- India argues that **if the veto continues, it should also be available to new permanent members**.
- India has also pointed out that even non-permanent members can exercise an **informal "effective veto"** by blocking certain decisions, such as press statements and sanctions committee decisions.

G4 Proposal

- India, along with **Brazil, Germany and Japan**, has proposed a **15-year moratorium on the use of veto by new permanent members**.
- Under this arrangement, new permanent members would have the same responsibilities as existing permanent members but would voluntarily **not exercise the veto for 15 years**.
- The arrangement would then be **reviewed by the UN General Assembly**.

Global South and African Representation

- India supports greater representation of the **Global South and Africa** in the UNSC.
- Under the **Ezulwini Consensus**, India supports the African Union's demand for **permanent African representation with veto rights**, as long as the veto continues to exist.
- India also works through the **L.69 Group** of developing countries to build support for UNSC reform.
- India coordinates with the **G4 and L.69** to strengthen the developing-country position on reform.

India and Reformed Multilateralism

- India links UNSC reform with the broader objective of making global institutions **more representative, inclusive and reflective of current geopolitical realities**.
- India is also seeking a **non-permanent UNSC seat for 2028–29**, using its participation to further its case for **permanent membership**.

India–Italy Tourism Cooperation



Why in News?

The **2nd India–Italy Joint Working Group (JWG) on Tourism** was recently held. Both countries agreed to **strengthen bilateral cooperation in tourism**.

Italy

- **Location:** Italy is located in **South-Central Europe** on the **Apennine Peninsula**.
- **Capital: Rome**.
- **Land Borders:**
  - **Switzerland and Austria** in the north
  - **Slovenia** in the northeast
  - **France** in the northwest
- **Enclaved Countries: Vatican City** and **San Marino** are two independent states located within Italy.
- **Maritime Boundaries:**
  - **Adriatic Sea** – east
  - **Sea of Sicily** – south
  - **Ionian Sea** – southeast
  - **Ligurian Sea** and **Tyrrhenian Sea** – southwest

Geographical Features

- **Climate:** Coastal areas mainly have a **Mediterranean climate**, with mild winters and hot, mostly dry summers.
- **Topography:** Italy is largely **mountainous and rugged**, with plains and coastal lowlands.
- **Major Mountain Systems:**
  - **Alps** – along the northern border.
  - **Apennines** – run along the length of the Italian Peninsula.
- **Major Rivers:**
  - **Po** – Italy's longest river.
  - **Adige**.
- **Highest Point: Mont Blanc**.
- **Volcanic Features:** Italy has several volcanoes, including:
  - **Mount Etna** – Sicily
  - **Stromboli** – Aeolian Islands
- **Natural Resources: Coal, antimony, mercury, zinc, potash, barite, asbestos, pumice, fluorspar, feldspar, pyrite, natural gas and crude oil**.

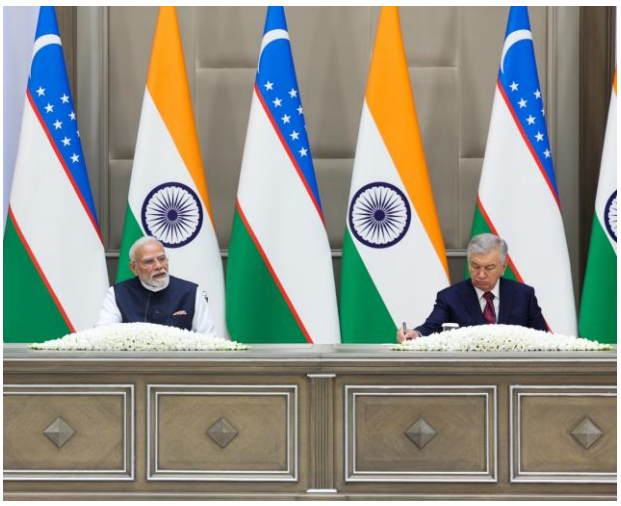
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EDITORIALS

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International Issues

India–Uzbekistan Joint Statement: PM Modi's State Visit



Why in News?

Prime Minister **Narendra Modi** paid a **State Visit to Uzbekistan from 29th to 30th August 2026** at the invitation of Uzbek President **Shavkat Mirziyoyev**.

- The two leaders held talks in a **warm, friendly and constructive atmosphere**.
- They reviewed the present status and future prospects of **India–Uzbekistan bilateral relations**.
- The discussions covered both **bilateral and regional issues**.
- Both sides agreed to deepen cooperation and work towards elevating their relationship to a **Comprehensive Strategic Partnership**.

Key Areas of Cooperation

The two countries identified several priority areas for deeper cooperation:

- Trade, economy and investment
- Transport connectivity
- Digital transformation
- Information Technology and Artificial Intelligence
- Space and cybersecurity
- Energy transition
- Critical minerals
- Food security

- Healthcare and pharmaceuticals
- Education

The leaders also stressed the importance of a **free, open and rules-based international order** and highlighted the growing strategic importance of **Central Asia**.

Political, Parliamentary and Security Cooperation

Regular Political Dialogue

- India and Uzbekistan agreed to maintain **regular and trust-based dialogue** at both leadership and institutional levels.
- They will continue exchanges of visits and contacts through:
    - Bilateral meetings
    - International and multilateral forums

Foreign Ministers' Mechanism

- Both countries agreed to establish a **Foreign Ministers-led mechanism**.
- It will:
    - Coordinate implementation of bilateral agreements.
    - Provide high-level oversight.
    - Facilitate priority projects and initiatives.
    - Ensure timely implementation of commitments.

Parliamentary Cooperation

- The leaders recognised the increasing importance of **parliamentary diplomacy**.
- They welcomed growing contacts between:
    - **Oliy Majlis of Uzbekistan**
    - **Parliament of India**
- Cooperation will also continue through **parliamentary friendship groups** and international inter-parliamentary organisations.

Legal Framework

- Both sides agreed to strengthen the **legal framework for bilateral cooperation**.
- They will undertake a comprehensive review of existing bilateral agreements.
- The objective is to modernise the treaty framework according to **present-day priorities and realities**.

Counter-Terrorism and Security Cooperation

- India and Uzbekistan **unequivocally condemned terrorism**, including cross-border terrorism.
- Both sides reaffirmed a **zero-tolerance approach** towards terrorism.
- They rejected any justification of terrorism under any circumstances.

Areas of Security Cooperation

The two countries agreed to strengthen cooperation in:

- Law enforcement
- Intelligence sharing
- Combating violent extremism
- Countering illicit drug trafficking
- Organised crime
- Cyber threats
- Disrupting terrorist financing networks
- Tackling terrorist safe havens and infrastructure
- They stressed that **terrorists, their supporters, facilitators and affiliates must be brought to justice**.
- Cooperation under the **Joint Working Group on Counter Terrorism** will continue.

Defence Cooperation

- India and Uzbekistan appreciated growing cooperation between their **defence and security agencies**.
- Cooperation includes:
    - Regular exchanges
    - Institutional mechanisms
    - Capacity building
    - Joint activities
- The **Joint Working Group on Military Cooperation** is exploring new opportunities in the **defence industrial sector**.

Exercise Dustlik

- Both sides welcomed the successful conduct of the **Uzbekistan–India Joint Military Exercise "Dustlik"**.
- The latest edition was held in **Namangan Region, Uzbekistan, in April 2026**.

Central Asia–India Cooperation

- Both leaders reaffirmed their commitment to strengthening cooperation through the **Central Asia–India format**.
- Engagement will continue at:
    - Heads of State level
    - Other institutional levels
- Both sides also supported regular consultations on **regional issues**.

Trade, Economic and Investment Cooperation

Expanding Bilateral Trade

- India and Uzbekistan welcomed their growing economic partnership.
- Both sides recognised the **large untapped potential** for increasing trade and investment.
- The growing presence of **Indian companies in Uzbekistan** was highlighted as evidence of this potential.

Removing Trade Barriers

Both countries agreed to:

- Broaden the range of goods traded.
- Remove **non-tariff barriers**.
- Promote industrial cooperation.
- Increase bilateral trade turnover.
- A **Joint Working Group** will be established to address:
    - Non-tariff issues
    - Investment barriers
    - Sector-specific trade concerns

Digitalisation of Trade

The two countries will explore cooperation in:

- E-commerce
- Digitalisation of trade procedures
- Digital platforms for small and medium-sized enterprises
- Facilitating bilateral trade

WTO Cooperation

- Uzbekistan appreciated India's support for its **WTO accession**.
- Both sides agreed to protect the **multilateral trading system with the WTO at its core**, particularly keeping the interests of developing countries in mind.

Manufacturing and Market Access

- Both countries will support:
    - Manufacturing capacity
    - Export capacity
    - Regulatory dialogue
    - Mutual recognition arrangements
    - Faster market access

Business and Investment

The leaders welcomed the outcomes of:

- **Intergovernmental Commission on Trade, Economic, Scientific and Technical Cooperation**
- **Uzbekistan–India Business Forums**

These meetings were held in **June 2026 in Tashkent** and **August 2026 in New Delhi**.

Both sides agreed to:

- Increase cooperation between Indian and Uzbek companies.
- Connect their **value-added supply chains**.
- Identify mutually beneficial investment opportunities.
- Establish mechanisms to address investor concerns.
- Improve the **ease of doing business**.

Invest India–Uzbekistan Cooperation

- Cooperation between the **Investment Promotion Agency of Uzbekistan** and **Invest India** will be explored.
- Proposed activities include:
    - Joint business forums
    - Roadshows
    - Investment seminars
    - Stakeholder interactions

Preferential Trade Agreement

- The leaders recalled the conclusion of the **Joint Feasibility Study on the Uzbekistan–India Preferential Trade Agreement**.
- Relevant ministries were directed to explore the next steps on a **time-bound basis**.

Priority Trade Sectors

Both countries identified strong potential in:

- Electrical items
- Engineering products
- Automobiles
- Pharmaceuticals

Closer **business-to-business cooperation** will be encouraged in these sectors.

Energy, Natural Resources and Critical Minerals

- India and Uzbekistan welcomed discussions on:
  - Renewable energy
  - Modernisation of energy infrastructure
  - Investment projects

Minerals and Mining

Both sides agreed to explore cooperation in:

- Geology
- Mining
- Nuclear energy
- Industrial cooperation
- Critical minerals
- Strategic minerals

Possible areas include:

- Geological exploration
- Mineral processing
- Production of value-added products
- Recycling
- Development of integrated mineral value chains
- Indian companies may participate in the development of **mineral deposits in Uzbekistan**.
- Uzbek enterprises may explore joint collaboration in India.
- Both sides also expressed interest in greater cooperation in the **peaceful uses of nuclear energy**.

Agriculture and Food Security

India and Uzbekistan agreed to strengthen cooperation in:

- Agricultural value chains
- Agricultural exports
- Agriculture technology
- Livestock sector
- Food security
- Agricultural research

Focus on Sustainable Agriculture

- Both countries will promote:
  - Innovation
  - Resource-efficient technologies
  - Modern agricultural practices
  - Sustainable agriculture
- They will facilitate **bilateral trade in agricultural products**.
- Research institutions and enterprises will cooperate to improve agricultural productivity.
- Cooperation will also cover the **conservation and sustainable use of plant genetic resources**.

Transport, Logistics and Connectivity

- India and Uzbekistan reaffirmed their commitment to improving **transport and logistics connectivity**.
- Focus will be placed on:
  - Multimodal transport routes
  - Logistics corridors
  - Seamless movement of goods

Freight Transportation

- Both sides intend to continue efforts to **restore freight transportation**.
- The objective is to reduce **transportation costs**.

Road Infrastructure

The countries will:

- Exchange expertise in advanced road construction technologies.
- Explore joint projects for:
  - Road reconstruction
  - Road modernisation
  - Infrastructure development

Green Public Transport

- Both sides recognised the need for **environment-friendly and energy-efficient public transport** in Uzbekistan.
- They will explore opportunities for joint projects in this field.

Digital Technologies, AI, Innovation and Space

IT Parks

- The leaders welcomed the successful operation of the **first IT Park in Tashkent**.
- It was established in **2019 based on the Indian model** with active support from the **Software Technology Parks of India (STPI)**.
- Both sides agreed to strengthen partnerships among:
  - Technology parks
  - Companies
  - Startups
  - Educational institutions

Artificial Intelligence

- India and Uzbekistan welcomed stronger cooperation in **high technology and digital transformation**.
- They referred to understandings reached in **February 2026** during the **India AI Impact Summit in New Delhi**.

Both countries agreed to cooperate in developing:

- Safe AI
- Secure AI
- Trustworthy AI systems

Cooperation will include **exchange of experience and best practices** to use AI for:

- Sustainable economic growth
- Innovation
- Development
- Addressing social challenges

Space Cooperation

Both sides will expand practical cooperation in:

- Space exploration
- Peaceful uses of outer space
- Space applications
- Scientific data exchange
- Capacity building
- Joint workshops
- Training programmes

Education and Human Resource Development

Student and Academic Cooperation

- The leaders recognised the contribution of **Indian students in Uzbekistan** towards strengthening people-to-people relations.
- They welcomed the expansion of:
  - **India Studies in Uzbekistan**
  - **Uzbek Studies in India**

Research and Skills

Both countries will promote:

- Joint research programmes
- Academic cooperation
- Human resource development
- Capacity-building initiatives

ITEC and ICCR

India and Uzbekistan have a long-standing partnership in capacity building.

- More than **2,700 Uzbek nationals** have participated in the **Indian Technical and Economic Cooperation (ITEC) Programme**.
- More than **400 Uzbek students** have received **ICCR scholarships**, including scholarships under **AYUSH**.
- Uzbekistan welcomed the announcement of the **Lal Bahadur Shastri Scholarship for Hindi Language** in Uzbekistan.
- Both sides agreed to further strengthen cooperation through the **ITEC Programme**.

Environment and Aral Sea Region

India and Uzbekistan share the goal of creating a **greener and healthier planet**.

Their initiatives include:

- Uzbekistan's **"Yashil Makon"**
- India's **"Ek Ped Maa Ke Naam"**

Aral Sea Cooperation

- India and Uzbekistan will cooperate in the **greening and ecological rehabilitation of the Aral Sea region**.
- India will provide **US$1 million** under its **Grant-in-Aid framework**.
- The support will include necessary **technical assistance**.

Healthcare and Pharmaceuticals

Public Health

Both countries agreed to strengthen cooperation in:

- Public health systems
- Biomedical research
- Medical innovation
- Development of new treatments and therapies

The partnership will leverage the scientific strengths of both countries.

Pharmaceutical Sector

- India and Uzbekistan welcomed growing cooperation in pharmaceuticals.
- The **Tashkent Pharma Park Innovative Scientific and Industrial Pharmaceutical Cluster** was highlighted as an important platform for:
  - Joint projects
  - Investment in pharmaceutical manufacturing
  - Localisation of production
  - Technology transfer

- Skilled workforce development

Medical Infrastructure

The two sides supported the establishment in Uzbekistan, in cooperation with Indian companies, of:

- Medical centres
- Laboratories
- Research institutions
- Joint pharmaceutical manufacturing enterprises

Culture and Heritage

- India and Uzbekistan share **centuries-old historical ties and cultural and civilisational connections**.
- Both countries agreed to expand cultural and humanitarian cooperation through:
  - Cultural days
  - Festivals
  - Exhibitions
  - Tours by artistic groups
  - Direct institutional links

Cultural Exchange Programme

- Both leaders welcomed the signing of the **Cultural Exchange Programme for 2026–2030**.
- Cooperation will also continue in the **field of archives**.

Buddhist Heritage

Both countries expressed interest in cooperation for:

- Preservation of World Heritage sites
- Study and restoration of heritage
- Museum cooperation
- Archaeological research
- Digitalisation of cultural heritage
- 3D modelling of archaeological artefacts
- Advanced conservation technologies
- Both leaders welcomed the **Letter of Intent** concerning conservation and restoration of the ancient Buddhist sites of:
  - **Fayaz Tepa**
  - **Karatepa**

Sports and Yoga

Sports Cooperation

India and Uzbekistan agreed to strengthen cooperation through:

- Exchange of experience in athlete preparation.
- Coach training.

Priority disciplines include:

- Badminton
- Archery
- Chess

Yoga

- Both leaders recognised the role of **yoga in promoting healthy lifestyles and strengthening people-to-people ties**.
- They highlighted the importance of the **International Day of Yoga on 21st June**.
- Cooperation between the **Yoga Federation of Uzbekistan** and India's **Ministry of AYUSH** includes instructor training.
- Uzbekistan also participates in international **Yogasana competitions**.
- India and Uzbekistan will continue promoting yoga in Uzbekistan with participation from leading Indian experts.
- Both sides also welcomed the conclusion of an **MoU on cooperation in traditional medicines**.

Cooperation in International Organisations

United Nations

- India and Uzbekistan reaffirmed that the **United Nations should play a central role in maintaining global peace and security**.
- They agreed to strengthen cooperation and mutual support in the UN and other international and regional organisations.

UN Security Council Reform

- Both countries called for **comprehensive reform of the UN**, including the Security Council.
- The objective is to make it:
  - More representative
  - More effective
  - More efficient
  - Better aligned with contemporary global realities
- **Uzbekistan reaffirmed its support for India's candidature for permanent membership of the UN Security Council.**

Global South

- Both sides agreed to strengthen coordination in international forums.

- The focus will be on advancing the **common interests of the Global South**.

Shanghai Cooperation Organisation

- India and Uzbekistan reaffirmed their commitment to strengthening cooperation within the **Shanghai Cooperation Organisation (SCO)**.
- They recognised the SCO as an important platform for:
    - Mutual trust
    - Regional peace
    - Security
    - Stability
    - Trade and economic cooperation
    - Investment
    - Cultural cooperation
    - Humanitarian exchanges

BRICS and NAM

India and BRICS

- President **Shavkat Mirziyoyev** congratulated Prime Minister **Narendra Modi** on India's **BRICS Chairship in 2026**.
- He wished India success in hosting the **BRICS Summit**.

Uzbekistan and NAM

- Prime Minister Narendra Modi expressed confidence in Uzbekistan's successful **Chairship of the Non-Aligned Movement (NAM) for 2027–2030**.
- India reaffirmed its readiness to continue supporting the **Non-Aligned Movement** as its founding member.

Conclusion

The **29–30 August 2026 State Visit of Prime Minister Narendra Modi to Uzbekistan** marked a significant step in strengthening India–Uzbekistan relations. The two countries agreed to deepen cooperation across **security, trade, investment, connectivity, critical minerals, agriculture, AI, space, healthcare, pharmaceuticals, education, culture and multilateral diplomacy**.

PM Modi at SCO Summit: 10 Key Action Points on Terrorism, Connectivity and Peace



Why in News?

- Prime Minister **Narendra Modi**, while addressing the **26th Shanghai Cooperation Organisation (SCO) Summit in Bishkek on 1st September 2026**, outlined **10 key areas for action** to strengthen regional cooperation.
- His address mainly focused on **security, connectivity, peace and economic opportunities**, with a strong emphasis on adopting a **united approach against terrorism**.

10 Key Action Points Highlighted by PM Modi

1. Strengthen the Three Pillars of the SCO

- PM Modi stressed that SCO cooperation should rest on three major pillars:
    - **Security**
    - **Connectivity**
    - **Opportunity**
- He called upon member countries to move from broad **declarations and intentions to measurable results and concrete outcomes**.

2. Target the Complete Terrorism Ecosystem

- India called for a comprehensive fight against terrorism rather than targeting only individual terrorist groups.
- The focus should include:
    - **Terrorist financing**
    - **Recruitment**
    - **Radicalisation**
    - **Safe havens**

- PM Modi also called for **zero tolerance towards double standards** in dealing with terrorism.

3. Oppose State-Supported Terrorism

- PM Modi urged SCO members to take a **clear and united position against state-supported terrorism**.
- He emphasised that terrorism must **never be used as a strategic tool or asset** by any country.

4. Promote Peace and Stability in Afghanistan

- India called for continued efforts to maintain **peace and stability in Afghanistan**.
- This should be supported through:
    - **Development assistance**
    - **Humanitarian support**
    - Continued assistance to the **Afghan people**

5. Use Dialogue and Diplomacy to Resolve Conflicts

- PM Modi stressed that conflicts should be addressed through **dialogue and diplomatic channels**.
- Escalating regional conflicts can have wider consequences for:
    - **Global energy security**
    - **Maritime trade**
    - **International supply chains**

6. Intensify the Fight Against Drugs and Organised Crime

- The Prime Minister called for stronger regional action against:
    - **Drug trafficking**
    - **Organised crime**
    - Other emerging security threats
- He highlighted the need for **better coordination and timely action through SCO mechanisms**.

7. Develop Reliable and Inclusive Connectivity

- India supported the creation of **reliable, inclusive and efficient connectivity networks**.
- At the same time, PM Modi stressed that connectivity projects should respect the **sovereignty and territorial integrity of all countries**.
- Such cooperation should remain consistent with the **SCO Charter**.

8. Modernise Trade and Logistics Networks

- PM Modi called for improving regional trade and logistics through:
    - **Simpler customs procedures**
    - Greater use of **digital documentation**
    - More efficient **logistics networks**
- The objective is to make cross-border trade **faster, smoother and more efficient**.

9. Make People-to-People Relations a Core Priority

- The Prime Minister called for placing **people-to-people connections** at the heart of SCO cooperation.
- Greater attention should be given to:
    - **Youth**
    - **Entrepreneurs**
    - **Farmers**
- The aim is to ensure that regional cooperation creates **real opportunities for ordinary citizens**.

10. Expand Youth, Scientific and Civilisational Exchanges

- India called for greater interaction in areas such as:
    - **Youth exchanges**
    - **Scientific cooperation**
    - **Entrepreneurship**
    - **Civilisational and cultural exchanges**
- PM Modi highlighted initiatives such as:
    - **SCO Start-up Forum**
    - **Young Authors' Conclave**
    - **Young Scientists' Forum**
- He also proposed an **SCO Civilizational Dialogue Forum**.
    - Its **first session is proposed to be held in India**.

SCO Summit

- The **SCO Summit** brings together the organisation's leadership to discuss **regional and global challenges** and strengthen cooperation among member states.
- The **26th SCO Leadership Summit** was held in **Bishkek, Kyrgyzstan**, as the organisation marked its **25th anniversary**.

- **Kyrgyzstan President Sadyr Japarov** hosted the summit and served as its chairman.
- The participating leaders included:
  - **Narendra Modi** — India
  - **Xi Jinping** — China
  - **Vladimir Putin** — Russia
  - **Shehbaz Sharif** — Pakistan
  - **Masoud Pezeshkian** — Iran
  - **Alexander Lukashenko** — Belarus
  - **Kassym-Jomart Tokayev** — Kazakhstan
  - **Shavkat Mirziyoyev** — Uzbekistan
  - **Emomali Rahmon** — Tajikistan
- According to the given source, the summit brought together **10 SCO member states, 15 partner countries and 2 observer countries**.

India-Belgium Relations: Strategic Partnership



Why in News?

- **Belgian Prime Minister Bart De Wever** visited India from **2–4 September 2026** at the invitation of PM Narendra Modi.
- This was his **first visit to India** since becoming Prime Minister in February 2025.

Key Highlights

Strategic Dialogue

- The **India-Belgium Strategic Dialogue** was launched in **Brussels on 15 July 2026**.
- It provides a regular framework for cooperation in:
  - Trade and investment
  - Green transition
  - Technology
  - Connectivity
  - Defence and security
  - People-to-people relations

India-EU Partnership

- Both sides welcomed the successful conclusion of negotiations for the **India-EU Free Trade Agreement** in January 2026.
- They called for early completion of:
  - **Investment Protection Agreement**
  - **Agreement on Geographical Indications**
- The **India-EU Trade and Technology Council** was also highlighted as an important platform for resilient supply chains and technology cooperation.

Trade and Investment

- India and Belgium aim to **double bilateral trade within the next five years**.
- Cooperation is expanding into:
  - **Pharmaceuticals and healthcare**
  - **Semiconductors**
  - **Critical minerals**
  - **Defence manufacturing**
  - **Advanced materials**
  - **Digital technologies**
  - **Renewable energy**
  - **Space and aeronautics**

Diamond Trade

- **Antwerp–Mumbai–Surat** remains an important diamond-trade connection.
- Both sides agreed to strengthen this traditional economic partnership while exploring new sectors.

Investment Fast-Track

- India and Belgium launched an **Investment Fast-Track Mechanism**.
- It aims to:
  - Facilitate investments.
  - Resolve investment-related bottlenecks.
  - Encourage long-term business cooperation.
- **SFPIM (Belgium)** and **NIIF (India)** are also working towards an **Indo-Belgian economic and investment corridor**.

Defence Cooperation

- Both countries signed a **Letter of Intent** to strengthen defence cooperation.

- Areas include:
    - **Staff talks**
    - Military education and training
    - Research
    - Defence-industrial partnerships
    - Maritime security
    - Emerging technologies
    - Indo-Pacific cooperation
- Belgium will deploy a **Defence Attaché in New Delhi**, while India plans to appoint a resident Defence Attaché in Brussels.

Counter-Terrorism

- Belgium condemned the **Pahalgam terrorist attack of April 2025** and expressed solidarity with India.
- Both sides supported stronger international action against:
    - Terrorist networks
    - Terror financing
    - Safe havens
- They intend to explore a **Joint Working Group on Counter-Terrorism**.

Law Enforcement

- **CBI and Federal Police of Belgium** signed an MoU.
- Cooperation will cover:
    - **Transnational organised crime**
    - **Cybercrime**
    - Information sharing
    - Capacity building
    - Tracing fugitives

Sushma Swaraj Institute of Foreign Service Cooperation

- Both sides welcomed cooperation between:
    - **Sushma Swaraj Institute of Foreign Service (India)**
    - **Federal Public Service Foreign Affairs (Belgium)**
- Focus: **diplomatic training and capacity building**.
- This will strengthen institutional cooperation and exchange of **best practices in diplomacy**.

Green Energy & Technology : Renewable Energy

- A renewed **India-Belgium MoU on Renewable Energy Cooperation** was signed.
- Key areas:
    - **Green hydrogen**
    - Solar energy
    - Energy storage
    - Offshore wind
    - Bio-energy
    - Small hydropower
    - Pumped storage

Green Hydrogen

- Both sides seek cooperation across the **green hydrogen value chain**
- Objective:
    - **Decarbonisation**
    - Energy security
    - Technological innovation
    - Sustainable growth

Semiconductors & AI

- India and Belgium encouraged cooperation between Indian semiconductor institutions and **imec**, Belgium.
- Both sides also highlighted collaboration in:
    - **Artificial Intelligence**
    - Emerging technologies
    - Innovation
    - Startups

Science & Education : Space and Astronomy

- Cooperation is growing through the **Belgo-Indian Network for Astronomy and Astrophysics (BINA)**.
- Belgian institutions have contributed to several Indian astronomical facilities, including:
    - **Devasthal Optical Telescope**
    - **Devasthal International Liquid Mirror Telescope**
    - **Mount Abu Telescope**
    - **Multi-Application Solar Telescope, Udaipur**

Education & Mobility

- India invited leading **Belgian universities** to establish campuses in India under the **National Education Policy**.
- Both sides want greater cooperation in Skill development, Technical & Emerging skills, Recognition of qualifications

- They also discussed easier mobility of **students, researchers, skilled professionals and business travellers**.

Multilateral Cooperation : UN Security Council Reform

- Both countries supported **reform of the UN Security Council**.
- Belgium reaffirmed support for **India's permanent membership** of a reformed UNSC.
- Both agreed to support each other's candidature for **non-permanent UNSC membership**:
    - India → **2028–29**
    - Belgium → **2037–38**

Global Issues

- India and Belgium discussed:
    - **Ukraine conflict**
    - **West Asia**
    - Maritime security
- Both emphasised **dialogue, diplomacy and international law**.

Historical Dimension

- More than **9,000 Indian soldiers** made the supreme sacrifice in **Flanders Fields during World War I**.
- Belgium was among the early European countries to establish diplomatic relations with India in **1947**.
- **2027** will mark the **80th anniversary of India-Belgium diplomatic relations**.

UN "Correct the Map" Resolution: India's Position on J&K and Ladakh



Why in News?

- The **UN General Assembly** adopted the resolution **"Correct the Map: Rebalancing Global Cartographic Representation and Promoting Equitable Representation of the World's Regions, Particularly Africa"** on **4 September 2026**.
- India voted **in favour** but clarified that the resolution **does not endorse any particular world map, projection or depiction of national boundaries**.
- India stressed that **Jammu & Kashmir and Ladakh**, as Union Territories of India, must be shown according to **India's official map**. Any inaccurate or misleading depiction would be unacceptable.

What is the "Correct the Map" Resolution?

- The resolution seeks to promote **more accurate cartographic representation of the relative sizes of continents**.
- Its central emphasis is on encouraging the use of **equal-area map projections**, which preserve the relative area of landmasses.
- It was **sponsored by Togo** and received:
    - **164 votes in favour**
    - **6 abstentions**
    - **1 vote against — United States**

Important Point

- The resolution is **non-binding**.
- It does **not**:
    - Adopt or authenticate a particular world map.
    - Determine international boundaries.
    - Take a position on disputed territories.
    - Decide official place names.

Therefore, India's support for the resolution **cannot be interpreted as acceptance of any particular political map**.

India's Position

India's External Affairs Ministry made three important points:

1. Official Map Must Be Followed

- India's sovereign territory, including the Union Territories of **Jammu & Kashmir and Ladakh**, must be represented according to **India's official map**.

2. No Compromise on Territorial Integrity

- India reiterated that its position on **sovereignty and territorial integrity is clear, consistent and non-negotiable**.

3. Cartographic Reform ≠ Political Cartography

- India supported the principle of **equal-area representation**.
- However, it maintained that this technical/cartographic objective should not be confused with questions concerning:
    - International boundaries
    - Disputed territories
    - Sovereignty
    - Place names

Why is the Mercator Projection Controversial?

Mercator Projection

- Developed by Flemish cartographer **Gerardus Mercator in 1569**.
- It was primarily designed to assist **navigation by European explorers**.
- The projection preserves directions useful for navigation but significantly distorts **area**, particularly towards the poles.

Major Distortion

- **Africa** appears much smaller relative to **Greenland** than it actually is.
- In reality, Africa is approximately **14 times larger than Greenland**.
- Critics argue that such visual distortion can influence perceptions of the **geographical importance and development potential** of regions closer to the equator.

Equal Earth Projection

- In **2018**, cartographers developed the **Equal Earth projection**.
- Unlike Mercator, it is an **equal-area projection**, meaning it represents the relative areas of continents more accurately.
- The **African Union's 54 member states** adopted it in February and supported its use as a more representative depiction of continental sizes.

Representation and Equity

- Supporters argue that correcting area distortions can provide a **more balanced visual representation**, particularly for regions near the equator.
- Togo argued that a **"fair world" requires a fair map**, highlighting the influence of cartography on global perceptions.

BRICS India 2026: India's Fourth Chairship and 18th BRICS Summit



Why in News?

- **India is chairing BRICS in 2026** for the **fourth time**.
- India will host the **18th BRICS Summit** on:
    - **Date:** 12–13 September 2026
    - **Venue: Bharat Mandapam, New Delhi**
- The year is significant as **BRICS completes 20 years since its founding**.
- India's Chairship focuses on a **people-centric and "Humanity First" approach**.

BRICS 2026 Theme

- ***"Building for Resilience, Innovation, Cooperation and Sustainability"***
- India's priorities are organised around four broad themes:

1. Resilience

- Strengthen **economic, social and institutional resilience**.
- Address:
    - Global uncertainties
    - Supply-chain disruptions
    - Health challenges
    - Climate-related risks

2. Innovation

- Promote **emerging technologies** for inclusive development.

- Focus areas include:
  - **Digital Public Infrastructure (DPI)**
  - **FinTech**
  - **Artificial Intelligence (AI)**
  - Knowledge sharing
- Aim → Improve **public service delivery** and promote future-ready growth.

3. Cooperation

- Deepen cooperation among BRICS countries through:
  - **Policy coordination**
  - Development finance
  - Trade facilitation
  - People-centric partnerships
  - Reform of global institutions

4. Sustainability

- Strengthen cooperation on:
  - **Climate action**
  - **Green finance**
  - Clean/green energy transition
  - Sustainable development

BRICS 2026 Logo

- The logo combines **Indian cultural symbolism with the broader BRICS identity**.
- **Lotus**
  - Represents **purity, resilience and progress**.
- **Petals**
  - Carry colours representing the **BRICS member countries**.
  - Symbolise **unity and collective strength**.
- **Namaste gesture**
  - Represents:
    - Warmth
    - Respect
    - Dialogue
    - Harmonious cooperation
- Overall, the logo reflects India's vision of:
  - **Inclusivity**
  - Shared growth
  - Sustainable development
  - Global harmony

What is BRICS?

- **BRICS** is a grouping of major **emerging markets and developing countries**.
- It provides a platform for:
  - Consultation
  - Economic cooperation
  - Political coordination
  - Discussion of global and regional issues
  - Reform of global political and economic governance

BRICS Members in 2026

There are **11 BRICS member countries**:

1. **Brazil**
2. **Russia**
3. **India**
4. **China**
5. **South Africa**
6. **Egypt**
7. **Ethiopia**
8. **Iran**
9. **Saudi Arabia**
10. **United Arab Emirates**
11. **Indonesia**

Important Expansion

- **2009:** First BRIC Summit.
- **2011:** South Africa joined → **BRICS**.
- **2024:** Egypt, Ethiopia, Iran, Saudi Arabia and UAE joined.
- **2025:** Indonesia joined.

BRICS Partner Countries

The following **10 countries** became BRICS Partner Countries in 2025:

- **Belarus**
- **Bolivia**
- **Cuba**
- **Kazakhstan**
- **Malaysia**
- **Nigeria**
- **Thailand**
- **Uganda**
- **Uzbekistan**
- **Vietnam**

Evolution of BRICS

Formation

- **2006:** BRIC was formalised at the first meeting of BRIC Foreign Ministers on the margins of the **UN General Assembly in New York**.

- **2009:** First BRIC Summit held at **Yekaterinburg, Russia**.
- **2010:** Decision taken to include **South Africa**.
- **2011:** South Africa participated in the BRIC Summit at **Sanya, China**, making it **BRICS**.

India's BRICS Chairships

India has chaired BRICS:

- **2012**
- **2016**
- **2021**

2026 → Fourth Chairship

Significance

- India gets an opportunity to:
  - Shape the **BRICS agenda**.
  - Promote priorities of the **Global South**.
  - Strengthen cooperation among developing economies.
  - Push for reforms in global institutions.
  - Promote India's **DPI and technology-based development model**.

Three Core Pillars of BRICS Cooperation

1. Political and Security Cooperation

- International peace and security
- Counter-terrorism
- Regional and global political issues

2. Economic and Financial Cooperation

- Trade
- Investment
- Development finance
- International financial architecture
- Global economic governance
- Cooperation related to the **WTO**

3. People-to-People Exchanges

- Culture
- Education
- Youth
- Sports
- Tourism
- Academic and professional exchanges

Broader Areas of BRICS Cooperation

The BRICS agenda has expanded significantly beyond its original economic focus.

Key areas include:

- **Trade and investment**
- **Energy security**
- **Food security**
- **Climate change**
- **Agriculture**
- **Labour and employment**
- **Telecommunications**
- **Terrorism**
- **International financial architecture**
- **Global economic governance**

India's BRICS Chairship: Year-long Engagement

- India's Chairship involves activities across **more than 25 cities**.
- More than **350 meetings and high-level engagements** are planned/conducted across the country.
- Activities cover all three traditional BRICS pillars:
  - Political and security cooperation
  - Economic and financial cooperation
  - Cultural and people-to-people exchanges
- The focus is on generating **practical and development-oriented outcomes**.

India–China Relations: Modi–Xi Meeting 2026



Why in News?

- Prime Minister **Narendra Modi** is scheduled to meet Chinese President **Xi Jinping** on **12 September 2026** in New Delhi.
- The meeting comes amid efforts to improve **India–China economic and people-to-people relations**, while border tensions remain unresolved.
- Xi's visit is significant as it will be his **first visit to New Delhi since 2014**.

- He had earlier visited **Goa in 2016** for the BRICS Summit.
- He also visited **Mamallapuram** for an informal India–China summit.

- Neither leader has made a bilateral visit to the other country since **2020**.

Is This an India–China "Reset"?

- It may be premature to describe the meeting as a complete **"reset"**.
- The immediate objective is likely to achieve **stabilisation and gradual normalisation**.
- India wants to move from occasional summit-level engagement towards a **steady and sustained dialogue**.
- Stabilisation is required on both:
  - **Military and political issues**
  - **Economic relations**

Major Issues on the Agenda

1. Border Tensions and Arunachal Pradesh

- The **LAC** remains the most important strategic concern.
- In **October 2024**, India and China announced disengagement from the reported **friction points**.
- Subsequently, agreements were reached on **patrolling arrangements** in several sectors, with buffer zones maintained in some areas.
- However, tensions have recently shifted attention towards the **Eastern Sector, particularly Arunachal Pradesh**.

Taksing Area

- Taksing is a remote border area in Upper Subansiri district of Arunachal Pradesh, near the India–China LAC.
- Reports indicate that **Indian Army and PLA forces remain deployed at forward positions** around Taksing.
- PLA forces have reportedly established positions at higher elevations.
- India has increased patrolling after a **brief confrontation in July 2026**.
- India is concerned about possible attempts to **alter the existing status quo**.

Expected Indian Position

- India is likely to stress that:
  - **Peace and tranquillity along the border** are essential for normal bilateral relations.
  - Any attempt to change the status quo should be avoided.
  - Border stabilisation should precede broader normalisation.

2. Strengthening Border Management

- India and China have recently increased military-level communication.
- **Two Corps Commander-level meetings** were held in the Eastern Sector shortly before the summit.
- This followed:
  - **NSA Ajit Doval's visit to Beijing**
  - Special Representatives' talks with Chinese Foreign Minister **Wang Yi**.

Border Personnel Meeting Points

- Both sides have agreed to increase **Border Personnel Meeting (BPM) points** beyond the existing **five**.
- Such mechanisms are important for:
  - Direct communication between local commanders.
  - Preventing misunderstandings.
  - Managing incidents along the LAC.
  - Reducing escalation risks.

3. Boundary Settlement

- India and China are also discussing the broader **boundary question** through the Special Representatives' mechanism.
- The process involves:
  - **Delimitation** → deciding the boundaries.
  - **Delineation** → marking them on maps.
  - **Demarcation** → physically marking them on the ground.
- A fundamental difficulty is that the two countries **do not have an agreed common definition of the LAC**.

Key Distinction

- **LAC management** → maintaining peace along the existing line.
- **Boundary settlement** → permanently resolving the territorial dispute.

4. Transboundary Rivers

- **River-water cooperation** has gained importance following recent Himalayan disasters.
- Flash floods associated with **glacial collapse near the China–Nepal border** have highlighted risks from upstream events.
- Experts have called for:
    - Greater **hydrological data sharing**.
    - Timely disaster warnings.
    - Better information about upstream developments.
    - Greater scrutiny of **dams and river-water management**.
- Since Himalayan rivers cross national boundaries, upstream activities can have significant **downstream consequences for India**.

5. Trade and Trade Deficit

- Bilateral trade has increased substantially since 2014.

Indicator	2014	Recent
India–China trade	~$70 bn	~$150 bn
India's trade deficit	~$38 bn	~$113 bn

- Thus, India's trade with China has more than doubled, but the **trade deficit has nearly trebled**.
- India is seeking:
    - Greater access to the **Chinese market**.
    - Increased Indian exports.
    - More balanced trade.
    - Greater economic reciprocity.

6. Chinese Export Controls

- China's restrictions on exports of strategic products have become an important concern for India.
- Recent restrictions have affected areas such as:
    - **Critical minerals**
    - **Heavy infrastructure equipment**
- Such measures can create:
    - Supply-chain uncertainty.
    - Higher costs for Indian industries.
    - Strategic dependence on Chinese inputs.

7. Chinese Investment and FDI

- India introduced tighter scrutiny of **Chinese FDI after the 2020 border crisis**.
- Some restrictions have subsequently been eased.
- China continues to complain about what it considers **discriminatory treatment of Chinese businesses** in India.
- India, meanwhile, remains concerned about:
    - National security.
    - Strategic technologies.
    - Control over sensitive sectors.

Recent Example

- The **Serious Frauds Investigation Office (SFIO)** recommended an investigation involving Chinese telecom company **Xiaomi**.
- China responded by seeking a **fair, transparent and non-discriminatory business environment**.

8. People-to-People Relations

- Restoring people-to-people contacts is another important part of normalisation.
- Areas include:
    - **Visa facilitation**
    - Tourism
    - Business travel
    - Academic exchanges
    - Cultural contacts
- Greater mobility can help rebuild **trust and connectivity** between the two societies.

India's Broader Approach

India is likely to favour **managed competition and reciprocal engagement**, rather than expecting immediate strategic convergence.

Key priorities:

- **Border peace and stability**
- Reduction of the **trade deficit**
- Better market access for Indian companies
- Greater predictability in Chinese exports
- Fair investment conditions
- Improved visa and people-to-people connectivity
- Greater cooperation on **transboundary rivers**

Challenges

- **Unresolved boundary dispute**

- **Trust deficit after the 2020 crisis**
- Continued military deployment along sensitive areas
- **Arunachal Pradesh tensions**
- Growing **trade imbalance**
- Chinese restrictions on strategic exports
- Differences over investment and market access
- Wider geopolitical competition

Way Forward

- Maintain border peace
- Institutionalise dialogue
- Continue boundary negotiations
- Ensure economic reciprocity
- Diversify supply chains
- Strengthen river cooperation
- Restore people-to-people contacts

BRICS New Delhi Declaration 2026



Why in News?

- The **18th BRICS Summit** was held in **New Delhi on 12–13 September 2026**.
- Leaders adopted the **BRICS New Delhi Declaration** under the theme:
  - **"Building for Resilience, Innovation, Cooperation and Sustainability."**
- The declaration covers cooperation in **global governance, security, economy, health, agriculture, energy, technology, climate and people-to-people relations**.

India's BRICS Chairship

- India hosted **400+ meetings and engagements** across **30 cities**.
- These involved:
  - Ministers
  - Parliamentarians
  - Officials
  - Experts
  - Businesses
  - Civil society and people
- The focus was on **practical, inclusive and development-oriented cooperation**.

1. Global Governance & Multilateralism

- BRICS called for a **more representative, fair and accountable international order**.
- It reaffirmed support for:
  - **Multilateralism**
  - **Multipolarity**
  - International law
  - UN Charter
- Greater representation of **Emerging Markets and Developing Countries (EMDCs)** and **Least Developed Countries (LDCs)** was emphasised.

UN Security Council Reform

- BRICS supported **comprehensive reform of the UN**, including the Security Council.
- Objective → Increase representation of developing countries, particularly from **Africa, Asia and Latin America**.
- **China and Russia** reiterated support for **Brazil and India** to play a greater role in the UN, including the Security Council.

Bretton Woods Institutions

- BRICS called for reforms in the **IMF and World Bank**.
- Key demands:
  - Greater voice and voting power for EMDCs.
  - More representative governance.
  - Transparent and merit-based leadership selection.
  - IMF quota reforms reflecting the changing global economy.

2. WTO and Global Trade

- BRICS reaffirmed support for a **rules-based multilateral trading system with the WTO at its core**.
- It called for:
  - WTO reform.
  - Restoration of a fully functioning **two-tier dispute settlement mechanism**.

- Appointment of new **Appellate Body members**.

- BRICS opposed rising **tariffs, non-tariff barriers and protectionism** that disrupt global trade and supply chains.

Important Point

- BRICS also opposed **unilateral economic sanctions** that are contrary to international law and the UN Charter.

3. International Peace & Security

- BRICS called for resolving international disputes through:
  - **Dialogue**
  - Consultation
  - Diplomacy
  - Preventive diplomacy
  - Mediation
- It expressed concern over:
  - Global conflicts
  - Geopolitical polarisation
  - Rising military expenditure
  - Nuclear risks.

West Asia

- BRICS expressed concern over escalating tensions in **West Asia**.
- Called for:
  - Maximum restraint.
  - Protection of civilians and civilian infrastructure.
  - Peaceful dialogue and diplomacy.
  - Uninterrupted flow of **trade, energy and supply chains**.

Gaza

- Called for:
  - Maintenance of the **ceasefire**.
  - Unhindered humanitarian assistance.
  - Protection of Palestinian rights.
  - Rejection of forced displacement.
- Reaffirmed support for a **two-state solution** based on internationally recognised **1967 borders**, with East Jerusalem as the capital of Palestine.

Other Conflicts

- **Lebanon:** Respect for ceasefire and UNSC Resolution 1701; protection of UNIFIL.
- **Sudan:** Immediate permanent ceasefire and an **"African solution to African problems."**
- **Syria:** Support for a peaceful, inclusive and UN-facilitated political transition.

4. Counter-Terrorism

- BRICS strongly condemned **terrorism in all forms**.
- The declaration specifically condemned the **22 April 2025 terrorist attack in Jammu & Kashmir**, in which **26 people were killed**.
- It called for:
  - **Zero tolerance for terrorism**
  - Action against terrorist financing.
  - Action against safe havens.
  - Prevention of cross-border movement of terrorists.
  - Rejection of **double standards** in counter-terrorism.

Comprehensive Convention on International Terrorism

- BRICS called for the early adoption of the **Comprehensive Convention on International Terrorism (CCIT)** under the UN framework.

5. Cybersecurity and Digital Cooperation

- BRICS recognised **ICTs and digital technologies** as major drivers of economic and social development.
- Cooperation will focus on:
  - Cybersecurity
  - Data security
  - Cybercrime
  - Responsible use of ICTs
  - Information sharing
- BRICS encouraged countries to sign and ratify the **UN Convention against Cybercrime**.

Emerging Digital Threats

- Particular concern was expressed over:
  - **Deepfakes**
  - Disinformation
  - Misinformation
  - Hate speech
  - Malicious software
  - Cybercrime

6. Space Cooperation

- BRICS welcomed progress under the **BRICS Remote Sensing Satellite Constellation (RSSC)**.
- Focus areas include:
  - Peaceful use of outer space.

- Reducing differences in space capabilities.
- **Space-debris mitigation**.

- Progress was also noted towards:
  - Expanding the RSSC.
  - Establishing a **BRICS Space Council**.

Prevention of Arms Race in Outer Space

- BRICS supported **PAROS — Prevention of an Arms Race in Outer Space**.
- It opposed:
  - Weaponisation of outer space.
  - Threats or use of force against space objects.

7. Health Cooperation

- BRICS reaffirmed cooperation towards **Universal Health Coverage (UHC)**.
- Key priorities:
  - Disease surveillance.
  - Early-warning systems.
  - Health emergency preparedness.
  - Affordable medicines and vaccines.
  - Digital health.
  - Health workforce development.

Major Initiatives

- **BRICS Integrated Early Warning System** for mass infectious diseases.
- **BRICS Mission for Healthy Lifestyle**.
- **BRICS Roadmap for Healthy Lifestyle Promotion (2026–2029)**.
- **BRICS Network of Centres of Excellence on Mental Health**.
- **NIMHANS** designated as the coordinating Centre of Excellence.

Traditional Medicine

- Proposed **BRICS Expert Working Group on Traditional, Complementary and Integrative Medicine (TCIM)**.
- Focus → research, safety, quality and evidence-based use of traditional medicine.

8. Agriculture & Food Security

- BRICS highlighted its major role in **global food production**.
- Key concerns:
  - Food insecurity.
  - Fertiliser shortages.
  - Food-price volatility.
  - Supply-chain disruptions.

BRICS Grain Exchange

- BRICS continued discussions on establishing a **BRICS Grain Exchange**.
- It could potentially expand beyond grains to other agricultural commodities.

BRICS AGRIN

- **BRICS AGRIN** → Agro-Inputs, Genetic Resources and Information Network.
- It is a **collaborative, non-binding and farmer-centric** initiative.
- A **Global Forum on Farmers' Rights in Seed Systems** was also launched.

9. Energy Security

- BRICS recognised **energy security** as essential for:
  - Economic development.
  - National security.
  - Social welfare.
- Emphasis on:
  - Diversified energy sources.
  - Stable energy markets.
  - Resilient energy infrastructure.
  - Secure supply chains.

Energy Transition

- BRICS supported **just, orderly and inclusive energy transitions**.
- It recognised the continuing role of **fossil fuels**, particularly for developing economies.
- Cooperation will cover:
  - Renewable energy
  - Nuclear energy
  - Hydrogen
  - Bioenergy
  - Hydropower
  - Energy storage
  - Low-carbon technologies.

Smart Grids

- BRICS adopted **Guiding Principles on Smart Grids and Energy Storage**.
- India proposed a **BRICS Digital Centre of Excellence for Smart Grids and Energy Storage**.

10. Critical Minerals

- BRICS stressed the need for **reliable, diversified and resilient critical-mineral supply chains**.
- Objectives:
    - Secure supplies for clean-energy technologies.
    - Promote value addition.
    - Support economic diversification.
    - Ensure fair benefit sharing.
    - Respect the **sovereign rights of resource-rich countries**.

11. Industry, Start-ups & Innovation

- Cooperation will focus on **Industry 4.0**, technology and innovation.
- BRICS welcomed:
    - **BRICS Incubator Network**
    - BRICS Startup Knowledge Hub
    - BRICS Startup Forum
    - Proposed **BRICS Startup Innovation Fund**.

MSMEs

- The **BRICS SME Forum** was held in **Agra**.
- Focus → improving MSME access to:
    - Finance
    - Technology
    - Markets
    - Global Value Chains (GVCs).

12. Science, Technology & AI

- BRICS recognised **Science, Technology and Innovation (STI)** as key drivers of sustainable development.
- Cooperation includes:
    - Quantum technologies.
    - Research infrastructure.
    - Joint scientific research.
    - Knowledge sharing.

AI

- BRICS supported international cooperation for:
    - **Safe and trustworthy AI**
    - Inclusive access to AI resources.
    - AI for economic growth and social welfare.
    - Energy-efficient AI.
    - Addressing AI-related risks.

Digital Public Infrastructure

- BRICS recognised **DPI and Digital Public Goods** as tools for:
    - Social inclusion.
    - Large-scale service delivery.
    - Digital transformation.
    - Economic opportunities.
- Proposal → **BRICS Digital Public Infrastructure Repository** and pilot projects.

13. Climate Change & Disaster Resilience

- BRICS stressed the need for stronger **climate and disaster resilience**, particularly in developing countries.
- Priorities:
    - Early-warning systems.
    - Risk-informed planning.
    - Climate-resilient infrastructure.
    - Anticipatory action.
    - Greater climate finance.

CDRI

- The declaration recognised the role of the **Coalition for Disaster Resilient Infrastructure (CDRI)** in promoting resilient infrastructure through:
    - Technical assistance.
    - Knowledge exchange.
    - Policy support.
    - Financing approaches.

14. Climate Finance

- BRICS highlighted the disproportionate climate burden faced by **EMDEs**.
- It called for:
    - Greater adaptation finance.
    - Technology transfer.
    - Capacity building.
    - Accessible and predictable climate finance.
- BRICS supported cooperation on **carbon markets** and people-centric climate adaptation.

15. New Development Bank (NDB)

- BRICS reaffirmed the importance of the **New Development Bank** for:
    - Infrastructure development.
    - Sustainable development.
    - Reducing inequality.

- Supporting emerging economies.
- The NDB is encouraged to:
  - Mobilise more resources.
  - Expand **local-currency financing**.
  - Diversify funding sources.
  - Expand membership.

BRICS–NDB Knowledge Portal

- India launched the **BRICS-NDB Knowledge Portal**.
- It brings together:
  - Development experiences.
  - Best practices.
  - Policy innovations.
  - Lessons from NDB-funded projects.

16. BRICS Contingent Reserve Arrangement

- **CRA** functions as a BRICS financial safety net.
- Members supported amendments to improve its:
  - **Flexibility**
  - Responsiveness during crises.
- New BRICS members may join the CRA on a **voluntary basis**.

17. Cross-Border Payments

- BRICS is exploring more efficient **cross-border payment mechanisms**.
- Discussions include:
  - Interoperability of payment systems.
  - Trade settlement in **local currencies**.
  - Faster and cheaper cross-border payments.
- However, the declaration recognises that there is **no one-size-fits-all approach**.

18. MSME Finance

- Affordable finance remains a major obstacle to MSME internationalisation.
- BRICS adopted guiding principles for **credit assessment of export-oriented MSMEs**.
- The **Jaipur Consensus** proposes studying an **Invoice Discounting Mechanism** to help MSMEs unlock working capital.

19. People-to-People Cooperation

- BRICS emphasised greater interaction through:
  - Education
  - Culture
  - Tourism
  - Youth
  - Sports
  - Business
  - Academic exchanges.

Women

- BRICS promoted **women-led development**.
- Focus areas:
  - Financial and digital inclusion.
  - Entrepreneurship.
  - Skill development.
  - Participation in governance and climate action.

Education & Skills

- Strengthening:
  - **TVET**
  - Digital literacy.
  - Academic mobility.
  - STEM education.
  - Industry–education linkages.
- **BRICS Network University** remains an important cooperation mechanism.

Labour

- BRICS adopted **BRICS CONNECT** for cooperation on:
  - Capacity building.
  - Employability.
  - New skills and technologies.
- Focus also includes **social protection for gig and platform workers** and portability of benefits for migrant workers.

20. Culture, Tourism & Sports

- BRICS supported protection and **repatriation of cultural heritage and antiquities**.
- Cultural cooperation includes:
  - BRICS Culture Festival
  - Theatre and Film Festivals
  - Creative industries
  - Traditional knowledge.

Tourism

- Focus on:
  - **Sustainable tourism**
  - Ecotourism
  - Digital tourism
  - Community-led tourism
  - AI-enabled tourism systems.

Sports

- BRICS Games promote:

- High-performance sports.
- Traditional and indigenous sports.
- Youth participation.

- India proposed cooperation in **sports-goods manufacturing and sports technology**.

Key Initiatives to Remember

Initiative	Significance
BRICS Grain Exchange	Food security and agricultural trade
BRICS AGRIN	Agro-inputs, genetic resources and information
BRICS Startup Innovation Fund	Startup-led innovation
BRICS DPI Repository	Digital transformation
BRICS Integrated Early Warning System	Infectious-disease preparedness
BRICS Mission for Healthy Lifestyle	NCD prevention
BRICS Space Council	Space cooperation
BRICS Digital Centre for Smart Grids	Energy digitalisation
BRICS-NDB Knowledge Portal	Development knowledge sharing
BRICS CONNECT	Skills and labour cooperation
BRICS Multilateral Guarantees	Mobilising private capital
BRICS Risk Lab	Insurance and risk management

World Nomad Games 2026: Celebrating Nomadic Sports and Cultural Heritage



Why in News?

Prime Minister **Narendra Modi** attended the opening ceremony of the **6th World Nomad Games** in **Kyrgyzstan** ahead of his participation in the **Shanghai Cooperation Organisation (SCO) Summit** in Bishkek.

- **Venue:** Kyrgyzstan
- **Dates: 31 August – 6 September 2026**
- The opening ceremony was also attended by **Russian President Vladimir Putin** and other heads of state.
- The biennial event celebrates the **traditional sports, culture and heritage of nomadic civilisations**.

What are the World Nomad Games?

- The **World Nomad Games (WNG)** are an international sporting and cultural event focused on the **traditional games and practices of nomadic peoples**.
- Unlike conventional sporting events dominated by modern Olympic disciplines, the Games seek to preserve and showcase **ancestral sports, indigenous traditions and nomadic cultural heritage**.
- The 2026 edition features **43 sporting disciplines**.

Origin of the Nomad Games

Bishkek Declaration, 2012

The idea emerged from the **Bishkek Declaration of 2012**, signed by:

- **Kyrgyzstan**
- **Azerbaijan**
- **Kazakhstan**
- **Turkey**

The declaration emphasised solidarity based on the **shared history, traditions, language and culture of Turkic peoples** and supported the revival of traditional practices through regular Nomad Games.

Evolution of the Games

Year	Host
2014	Kyrgyzstan
2016	Kyrgyzstan
2018	Kyrgyzstan
2022	İznik, Türkiye
2024	Astana, Kazakhstan
2026	Kyrgyzstan

The first edition in **2014** brought together athletes from **19 countries**.

Who are the Turkic Peoples?

- Turkic peoples are distributed across **West, Central, East and North Asia**, as well as parts of Europe.
- Historically, several groups evolved into **nomadic pastoral communities of the Eurasian steppes**.
- Activities such as:
  - **Horse riding**
  - **Archery**
  - **Falconry**
  - **Wrestling**
- were closely connected with everyday life and survival.

Over time, these practices developed into **traditional competitive sports**.

Why were the Games Created?

- Kyrgyzstan, after gaining independence in **1991**, sought to revive indigenous traditions that were increasingly threatened by:
  - Globalisation
  - Modern sedentary lifestyles
  - Decline of traditional knowledge
- The Games therefore serve both **sporting and cultural objectives**.

What Makes the World Nomad Games Different?

1. Traditional Sports over Conventional Olympic Events

The Games focus on **ancestral sporting practices** rather than primarily on standard Olympic disciplines. Examples include:

- Traditional wrestling
- Horse-based competitions
- Archery
- Board and strategy games
- Strength competitions

2. Cultural Heritage

- The event combines **sport with music, festivals, crafts, traditional knowledge and cultural exchange**.
- Thus, it functions as a broader celebration of **civilisational heritage**, rather than simply an athletic competition.

3. Revival of Endangered Traditions

The Games help preserve indigenous practices that are vulnerable to disappearing because of:

- Modernisation
- Sedentary lifestyles
- Global cultural homogenisation

India's Participation

The 2026 edition has India's **largest-ever contingent** at the World Nomad Games.

Indian Contingent

87 members, comprising:

- **73 athletes**
- **10 cultural representatives**
- **4 participants in the scientific programme**

Sporting Participation

India is participating in:

- **Belt Wrestling**
- Traditional wrestling:
- Horse-riding and equestrian events:
- **Archery**
- Board and strategy games:

Cultural and Scientific Programmes

The World Nomad Games are not limited to sporting competitions.

Cultural Programme

The UNESCO-recognised cultural programme includes:

- **Echo of Nomads**
- **Nomad Fest**
- **Heritage of Nomads**
- **Art Lab**
- **Ethno-Bazaar**

These activities showcase traditional **arts, crafts, customs and cultural practices**.

Significance for India

India's participation goes beyond sports and reflects its broader engagement with **Central Asia**.

1. Cultural Diplomacy: *Participation helps strengthen India's cultural connections with* ***Central Asian countries*** *through shared traditions and civilisational exchanges.*

2. Central Asian Engagement

India has sought deeper relations with Central Asia due to:

- **Regional security**, particularly after the Taliban takeover of Afghanistan
- Countering China's growing influence
- Connectivity initiatives such as the **International North-South Transport Corridor (INSTC)**
- **Energy requirements**

3. Soft Power: *Showcasing India's own traditional sports and cultural practices provides an avenue for strengthening* ***India's soft power****.*

4. Indigenous Heritage: *Participation also creates opportunities to promote India's own diverse traditions, including* ***traditional wrestling, equestrian practices, archery and indigenous games****.*

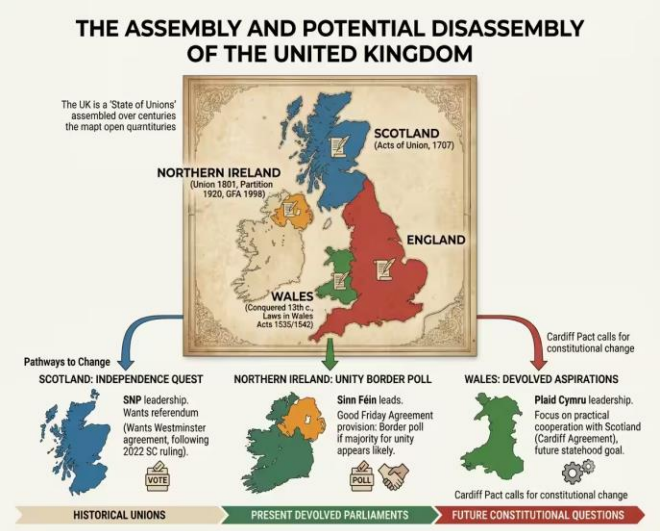
UK Constitutional Referendums and Devolution



Why in News?

- Scotland, Wales and Northern Ireland have jointly called for the UK government to **"prepare, plan and facilitate" constitutional change** in the three nations.
- The move has brought the issue of **UK territorial unity and possible constitutional referendums** back into national politics.

Key Developments



- **Scotland, Wales and Northern Ireland** signed a **Memorandum of Understanding (MoU)** in Cardiff.
- They are seeking greater constitutional change and the possibility of future **referendums**.
- The three devolved governments are led by parties that support greater autonomy or separation from the UK:
  - **Scotland:** Scottish National Party (SNP) – supports Scottish independence.
  - **Wales:** Plaid Cymru – supports Welsh independence.
  - **Northern Ireland:** Sinn Féin – supports Irish reunification.
- UK Prime Minister **Andy Burnham** has stated that there is currently **no consensus for another Scottish independence referendum**.
- He also referred to the **Good Friday Agreement (1998)** in relation to Northern Ireland.

Scotland

- Scotland held an **independence referendum in 2014**.
- Result:
  - **55% – No** to independence.
  - **45% – Yes** to independence.
- In **2022**, the UK Supreme Court ruled that the **Scottish Parliament cannot hold an independence referendum without the consent of the UK Parliament**.

Northern Ireland

- Northern Ireland has a different constitutional arrangement from Scotland and Wales.
- The **Good Friday Agreement, 1998** provides the framework for Northern Ireland's constitutional status.
- It allows a referendum on Irish reunification if there is sufficient basis to believe that a majority may favour leaving the UK and joining a united Ireland.
- Northern Ireland's earlier major constitutional votes include:
  - **1973 Border Poll:** UK or united Ireland.
  - **1998 Referendum:** Approval of the Good Friday Agreement.

Wales

- Wales has held **three referendums**, mainly related to devolution.

- **Plaid Cymru** supports greater Welsh autonomy and independence.
- The Welsh legislature is known as the **Senedd**.

Referendums in the UK

- The UK has **no single written constitutional document** and has **no permanent procedure for holding a nationwide referendum**.
- Each referendum generally requires **separate legislation passed by Parliament**.

Three UK-wide Referendums

Year	Issue	Result
1975	Whether to remain in the European Communities	Remain
2011	Alternative Vote system for parliamentary elections	Rejected
2016	Whether to remain in the European Union	Leave

1975 Referendum

- Held on **5 June 1975**.
- Voters decided whether the UK should remain in the **European Communities**, the predecessor of the European Union.
- The government officially supported remaining.

2011 Referendum

- Asked whether parliamentary elections should use the **Alternative Vote (AV)** system.
- Voters rejected the proposal.

2016 Brexit Referendum

- Asked whether the UK should remain in the **European Union**.
- Voters chose **Leave**.
- The UK formally left the EU in **2020**.
- Prime Minister **David Cameron**, who had supported Remain, resigned after the result.

Legal Framework for UK Referendums

Political Parties, Elections and Referendums Act (PPERA), 2000

- Passed under the government of **Tony Blair**.
- Established the **Electoral Commission**.
- Created rules for regulating elections and referendums.
- However, it did **not** create an automatic mechanism for holding a national referendum.
- Parliament must still pass **specific legislation** to authorise each UK-wide referendum.

Major Acts

- **Referendum Act 1975** → European Communities referendum.
- **Parliamentary Voting System and Constituencies Act 2011** → Alternative Vote referendum.
- **European Union Referendum Act 2015** → Brexit referendum.

Devolution and Referendums

- In **1997**, Parliament passed the **Referendums (Scotland and Wales) Act**.
- It enabled referendums on creating:
  - **Scottish Parliament**
  - **Welsh Assembly**
- The Labour government subsequently held major **devolution referendums** in Scotland, Wales and Northern Ireland.

Are UK Referendums Legally Binding?

- UK referendums are generally **advisory rather than legally binding**.
- Parliament remains **sovereign**.
- Therefore, Parliament retains the legal power to:
  - implement the result,
  - amend the resulting legislation, or
  - repeal it later.
- However, a referendum result can create **strong political pressure** on the government.

Example: Brexit

The 2016 Leave vote was followed by:

- triggering of **Article 50**,
- parliamentary legislation,
- and ultimately the UK's withdrawal from the EU in **2020**.

Key Constitutional Point

- The UK is a **unitary sovereign state with devolved governments**, rather than a federation.
- ***Devolved Governments***
  - **Scotland**
  - **Wales**
  - **Northern Ireland**
- They have their own legislatures and governments with powers transferred from Westminster.
- However, **Westminster/UK Parliament remains sovereign** under the UK's constitutional system.

Malacca-Singapore Model for Resolving the Strait of Hormuz



The **Straits of Malacca and Singapore** offer an important example of how littoral states, user countries and major powers can develop arrangements for the safe passage of ships through strategically important waterways. The experience may provide useful lessons for the **Strait of Hormuz**, although the security concerns in the two regions are different.

Why in News?

- The continuing crisis in the **Strait of Hormuz** has raised questions about how the waterway could be reopened and how safe navigation could be maintained.
- The **Malacca-Singapore Straits** provide a possible reference point because their governance evolved through negotiations among Indonesia, Malaysia and Singapore, alongside the interests of major maritime powers and international shipping.
- However, the two situations are not identical. While the Malacca-Singapore arrangement focused heavily on **navigation safety and environmental concerns**, the central concern in Hormuz is **Iran's security**.

Malacca-Singapore Straits: Geographic Importance

- The **Strait of Malacca** extends for around **800 km** between the Malay Peninsula and Indonesia's Sumatra island.
- It connects the **Andaman Sea** with the **Strait of Singapore**.
- The **Strait of Singapore**, around **105 km long**, forms the eastern continuation of the Malacca Strait and connects it to the **South China Sea**.
- Together, the two waterways form an important maritime route connecting major parts of the Indian and Pacific Ocean regions.

A Territorial Turning Point

- The status of the Straits underwent a major change during the 20th century.
- They were once considered **"international"** in the sense that they were treated similarly to the high seas, over which no country exercised territorial claims.

Indonesia's Position

- After decolonisation, Indonesia became concerned about the security and territorial integrity of its many islands.
- In **1957**, Indonesia declared that all waters **"surrounding, between and connecting the islands"** constituted Indonesian waters.
- As the **United Nations Convention on the Law of the Sea (UNCLOS)** was being formulated, Indonesia argued that its territorial waters should extend **12 nautical miles** from its outermost islands.

Malaysia's Position

- Malaysia also moved towards a **12-nautical-mile territorial sea**.
- Despite its earlier armed conflict with Indonesia over Borneo in 1963, Malaysia chose to work with Jakarta on the Straits through:
    - Bilateral treaties
    - Joint naval patrols
    - Cooperation on the management and security of the Straits

This cooperation continues to the present.

Territorial Waters and Passage Rights

- At their narrowest points, the Straits are considerably less than **24 nautical miles wide**.
- Once Indonesia and Malaysia claimed **12-nautical-mile territorial seas**, their territorial waters met in the middle.
- As a result, there was no remaining strip of **high seas or exclusive economic zone (EEZ)** between them.
- Under the customary law of the period, the Straits therefore became territorial seas.

- Foreign vessels had the right of **"innocent passage"**, although Indonesia or Malaysia could suspend this right for security reasons. The arrangement also excluded submerged submarines.

The 1971 Joint Statement

In **1971**, Indonesia, Malaysia and Singapore issued a joint statement proposing a **coordinating body** involving representatives of the three countries to administer the Straits. Singapore, being highly dependent on trade and shipping, did not fully agree with declaring the Straits **"not international"**.

- However, it joined Malaysia in supporting cooperation on the **safety of navigation**.

This marked an important attempt to balance:

- **Territorial sovereignty**
- **Freedom of navigation**
- **Maritime security**
- **Commercial shipping interests**

Role of the Great Powers

The Malacca-Singapore issue also involved major powers.

Japan

- Japan was an important participant through the **Japan-funded Malacca Strait Council**.
- Instead of seeking an internationalised regime, Japan supported cooperation with the three littoral states.

United States and Soviet Union

- Interestingly, the **United States and Soviet Union**, despite being rivals in other areas, shared an interest in maintaining the Straits as an international maritime route.
- Their objective was to preserve the right of **"continued, politically uncluttered transit"** for ships.
- This demonstrated that major powers could have a common interest in maintaining safe maritime transit even when their broader strategic interests differed.

UNCLOS and the Concept of Transit Passage

During the final stages of UNCLOS negotiations in the 1970s, the **United Kingdom introduced the concept of "transit passage"**. This applied to straits connecting the high seas or EEZs.

- Transit passage provided a right of transit in a **"continuous and expeditious"** manner.
- It went beyond the earlier concept of innocent passage because it also applied to **warships**.
- Indonesia accepted this formulation with reservations and linked its acceptance to greater security for its archipelago, which UNCLOS addressed separately.

Malaysia's concerns focused on:

- **Environmental safety**
- **Insurance requirements**
- **Permissible vessel draught**

The 2007 Cooperative Mechanism

In **2007**, Indonesia, Malaysia and Singapore, working with the international community, established a **Cooperative Mechanism**. It built on a traffic separation scheme similar to one that **Iran and Oman had agreed upon for the Strait of Hormuz in the 1960s**.

A key element was financial cooperation between:

- Littoral states
- User states
- Shipping industry
- Other interested stakeholders

The funds supported:

- **Aids to navigation**
- **Hydrographic surveys**
- **Safety projects**

Aids to Navigation Fund

The **Aids to Navigation Fund** receives voluntary contributions from non-profit organisations, industry stakeholders and states interested in the safe and efficient use of the Straits.

The contributions are **not treated as tolls**.

The fund is administered on a rotational basis by a committee consisting of representatives of:

- **Indonesia**
- **Malaysia**
- **Singapore**
- Contributing stakeholders

The three littoral states do **not impose fees or tolls** on ships exercising their right of transit passage.

The Geographic Parallel with Strait of Hormuz

- The **Strait of Hormuz** has a geographic similarity with the Malacca-Singapore Straits.
- The territorial waters of **Iran and Oman intersect**, meaning that sections of Hormuz fall within their territorial waters.

- This creates a situation where questions of **territorial sovereignty and international navigation rights** intersect.

Iran's Position

- In **1993**, Iran, which has not ratified UNCLOS, passed a law requiring foreign warships to obtain its authorisation to pass through the Strait.
- This remains a major point of disagreement.

Gulf Cooperation and Regional Interests

The Persian Gulf has experienced both **conflict and cooperation** among regional countries.

For example:

- The **United Arab Emirates** has been among Iran's leading trading partners.
- **Qatar** has supported Iran-Oman talks.
- Qatar has also proposed the **Malacca-Singapore Straits** as a possible model for Hormuz.

These examples indicate that regional states have economic and strategic interests in maintaining stable maritime connectivity.

Why the Malacca Model Cannot Be Directly Replicated

Although there are clear technical similarities, the geopolitical circumstances are different. The Malacca-Singapore arrangement developed while **UNCLOS itself was being negotiated and implemented**. This allowed different countries to negotiate trade-offs within a broader international framework governing the world's oceans.

- In contrast, the central concern in the Strait of Hormuz is **Iran's security**.
- There is also an additional complication: even if Gulf countries agree on a common framework, the **United States may not necessarily accept it**.
- According to the source, Iran and Oman have apparently agreed on a framework for reopening the Strait, but the Strait has **not yet been reopened**, and the United States has not accepted the arrangement.

Malacca-Singapore vs Strait of Hormuz

Aspect	Malacca-Singapore Straits	Strait of Hormuz
Key littoral states	Indonesia, Malaysia, Singapore	Iran, Oman
Territorial waters	Territorial waters of littoral states intersect	Iranian and Omani territorial waters intersect
Major concern	Navigation safety and environment	Iran's security
International framework	Developed alongside UNCLOS	Iran has not ratified UNCLOS
Passage framework	Transit passage under UNCLOS	Passage remains contested
Cooperation	Littoral states + user states + industry	Iran-Oman discussions
Financial mechanism	Aids to Navigation Fund	No comparable mechanism mentioned
Major-power role	Japan, U.S. and Soviet Union participated in different ways	U.S. has not accepted the reported arrangement

Lessons from the Malacca-Singapore Model

The experience of the Malacca-Singapore Straits highlights several elements that could be relevant to Hormuz:

- **Cooperation among littoral states** can help manage strategically important waterways.
- **User states and shipping industries** can contribute to navigation and safety infrastructure.
- **Traffic separation schemes** can reduce risks to shipping.
- **Joint mechanisms** can balance territorial interests with commercial navigation.
- **International cooperation** can support hydrographic surveys and navigation infrastructure.
- Agreements require consideration of both **regional security concerns and international shipping interests**.

However, the political and security context of Hormuz is different, particularly because **Iran's security concerns** are central to the dispute.

Conclusion

The Malacca-Singapore Straits demonstrate how a strategically important waterway can move from territorial disagreement towards a system based on **cooperation, navigation rights and shared responsibility for maritime safety**. The experience provides a possible reference for the **Strait of Hormuz**, particularly in areas such as traffic management, navigation safety and cooperation among littoral and user states.

India-New Zealand Free Trade Agreement (FTA)



The **India-New Zealand Free Trade Agreement (FTA)** is set to come into force on **October 20, 2026**. The agreement provides **duty-free access for 100% of India's exports to New Zealand** and aims to strengthen trade, investment and mobility between the two countries. Bilateral goods trade, currently around **$1.1–1.3 billion**, is targeted to double by 2030.

Why in News?

India and New Zealand have concluded a Free Trade Agreement that will come into force on October 20, 2026. The agreement is significant for expanding India's export opportunities and creating alternative markets for Indian businesses.

- India has secured **100% duty-free access** for its exports to New Zealand.
- Bilateral trade is targeted to **double by 2030**.
- India has kept several **sensitive sectors**, particularly dairy, outside tariff concessions.
- New Zealand has committed to facilitate **$20 billion of investment in India over 15 years**.
- The agreement also provides concessions related to **visas for Indian workers and students**.

Key Trade Provisions

The FTA provides Indian exporters with greater access to the New Zealand market. This is particularly important for **MSMEs**, which form a significant part of India's exporting base.

- Indian exports will receive **duty-free access across 100% of export lines**.
- Indian products such as **textiles, pharmaceuticals, engineering goods, automobiles and auto components** are expected to benefit.
- India aims to increase bilateral trade significantly by 2030.
- The agreement can provide Indian exporters with an additional market amid uncertainties in global trade.

Major Indian Export Sectors

- **Textiles make up about 14% of India's exports,** while pearls and semi-precious stones constitute another **5%** or so.
- On the capital-intensive side, one-third of India's exports are pharmaceuticals, parts of nuclear reactors, vehicular parts, mineral fuels, electrical machinery, and iron and steel.

Protection of Sensitive Sectors

India has maintained protection for sectors considered sensitive to domestic producers.

- **Dairy sector** has been excluded from the tariff concessions.
- Nearly **30% of India's import tariff lines** have been kept outside tariff concessions.
- This allows India to protect vulnerable domestic sectors from sudden import competition.
- Agriculture remained one of the most sensitive areas during negotiations.

New Zealand is a major agricultural exporter with strong capabilities in **dairy and horticulture**. India has therefore continued its approach of protecting sensitive agricultural sectors while seeking greater access for its exports.

Investment Commitments

The agreement also includes provisions to encourage greater investment between the two countries.

- New Zealand has committed to facilitate **$20 billion of investment in India over 15 years**.
- Greater foreign investment can support **capital formation, employment and industrial development**.
- Investment inflows can also help India manage its **balance of payments** and strengthen productive capacity.

Labour Mobility and Education

The FTA includes concessions related to the movement of Indian workers and students.

- Indian workers will receive improved opportunities through **visa-related provisions**.
- Students can benefit from easier mobility arrangements.
- Such provisions are significant as several developed countries have tightened rules relating to foreign workers.
- Greater mobility can strengthen **people-to-people relations and skill exchange**.

India-New Zealand Bilateral Relationship

India and New Zealand share historical links through the **Commonwealth**, parliamentary democracy and growing economic relations. However, economic engagement between the two countries has traditionally been smaller than India's trade relations with several other major partners in the Indo-Pacific.

Trade and Economic Ties

Bilateral trade between India and New Zealand stood at around **$1.3 billion in 2024-25**.

India's major exports to New Zealand:

- Pharmaceuticals
- Engineering goods
- Textiles
- Ceramics
- Carpets
- Automobiles
- Auto components

New Zealand's major exports to India:

- Agricultural products
- Timber
- Wool
- Specialised manufactured goods

New Zealand currently imposes tariffs of up to **10%** on several Indian products, including textiles, carpets, ceramics, automobiles and auto components. The FTA provides greater market access for these sectors.

Agriculture and Sensitive Sectors

Agriculture has remained a major area of sensitivity in India-New Zealand trade negotiations.

- New Zealand has a highly competitive **dairy and agricultural sector**.
- India has continued to protect its domestic dairy industry.
- Dairy has therefore been excluded from the FTA's tariff concessions.
- Cooperation may also expand in areas such as **kiwifruit farming and apiculture** through technology and knowledge exchange.

MSMEs and Export Diversification

The FTA is particularly relevant for **Micro, Small and Medium Enterprises (MSMEs)** involved in international trade.

- A large number of Indian exporters are MSMEs.
- Easier market access can reduce tariff-related costs.
- Access to additional markets can help exporters diversify their customer base.
- Alternative export destinations can become important when global tariffs, geopolitical tensions or disruptions in trade routes affect existing markets.

People-to-People and Diaspora Links

People-to-people relations form another important part of India-New Zealand ties.

- The **Indian community is the third-largest ethnic group in New Zealand**.
- Indian professionals work in areas such as **IT, healthcare and engineering**.
- Cricket and Commonwealth connections provide additional social and cultural links.
- Greater student and worker mobility can further strengthen these relations.

Significance for India

The agreement can contribute to India's broader strategy of **export diversification and trade expansion**.

- Provides **100% duty-free access** for Indian exports to New Zealand.
- Creates additional opportunities for Indian **MSMEs and exporters**.
- Supports diversification of India's export destinations.

- Encourages greater **foreign investment** into India.
- Provides new opportunities for Indian workers and students.
- Protects sensitive sectors such as **dairy**.
- Strengthens India's economic engagement in the **Indo-Pacific region**.

Major Challenges

Despite the opportunities created by the FTA, several challenges remain.

- **Small trade base:** Bilateral trade is still relatively small compared with India's overall external trade.
- **Agricultural competition:** New Zealand's competitive agricultural sector can create pressure on Indian producers.
- **Market utilisation:** Indian exporters need to effectively use the tariff preferences provided by the agreement.
- **Standards and regulations:** Meeting foreign quality and technical standards can remain difficult for smaller exporters.
- **Logistics:** Distance between the two countries can increase transportation costs.
- **Global trade uncertainty:** Changes in tariffs and trade policies in major economies can continue to affect Indian exporters.

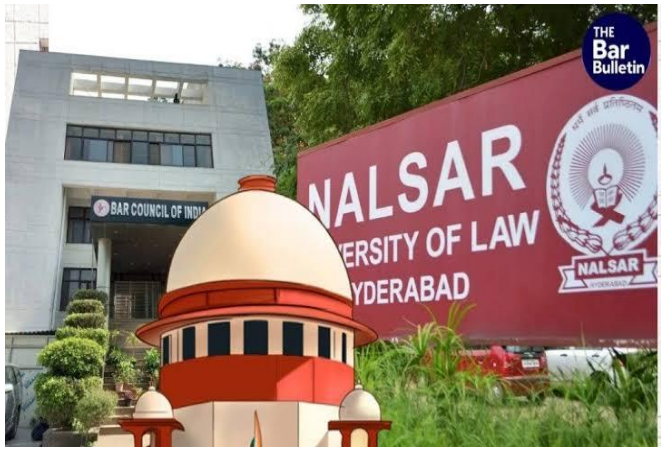
Conclusion

The India-New Zealand FTA provides India with **greater market access, investment opportunities and mobility provisions** while protecting sensitive sectors such as dairy. Its importance goes beyond the current size of bilateral trade, as it can help Indian exporters diversify markets and strengthen their presence in the Indo-Pacific. The long-term benefits will depend on effective implementation and the ability of Indian businesses, particularly MSMEs, to make full use of the agreement.

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Indian Polity & Governance

Supreme Court Limits BCI's Disciplinary Jurisdiction Over Law Students



Why in News?

- The **Supreme Court** recently ruled that the **Bar Council of India (BCI)** and its **Chairperson** do not have the jurisdiction to **discipline or penalise law students**.
- The ruling clarifies the scope of the BCI's disciplinary powers.

About Bar Council of India

- The **Bar Council of India (BCI)** is a **statutory body** established by Parliament.
- It regulates and represents the **legal profession in India**.
- It was established under the **Advocates Act, 1961**.
- Its creation followed the recommendations of the **All India Bar Committee**.

Main Objective

- The primary objective of the BCI is to safeguard the **rights, interests and privileges of advocates** across India.

Functions of BCI

1. Professional Regulation

- Prescribes standards of **professional conduct and etiquette** for advocates.
- Exercises **disciplinary jurisdiction over the legal profession**.

2. Legal Education

- Lays down standards for **legal education**.
- Recognises universities whose **law degrees qualify students for enrolment as advocates**.

3. Welfare Measures

- Supports welfare schemes for **economically weaker advocates**.
- Also supports **physically handicapped advocates**.

4. All India Bar Examination

- Conducts the **All India Bar Examination (AIBE)**.
- Successful candidates receive a **Certificate of Practice**, allowing them to practise law in India.

5. Recognition of Foreign Legal Qualifications

- Recognises certain **foreign law qualifications on a reciprocal basis**.
- This facilitates admission as an advocate under the **Advocates Act, 1961**.

Composition of BCI

- The BCI consists of:
  - Members elected from **State Bar Councils**
  - **Attorney General of India**
  - **Solicitor General of India**, who are members **ex officio**
- Members of State Bar Councils are elected for a **five-year term**.
- The BCI elects its own:
  - **Chairman**
  - **Vice-Chairman**
- The Chairman and Vice-Chairman serve for **two years**.

Uniform Civil Code (UCC)



Why in News?

The debate around the **Uniform Civil Code (UCC)** has gained momentum as UCC Bills passed by **Assam, Gujarat and Madhya Pradesh** are awaiting **Presidential assent**, while **Uttarakhand has had a UCC in force since January 2025**.

What is a Uniform Civil Code?

- **UCC** proposes a **common set of civil laws** for all citizens, irrespective of religion or community.
- It would cover matters such as:
  - **Marriage**
  - **Divorce**
  - **Adoption**
  - **Maintenance**
  - **Inheritance**
  - **Succession**
  - **Custody**
- **Article 44** of the Constitution directs the State to endeavour to secure a **Uniform Civil Code** throughout India.
- Article 44 is part of the **Directive Principles of State Policy (DPSP)**.
- Under **Article 37**, DPSPs are **non-justiciable**, meaning they cannot be directly enforced by courts.

Current Status of Personal Laws in India

- **Hindus, Buddhists, Jains and Sikhs:** Broadly governed by the **Hindu Code Bills of 1955–56**.
- **Muslims:** Personal laws are mainly based on **Shariat**, including the **Muslim Personal Law (Shariat) Application Act, 1937**.
- **Christians:** Governed by laws such as the **Indian Christian Marriage Act, 1872** and **Indian Divorce Act, 1869**.
- **Parsis:** Governed by the **Parsi Marriage and Divorce Act, 1936**.
- **Tribal communities:** Customary practices receive constitutional protection through provisions such as the **Fifth and Sixth Schedules** and **Article 371**.
- **Special Marriage Act, 1954:** Provides a secular legal framework for marriage outside personal laws.

Arguments in Favour of UCC

- **Gender Justice:** Can provide uniform rights in areas such as **inheritance, divorce, marriage and guardianship**.
- **Equality:** Civil rights would be based on **citizenship rather than religion**.
- **National Integration:** Common civil standards could reduce differences based on personal laws.

- **International Commitments:** UCC can support India's commitments to **equality and non-discrimination** under instruments such as **ICCPR** and **CEDAW**.

Concerns Regarding UCC

- **Religious and Cultural Diversity:** A uniform law may raise concerns about India's pluralistic traditions.
- **Minority Concerns:** Lack of broad consensus could create fears of **majoritarian imposition**.
- **Tribal Customs:** A common code may conflict with **tribal customary practices**, particularly in protected areas.
- **Uniformity ≠ Equality:** A uniform law does not automatically guarantee substantive equality. Existing personal laws can also be reformed to remove discriminatory provisions.

Landmark Supreme Court Judgments

- **Shah Bano Case (1985):** The Supreme Court upheld the right of a divorced Muslim woman to maintenance under **Section 125 of the CrPC** and highlighted the need for a UCC.
- **Sarla Mudgal v. Union of India (1995):** The Court dealt with conversion to Islam for contracting a second marriage without dissolving an existing Hindu marriage.
- **Daniel Latifi v. Union of India (2001):** The Court upheld the Muslim Women (Protection of Rights on Divorce) Act, 1986, while ensuring reasonable and fair provision for divorced Muslim women.
- **John Vallamattom v. Union of India (2003):** The Court struck down a discriminatory provision of the Indian Succession Act.
- **Shayara Bano v. Union of India (2017):** The Court declared **Talaq-e-Biddat (instant triple talaq)** unconstitutional.
- **Jose Paulo Coutinho v. Maria Luiza Valentina Pereira (2019):** The Court highlighted **Goa's civil law framework** as an example of uniform civil law with certain limited protections.

Way Forward

- Focus on **gender justice** in marriage, divorce, maintenance and inheritance.
- Ensure reforms follow **constitutional morality and equality**.
- Consider a **consensus-based approach** while respecting legitimate cultural and customary practices.
- Dr. **B.R. Ambedkar** had suggested that UCC could initially be made **voluntary**, with citizens choosing to be governed by it.
- The **21st Law Commission (2018)** stated that a blanket UCC was **"neither necessary nor desirable at this stage"** and emphasised achieving **equality within communities** through reforms in existing personal laws.

Supreme Court on Safeguards Against Illegal Arrest



The Supreme Court, in **Jaskaran Jeet Singh Deol v. State of Punjab (2026)**, strengthened the safeguards under **Article 22** by holding that failure to properly communicate the grounds of arrest can make the **arrest and subsequent detention illegal and unconstitutional**. The Court also laid down safeguards to prevent arbitrary **re-arrest**.

Key Constitutional and Legal Safeguards

- **Article 22(1):** An arrested person must be informed of the **grounds of arrest as soon as possible**. The person also has the right to **consult and be represented by a legal practitioner**.
- **BNSS, 2023:** The **Bharatiya Nagarik Suraksha Sanhita** requires police officers to communicate the relevant details of the **offence** to the arrested person.
- **Release from Illegal Detention:** The Court clarified that release for violation of **Article 22(1)** is **not the same as granting bail**. It is a release from **illegal and unconstitutional**

detention, as the initial arrest itself becomes legally invalid.

Written Grounds of Arrest

- In **Pankaj Bansal v. Union of India (2023)**, the Supreme Court made the communication of **written grounds of arrest** mandatory under the **PMLA, 2002**.
- Later, in **Mihir Rajesh Shah v. State of Maharashtra (2025)**, the requirement was extended across **all statutes**.
- The grounds of arrest must be provided in a **language understood by the arrested person**.

Safeguards Against Re-arrest

- An investigating agency cannot simply **re-arrest a person** who has been released because of a violation of Article 22(1).
- A fresh arrest requires **specific judicial approval from a Magistrate**.
- Any application seeking re-arrest must:
    - Be **endorsed by a superior police officer**.
    - Involve transfer of the investigation to **another investigating officer**.
    - Lead to a **departmental enquiry** against the officer responsible for the original constitutional violation.

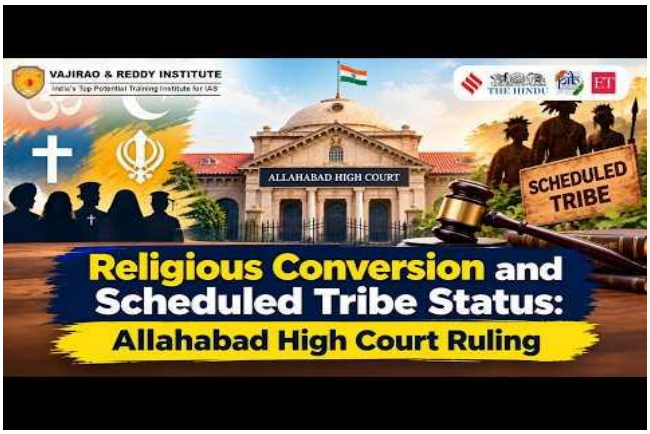
Compensation for Violation of Rights

- The Court held that **High Courts can award compensation** as a public law remedy when **Article 22(2)** is violated.
- Article 22(2) requires an arrested person to be **produced before a Magistrate within 24 hours** of arrest, excluding the time needed for travelling to the Magistrate's court.
- The person can also pursue **private civil remedies** separately.

Significance

- The judgment strengthens **judicial oversight over police powers**.
- It treats **Article 22 safeguards as constitutional guarantees**, rather than merely technical or procedural requirements.
- It reinforces protection of **personal liberty under Article 21** against unlawful State action.

ST Status and Religious Conversion



The **Allahabad High Court** has held that **religious conversion does not automatically end Scheduled Tribe (ST) status**. However, a person seeking to retain ST status after conversion must establish a continuing connection with their **tribal identity, customs, traditions and community life**.

Key Legal Findings

- **Religious Conversion and ST Status:** Relying on the Supreme Court's decision in **Chintad Anand v. State of Andhra Pradesh and Others (2026)**, the Court held that there is **no automatic legal termination of ST status after religious conversion**.
- This differs from **Scheduled Caste (SC) status**, which is governed by the **Constitution (Scheduled Castes) Order, 1950** and is linked to specified religions.

Test of Tribal Identity

- **Article 342** provides the constitutional basis for identifying Scheduled Tribes.
- A converted person claiming continued ST protection must show that they have **not completely broken their tribal identity**.
- Evidence may include:
    - Continued observance of **tribal customs and traditions**.
    - Participation in **tribal rituals and practices**.
    - Continued connection with the **tribal community**.
    - Acceptance by the community as a member of the tribe.
- Therefore, continuation of ST status is treated as a **question of fact**, requiring examination of the person's actual social and cultural connection with the tribe.

Evidentiary Value of Caste Certificates

- A **caste/ST certificate** issued by an executive authority, such as a **Tehsildar**, is not treated as final and conclusive evidence.
- It can be challenged by contrary evidence.
- Long-term **social and religious assimilation into a non-tribal community** may indicate that the person has moved away from their original tribal identity.

Protection of Tribal Land

- The judgment also reinforced restrictions on the transfer of **tribal agricultural land**.
- Under **Section 157-B of the UP Zamindari Abolition and Land Reforms Act, 1950** and **Section 99 of the UP Revenue Code, 2006**, land belonging to an ST person cannot ordinarily be transferred to a **non-ST person**.
- These provisions aim to prevent **alienation and dispossession of tribal land**.

Scheduled Tribes (STs)

- **Article 366(25):** Defines Scheduled Tribes as tribes or tribal communities, or parts/groups within them, that are recognised as STs under **Article 342**.
- **Article 342:** The **President** has the initial authority to notify STs for a State or Union Territory. **Parliament** can subsequently modify the notified list.
- According to **Census 2011**, STs constituted **8.6% of India's population**.
- The **Lokur Committee (1965)** identified criteria traditionally associated with tribal communities, including:
    - **Distinctive culture**
    - **Geographical isolation**
    - **Shyness of contact with the wider community**
    - **Socio-economic backwardness**
    - **Primitive traits**
- Constitutional safeguards for STs include protection relating to **land, political representation and tribal governance** through the **Fifth and Sixth Schedules**.
- The **National Commission for Scheduled Tribes (NCST)** under **Article 338A** provides institutional protection for ST interests.
- The **Forest Rights Act, 2006** recognises certain forest rights of forest-dwelling tribal communities and other traditional forest dwellers.
- India has identified **75 Particularly Vulnerable Tribal Groups (PVTGs)**. They face high levels of **social and economic vulnerability**, along with characteristics such as traditional technologies and geographical isolation, requiring targeted welfare and development measures.

Lottery Regulation in India



Why in News?

The debate over **lottery regulation in India** has gained attention amid concerns that a complete ban may push gambling activity towards **illegal lotteries, matka, satta and offshore betting platforms**.

- It may also reduce **State revenue** and affect the livelihoods of legal lottery vendors.
- The debate focuses on whether **strict regulation instead of complete prohibition** can better balance **consumer protection, accountability and government revenue**.

Constitutional and Legal Framework

Seventh Schedule

- **Union List – Entry 40:** Parliament has exclusive power over **lotteries organised by the Government of India or a State Government**.
- **State List – Entry 34:** State legislatures have authority over **betting and gambling**.
- **State List – Entry 62:** States can impose taxes on **betting, gambling and lotteries**.

Lotteries (Regulation) Act, 1998

- Defines a lottery as a scheme where **prizes are distributed by chance or lot** among people purchasing tickets.
- Prescribes conditions for **State-organised lotteries**, including government-printed tickets.

- States can prohibit the sale of **lotteries organised by other States**.
- The Union Government can prohibit lotteries that do not comply with the prescribed legal requirements.

Lotteries (Regulation) Rules, 2010

- Provide a regulatory framework for **online lotteries**.
- Require the use of **secure lottery software**.
- Prohibit certain **hybrid paper-online formats** and unauthorised online sales.
- States such as **Punjab and Nagaland** have also placed restrictions on online and WhatsApp-based lottery sales.

Taxation

- Lottery winnings are taxed at a **flat 30%** under the Income Tax Act, 1961.
- After adding **4% cess**, the effective rate is **31.2%**.
- **TDS** is deducted before the winnings are paid.
- Lottery winnings are treated as **"Income from Other Sources"** and do not receive standard deductions.
- From **September 2025**, lottery, betting, gambling and related actionable claims attract **40% GST**.

Judicial Position

Skill Lotto Solutions Pvt. Ltd. v. Union of India (2020)

- The Supreme Court held that **lotteries, betting and gambling are actionable claims** and qualify as **"goods" under GST law**.

State of Bombay v. R.M.D. Chamarbaugwala (1957)

- The Supreme Court held that gambling activities fall under the doctrine of ***res extra commercium***, meaning they are activities outside normal trade and commerce.
- Therefore, lottery operators cannot claim a fundamental right under **Article 19(1)(g)** to freely conduct such activities.
- They also cannot rely on **Article 301**, which guarantees freedom of trade and commerce across India.

B.R. Enterprises v. State of U.P. (1999)

- The Supreme Court interpreted **Section 5 of the Lotteries (Regulation) Act, 1998**.
- A State cannot selectively prohibit lotteries organised by other States while continuing to run its **own State lottery**.
- To prohibit lotteries from other States, it must also make its own State **lottery-free**.

Impact of the Ruling

- Destination States generally lack direct administrative control over the way lotteries from other States are marketed and conducted.
- States such as **Tamil Nadu and Karnataka** therefore opted for complete prohibition to prevent external lottery networks.
- However, this also meant giving up potential **lottery revenue and welfare-related proceeds**.
- As of **2023, nine States** were operating lotteries, including **Kerala, Maharashtra, Goa, Punjab and West Bengal**.

Major Concerns with Lottery Regulation

1. Socio-Economic Impact

- Lotteries can disproportionately attract **low-income households**.
- Rapid-draw and instant-win formats can encourage **compulsive gambling and loss-chasing**.
- Excessive participation can contribute to **household debt and financial distress**.

2. Growth of Illegal Gambling

- A blanket ban may not eliminate demand for gambling.
- Instead, activity can shift towards **matka, satta, illegal lotteries and offshore betting platforms**.
- Such markets generally operate without adequate **age verification, financial monitoring or consumer protection**.

3. Loss of Government Revenue

- Prohibition can reduce revenue from **lotteries and GST**.
- Regulated lotteries can generate funds that may be directed towards **public welfare programmes**.

4. Impact on Livelihoods

- Legal lottery distribution provides employment to **large numbers of small and vulnerable vendors**.

- This includes **persons with disabilities, widows and low-income individuals**.
- Sudden prohibition can therefore affect their livelihoods.

5. Different Treatment of Financial Risks

- Critics point to differences in how various forms of financial risk are regulated.
- Activities such as **intraday trading, Futures & Options and crypto-asset trading** are generally addressed through disclosure and regulatory mechanisms.
- Lotteries, which are more accessible to lower-income groups, may face **stricter restrictions or complete prohibition** in some States.
- SEBI data showing that around **9 out of 10 individual F&O traders incur net losses** is part of this broader debate over **risk regulation versus prohibition**.

6. Advertising Regulation

- The **Advertising Standards Council of India (ASCI)** is a **non-statutory self-regulatory body**.
- Its advertising code does not have the same legal force as statutory regulations.
- This can create **enforcement gaps** in regulating lottery advertisements and limiting misleading promotions.

International and Indian Models

Controlled Legality

- Around **80% of countries** permit lotteries under some form of **regulatory oversight**.
- Complete prohibition is more common in countries with particularly restrictive legal or religious frameworks.

Public-Operator Model

- More than **70% of jurisdictions** use a **State-owned or statutory organisation** to operate lotteries.
- Private companies may be used for limited functions such as **technology and logistics**.
- This reduces the risk of excessive influence by private marketing operators.

Multi-Jurisdictional Pooling

- Countries such as the **US, Canada and Germany** allow different jurisdictions to cooperate in areas such as:
    - Prize pooling
    - Technology platforms
    - Regulatory compliance
- Individual States or jurisdictions can still retain their regulatory authority.

Kerala Model

- **Direct Government Oversight:** Kerala conducts lottery draws through the government system, reducing dependence on private intermediaries.
- **Revenue for Welfare:** In **FY 2023–24**, Kerala generated more than **₹2,880 crore in gross lottery proceeds**.
- A part of the revenue supports the **Karunya Benevolent Fund**, which provides healthcare assistance.
- **Social Welfare Distribution:** Lottery distribution rights are reserved for **registered street vendors and persons with disabilities**, providing them with a source of livelihood.

Untouchability and Constitutional Safeguards



Why in News?

A **"purification" (Shuddhikaran) ritual** was reportedly conducted at a public venue in **Haldwani, Uttarakhand**, after it was used by members of the **Dalit community**. The incident has raised questions regarding the constitutional prohibition of **untouchability under Article 17**.

Idea of Purity and Pollution in the Caste System

- Traditional caste hierarchy was closely associated with the ideas of **purity and pollution**.
- Communities placed at the lower end of the caste hierarchy were historically associated with occupations involving **waste, death and animal carcasses**.

- These beliefs contributed to **social exclusion and spatial segregation**, including separate settlements for Dalit communities.
- Contact with lower-caste communities was sometimes considered polluting, resulting in practices such as **purification rituals and social exclusion**.

Historical Perspectives on Untouchability

- **Bhakti Movement:** Saints such as **Ravidas and Kabir** challenged caste-based exclusion by emphasising **spiritual equality and devotion**.
- **Arya Samaj: Swami Dayananda Saraswati** considered untouchability a later social distortion and promoted the **Shuddhi Movement** to reintegrate marginalised communities and converts into the Hindu social fold.
- **Jyotirao Phule:** Through the **Satyashodhak Samaj (1873)**, he connected caste-based exclusion with **social and economic exploitation** and stressed education and empowerment.
- **Sri Narayana Guru:** Challenged caste hierarchy through the **Aruvipuram consecration (1888)** and promoted the principle of **"One Caste, One Religion, One God for Humankind."**
- **Periyar:** The **Self-Respect Movement (1925)** adopted a rationalist and anti-Brahminical approach and opposed caste-based religious authority.
- **Mahatma Gandhi:** Treated untouchability as a **moral wrong** and worked for social reform through the **Harijan Sevak Sangh, temple-entry movements and social integration**.

Constitutional and Legal Safeguards

Article 17

- **Article 17** abolishes **untouchability in all forms**.
- Its enforcement is a **punishable offence**.
- Unlike many fundamental rights, Article 17 can also operate against **private individuals**, not only the State.
- The Constitution does not specifically define "untouchability", allowing the law to address its different forms and manifestations.

Protection of Civil Rights Act, 1955

- The **Untouchability (Offences) Act, 1955**, later renamed the **Protection of Civil Rights Act, 1955**, was enacted to give effect to Article 17.
- It penalises the **practice and propagation of untouchability** and the enforcement of social or religious disabilities based on it.

SC/ST (Prevention of Atrocities) Act, 1989

- **Section 7(1)(d)** deals with insulting or attempting to insult an SC member on the ground of **untouchability**.
- The conduct must have a direct connection with the **social practice of untouchability**, rather than being merely a general insult.

National Commission for Scheduled Castes

- The **NCSC** is a constitutional body established under **Article 338**.
- It monitors safeguards for **Scheduled Castes**, investigates complaints and has powers similar to those of a **civil court** for certain inquiries.

Important Judicial Pronouncements

Surya Narayan Choudhary v. State of Rajasthan (1989)

- The Rajasthan High Court held that requiring Dalits to undergo a **purification ritual before entering a temple** violated **Articles 14, 15 and 17**.
- Such a condition was discriminatory because it was imposed specifically on Dalits.

Hitesh Verma v. State of Uttarakhand (2020)

- The Supreme Court clarified that every insult against an SC/ST person does not automatically attract the **SC/ST (Prevention of Atrocities) Act, 1989**.
- The act must be connected with the person's **caste identity** and meet the requirements of the relevant provision.

Sukanya Shantha v. Union of India (2024)

- The Supreme Court struck down **caste-based discriminatory practices in prison manuals**.
- It held that untouchability is not limited to physical exclusion.
- Discrimination based on a person's **caste, touch or presence**, particularly when linked to notions of **purity and pollution**, can also fall within its broader constitutional concern.

Gunjan @ Girija Kumari v. State (NCT of Delhi) (2026)

- The Supreme Court held that the relevant offences under the **SC/ST (Prevention of Atrocities) Act, 1989** require the act to occur **"in any place within public view."**

Challenges in Eliminating Untouchability

1. Shift Towards Covert Discrimination

- Traditional forms such as denial of access to **temples and public wells** have declined in many places.
- However, discrimination can continue through less visible forms such as:
    - **Residential segregation**
    - Caste-based matrimonial platforms
    - Bias in **employment**
    - Discrimination in **educational institutions**

2. Graded Inequality

- The caste system operates through different levels of **social status and privilege**.
- Discrimination can also exist **within Scheduled Castes**, affecting communities differently.
- In **State of Punjab v. Davinder Singh (2024)**, the Supreme Court held that SCs are **not a completely homogeneous group**.
- The judgment allowed States to **sub-classify SCs** for a more equitable distribution of reservation benefits.

3. Criminal Justice Challenges

- Despite legal safeguards, effective enforcement remains difficult.
- Major concerns include:
    - **Under-reporting or dilution of cases** during FIR registration.
    - **Witnesses turning hostile** due to social and economic pressure.
    - Lack of adequate sensitisation among parts of the **investigating and judicial machinery**.
    - Difficulty in establishing the **caste-based nature of an offence**.

4. Economic Dependence

- **Landlessness and economic dependence** on dominant communities can increase vulnerability to social boycotts and coercion.
- Victims may be pressured into **extra-judicial settlements**, sometimes involving local community bodies.

5. Political Mobilisation and Caste

- Democratic politics has increased the **political representation of marginalised communities**.
- At the same time, caste-based political mobilisation can strengthen existing **caste identities and boundaries**.
- This creates a continuing challenge to the constitutional vision of **social equality and the annihilation of caste**.

Distinguished Jurist and the Supreme Court



Why in News?

A Supreme Court judge, while speaking at a convocation of the **National Law University, Delhi**, highlighted that the Constitution allows a **"distinguished jurist"** to be appointed as a Supreme Court judge. However, this provision has **never been used** since the Constitution came into force.

Constitutional Provision

- **Article 124(3)** lays down three routes for appointment as a Supreme Court judge. A person must be an Indian citizen and must fulfil any one of these conditions:
    - Served as a **High Court judge for at least 5 years**.
    - Practised as a **High Court advocate for at least 10 years**.
    - Been considered by the **President as a "distinguished jurist."**
- The first two routes are regularly used, while the **distinguished jurist route remains unused**.

Who is a Distinguished Jurist?

- The Constitution does **not define** the term.

- It generally refers to a person with exceptional knowledge and contribution in areas such as:
    - **Constitutional law**
    - **Legal theory**
    - **Jurisprudence**
    - **Legal education and research**
- This provision could allow **eminent legal scholars and academics** to reach the Supreme Court even without extensive courtroom or judicial experience.

Historical Background

- The provision was introduced during the **Constituent Assembly debates in May 1949**.
- **H.V. Kamath** argued that the Supreme Court should have access to a wider pool of legal expertise rather than being limited to practising lawyers and judges.
- **Dr. B.R. Ambedkar** supported the idea, while discussing whether the term "eminent" would be more appropriate than "distinguished."
- International examples show that legal academics have also been appointed to apex courts, including **Felix Frankfurter**, a Harvard professor who became a US Supreme Court Justice.

Why Can Distinguished Jurists Be Important?

- **Diversification of the Bench:** Legal scholars can bring perspectives based on research, theory and comparative constitutional studies.
- **Constitutional Expertise:** The Supreme Court frequently deals with complex questions involving **constitutional rights, public law and governance**.
- **Broader Legal Perspective:** Academics may contribute deeper theoretical and interdisciplinary understanding to important constitutional cases.
- **Reduced Dependence on Courtroom Experience:** The provision allows judicial expertise to be supplemented by **strong academic and jurisprudential knowledge**.

Why Has the Provision Remained Unused?

- **Lack of Institutional Mechanism:** There is no clearly developed process for identifying and recommending distinguished jurists.
- **Collegium System:** Supreme Court appointments are generally initiated through the **Collegium**, which traditionally considers serving judges and senior advocates.
- **No Similar High Court Route: Article 217** does not currently provide a distinguished-jurist route for High Court appointments.
- **Bar Council Rules: Rule 49 of the Bar Council of India** restricts full-time law teachers from practising law, creating a separation between legal academia and courtroom practice.
- **Seniority and Succession:** Direct appointment of a younger academic could affect the established **seniority-based succession system** for the Chief Justice of India.
- **Use as Amicus Curiae:** Legal scholars are often involved as **amicus curiae** in complex cases, allowing the Court to use their expertise without appointing them as judges.
- **Financial Disincentive:** Highly successful lawyers and legal experts may face a significant reduction in income after moving to judicial service.

Significance

The unused provision under **Article 124(3)** highlights the Constitution's flexibility in selecting Supreme Court judges. Its possible use could broaden the judicial talent pool by bringing **legal scholarship, constitutional theory and academic expertise** directly into the Supreme Court.

Ladakh and Proposed Article 371(K)

Article No.	Subject-matter
371.	Special provision with respect to the states of Maharashtra and Gujarat
371A.	Special provision with respect to the state of Nagaland
371B.	Special provision with respect to the state of Assam
371C.	Special provision with respect to the state of Manipur
371D.	Special provisions with respect to the state of Andhra Pradesh or the state of Telangana
371E.	Establishment of Central University in Andhra Pradesh
371F.	Special provisions with respect to the state of Sikkim
371G.	Special provision with respect to the state of Mizoram
371H.	Special provision with respect to the state of Arunachal Pradesh
371-I.	Special provision with respect to the state of Goa
371J.	Special provisions with respect to the state of Karnataka

Why in News?

The Union Ministry of Home Affairs (MHA) has proposed a **new "Chapter K" under Article 371** to create a **special governance framework for Ladakh**.

- The proposal aims to provide Ladakh, a **Union Territory**, with an **elected legislative body**.
- The proposed framework is intended to protect **land, culture, language, forests, environment and natural resources**.

Key Features of the Proposal

- **Elected Legislative Body:** A directly elected UT-level body would be created for Ladakh.
- **Legislative Powers:** It would have powers over important subjects such as:
  - **Land**
  - **Culture and language**
  - **Forests**
  - **Environment**
  - **Natural resources**
- It would also exercise other legislative powers available to Union Territories under **Article 240**.
- The proposal is described as a **sui generis** or unique governance arrangement specifically designed for Ladakh.

Background of the Demand

- In **2019**, following the changes related to **Article 370** and the **Jammu and Kashmir Reorganisation Act, 2019**, Ladakh became a **Union Territory without a legislature**.
- This led to concerns regarding:
  - **Land rights**
  - **Employment opportunities**
  - **Demographic changes**
  - **Cultural and tribal identity**
- These concerns contributed to demands for:
  - **Statehood for Ladakh**
  - Constitutional protection through the **Sixth Schedule**

Article 371 and Special Provisions

- **Article 371** and Articles **371A–371J** provide special constitutional arrangements for certain States.
- These provisions protect aspects such as **customs, land ownership, resources and local interests**.
- The framework currently covers **12 States**, including **Nagaland, Mizoram, Assam, Maharashtra and Gujarat**.
- Extending an Article 371-type provision to a **Union Territory** would therefore represent a significant constitutional development.

Article 371(K) vs Sixth Schedule

Article 371(K) Proposal	Sixth Schedule
Special framework proposed specifically for **Ladakh**	Applies to tribal areas of **Assam, Meghalaya, Mizoram and Tripura**
Would create an **elected UT-level legislative body**	Provides **Autonomous District Councils (ADCs)**
Covers land, culture, language, environment and resources	Provides legislative, judicial and administrative powers to ADCs
Designed as a **Ladakh-specific arrangement**	Constitutional framework under **Article 244**

- The **National Commission for Scheduled Tribes (NCST)** had recommended Sixth Schedule protection for Ladakh's tribal-majority population in **2019**.
- The proposed Article 371(K) approach instead seeks a **separate UT-level framework**.

Present Administrative Structure

- Ladakh currently has two **Hill Councils**:
  - **Leh Autonomous Hill Development Council**
  - **Kargil Autonomous Hill Development Council**
- Their powers remain limited compared with the stronger constitutional autonomy available under the **Sixth Schedule**.

Significance

The proposal seeks to create a **customised constitutional governance model for Ladakh**, while giving its people greater elected representation and protection over **land, culture, environment and natural resources**.

Political Funding in India



Why in News?

The debate over **political funding in India** has intensified following allegations of **tax evasion and money laundering** involving **Registered Unrecognised Political Parties (RUPPs)**.

What is the Legal Framework for Political Funding?

- **Political funding** refers to the sources and methods through which political parties and candidates raise money for **elections, campaigns and organisational activities**.
- **Article 324:** Gives the **Election Commission of India (ECI)** superintendence, direction and control over elections.
- **Article 19(1)(a):** The Supreme Court has recognised voters' **Right to Know** about sources of political funding.
    - In **Association for Democratic Reforms v. Union of India (2024)**, the Supreme Court struck down the **Electoral Bond Scheme**.
    - The Court held that anonymous political funding violates voters' **Right to Information** under Article 19(1)(a).
- **Representation of the People Act, 1951:**
    - **Section 29A:** Provides for registration of political parties with the ECI.
    - **Section 29B:** Allows registered political parties to receive voluntary contributions from individuals and eligible companies.
    - **Section 29C:** Requires parties to submit an annual **Contribution Report** disclosing donations above **₹20,000**.
- **Companies Act, 2013:** Section 182 regulates corporate political contributions and disclosure requirements.
- **Foreign Contribution Regulation Act, 2010:** Generally restricts **foreign funding of political parties and candidates**.
- **Income Tax Act, 1961:**
    - **Section 13A:** Provides tax exemption to eligible political parties on specified income and voluntary contributions, subject to statutory conditions.
    - **Sections 80GGB and 80GGC:** Provide deductions for eligible political contributions made by **Indian companies and individuals**, respectively.

Registered Unrecognised Political Parties (RUPPs)

- RUPPs are political parties registered with the ECI but **not recognised as State or National parties**.
- They can receive **tax exemptions**, subject to statutory conditions.
- Their candidates can receive **common election symbols** under applicable rules.
- They can appoint up to **20 star campaigners** during an election campaign.
- RUPPs must maintain details of donors contributing more than **₹20,000** in a financial year.
- They must submit annual contribution reports to the ECI.
- Donations above **₹2,000** must be received through specified banking channels.
- Failure to meet requirements can result in loss of **income-tax exemption**.

Major Concerns with Political Funding

- **Bogus and Inactive Political Parties:**
    - More than **2,800 RUPPs** were registered as of July 2026, while only around **750** contested the 2024 General Elections.
    - Many inactive parties are referred to as **"letter pad parties."**
    - Only **26% of RUPPs** had publicly available annual reports for 2022–23, according to the source.
    - In 2025, the ECI identified **334 RUPPs as non-compliant** with registration requirements.
    - Some inactive entities may potentially be misused for **money laundering** and claiming tax benefits.
- **Limited Powers of the ECI:**
    - The ECI can **register political parties**, but its power to deregister them is limited.
    - In **Indian National Congress v. Institute of Social Welfare (2002)**,

the Supreme Court restricted the circumstances in which the ECI can cancel a party's registration.
    - Deregistration is possible in specific situations such as registration obtained through fraud, failure to uphold allegiance to the Constitution, or declaration of the party as unlawful by the Central Government.
- **No Expenditure Ceiling for Political Parties:**
    - **Rule 90 of the Conduct of Elections Rules, 1961** prescribes expenditure limits for individual candidates.
    - There is **no equivalent statutory ceiling on expenditure by political parties**.
    - This allows parties to spend large amounts at the constituency level while candidate-level expenditure remains capped.
- **Outdated Candidate Spending Limits:**
    - Rising costs, inflation and expensive **digital campaigning** have increased election expenditure.
    - Lower or outdated limits may encourage **under-reporting of expenditure** and the use of unaccounted funds.
- **Corporate-Political Linkages:**
    - Even after the abolition of **Electoral Bonds**, corporate donations can continue through **Electoral Trusts and direct contributions**.
    - Concerns include **lack of transparency, possible quid pro quo arrangements and policy influence**.
- **Weak Auditing Mechanism:**
    - The ECI does not have a strong **in-house forensic and investigative accounting system**.
    - It depends significantly on the **Central Board of Direct Taxes (CBDT)** for verification of tax-related compliance.
    - This can result in **delays in detecting financial irregularities**.

Way Forward

- Strengthen the **financial auditing and investigative capacity of the ECI**.
- Improve transparency in **political donations and party expenditure**.
- Create stronger mechanisms to identify and act against **inactive or fraudulent RUPPs**.
- Review **candidate expenditure limits** according to actual campaign costs.
- Increase transparency in **corporate and electoral trust donations**.
- Develop a clearer framework for regulating **political party expenditure**.

Census 2027: Statistics and Statecraft



Why in News?

The **Census 2027** is scheduled to begin its **population enumeration phase next month**. Compared with the **2011 Census**, the upcoming questionnaire will contain **13 new or modified questions**.

- These include information about a person's:
    - **Father**
    - **Mother**
    - **Places of birth**
- These questions were also included in the **National Population Register (NPR) schedule notified in 2020**.
- Their inclusion has triggered a political debate, with the **opposition questioning the government's motive**.
- The development highlights that a census is not simply a statistical exercise. The questions included in it can reveal:
    - What the State considers important.
    - What policymakers want to measure.
    - What social and economic issues are receiving attention.

- How the government views and understands its population.

How Does a Census Reflect Statecraft?

A census questionnaire can be viewed as a detailed record of a country's **social, economic and political evolution**.

- Every **new question** can indicate an emerging policy priority.
- Every **removed or modified question** can reflect a change in what the State considers important.
- Therefore, census statistics are closely connected with **governance and statecraft**.

What Does the Evolution of India's Census Tell Us?

- India's Census questionnaires have changed significantly over the past **150 years**.
- According to *Population Census in India: A Futuristic Perspective* by **Seema Jain and Madhav Shyam**, these changes reflect India's transformation:
  - From a **colonial possession**
  - To a **developmental state**
  - And later to a society increasingly concerned with:
    - Welfare delivery
    - Urbanisation
    - Financial inclusion
    - Social identity

Census During the Colonial Period

1872 Census

The **1872 Census** is popularly considered the first Census of the Indian subcontinent.

- However, it covered only the areas that were under **British rule**.
- The questionnaire was designed according to **colonial administrative priorities**.
- **Religion, caste and community** formed the major components of enumeration.

Why Were These Categories Important?

The colonial administration considered it important to **understand and categorise Indian society**.

Therefore, census classification became closely connected with **colonial governance**.

- **Educational qualification** was not included in the early Census framework.
- It appeared only in the **1941 Census**.

Post-Independence Census: Shift Towards Development

- A major transformation took place after Independence with the growing importance of **economic planning**.

Role of Five-Year Plans

- The requirements of the **Five-Year Plans** highlighted major gaps in information about:
  - Housing
  - Infrastructure
  - Living standards
- The government therefore needed better and more comparable data about the **material conditions of the population**.

Problem Before 1961

- Until **1951**, different States followed their own **houselisting formats**.
- This made nationwide comparisons difficult.

1961: Uniform Houselisting Schedule

- The introduction of a **uniform houselisting schedule in 1961** was therefore an important change.
- It was not merely administrative standardisation.
- It showed that the State was becoming increasingly interested in **measuring the living and material conditions of its people**.

Evolution of Houselisting Questions

- The development of housing-related questions closely followed India's broader development journey.

1961: Basic Housing

- The 1961 schedule mainly focused on basic housing characteristics such as:
  - **Building material**
  - **Tenure status**
  - **Number of rooms**

1991: Basic Services

- By **1991**, the scope had expanded considerably.
- Questions included:
  - **Drinking water**
  - **Electricity**
  - **Sanitation**
  - **Cooking fuel**
- This reflected increasing attention towards **basic services and rural infrastructure**.

2001 and 2011: Quality of Life

- The focus became broader during the **2001 and 2011 Censuses**.
- Questions covered:
  - **Bathrooms**
  - **Kitchens**
  - **Drainage connections**
  - **Household assets**
  - **Sources of electricity**
  - **Access to banking facilities**
- The Census therefore moved beyond simply **counting houses**.
- It increasingly began measuring the **quality of life and developmental outcomes** of households.

Census and Changing Understanding of Work

- The way the Census defines and records **work** also reflects changes in economic thinking.

Earlier Censuses

- Earlier Censuses used relatively **narrow definitions of work**.
- The focus was mainly on conventional forms of economic activity.

1991: Recognition of Unpaid Labour

- By **1991**, unpaid work performed on:
  - **Family farms**
  - **Family enterprises**
- was recognised as work.
- This represented a broader understanding of economic contribution, particularly in India's **largely agrarian society**.

Main Workers, Marginal Workers and Non-Workers

- The introduction of categories such as:
  - **Main workers**
  - **Marginal workers**
  - **Non-workers**
- showed that the State was increasingly interested in:
  - Labour participation
  - Underemployment
  - Economic contribution
- rather than simply recording a person's occupation.

Census and Migration

- Migration provides another example of how Census questions evolved.
- From **1981**, Census forms began recording:
  - **Place of birth**
  - **Last place of residence**
- These questions helped generate data on **migration patterns** and population movement.

Census and Changing Family and Gender Relations

- The evolution of questions on **family and gender** also reflects changing social attitudes.

Marital Status

- Earlier classifications mainly distinguished between:
  - Married
  - Unmarried
  - Widowed
- Over time, the Census expanded these categories to include:
  - **Separated**
  - **Divorced**
- This reflected changes in social and family structures.

Age at Marriage

- The **2001 Census** introduced the question of **age at marriage**.
- This reflected growing policy attention towards:
- Gender
- Reproductive health
- Social development

Gender Identity

The **2011 Census** also marked an important change.

- It recognised a category **other than male and female**.
- The subsequent adoption of the category **"transgender person"** acknowledged identities that earlier Census frameworks had largely left unrecognised.

Census and Urbanisation

- **Urbanisation** became another important area of concern.
- India's urban development could not be properly understood without accounting for **informal settlements**.

2001 Census

- The Census introduced dedicated enumeration of **slum populations**.

2011 Census

- Coverage of slum populations was expanded further.
- This reflected increasing recognition that:

- Informal settlements were an important part of India's urban landscape.
- **Urban poverty** had become a major development challenge.
- Detailed information on slums was necessary to understand India's changing urban conditions.

- Thus, the decision to collect more detailed slum data itself reflected a shift in **development priorities**.

How India's Census Priorities Have Changed

Period	Major Focus	What It Reflected
1872	Religion, caste and community	Colonial classification and governance
1941	Educational qualification	Expanding social information
1951	State-specific houselisting	Need for better national data
1961	Building material, tenure and rooms	Development planning and housing
1981	Birthplace and last residence	Migration
1991	Basic services and broader definition of work	Infrastructure and economic participation
2001	Age at marriage, slums and wider housing data	Social development and urbanisation
2011	Banking, household assets, gender identity and expanded slum coverage	Welfare, inclusion and quality of life
2027	New and modified questions, including parental details and places of birth	Contemporary demographic and administrative priorities

Census as a Record of State Priorities

- The long-term evolution of the Census shows a clear shift in what the Indian State seeks to understand.

Colonial Phase

- **Religion + Caste + Community**
- Focus on **classification and administration**

Development Phase

- **Housing + Infrastructure + Basic Services**
- Focus on **planning and development**

Economic and Social Phase

- **Work + Migration + Marriage + Gender**
- Focus on **economic participation and social change**

Contemporary Phase

- **Welfare + Urbanisation + Banking + Social Identity**
- Focus on **quality of life, inclusion and welfare delivery**

Conclusion

The history of India's Census questionnaire is closely linked with the **history of the Indian State itself**.

- The colonial Census focused heavily on **classification of Indian society**.
- After Independence, Census data became increasingly important for **Five-Year Plans and development planning**.
- Housing questions expanded from basic physical characteristics to **services and quality of life**.
- Work-related questions evolved to capture **labour participation and underemployment**.
- Migration, family and gender questions began reflecting **changing social realities**.
- Slum enumeration highlighted the growing importance of **urbanisation and urban poverty**.
- Census 2027 continues this evolution through **new and modified questions**.

Thus, the Census does not merely tell us **how many people live in a country**. It also tells us **what the State wants to know about its citizens, what problems it considers important, and how its priorities change over time**.

EDITORIALS

Crux of The Hindu & Indian Express

Indian Polity & Governance

Cauvery Water Dispute: Karnataka Directed to Release 6,000 Cusecs to Tamil Nadu



Why in News?

- The **Cauvery Water Management Authority (CWMA)** has upheld the **CWRC's direction** requiring Karnataka to release **6,000 cusecs of water per day to Tamil Nadu for 15 days**.
- Karnataka had challenged the order, citing **severe drought and inadequate rainfall prospects**.
- Karnataka is considering approaching the **Supreme Court** against the decision.
- The order triggered protests by farmers in **Mandya**, a major Cauvery basin region.

About the Cauvery River

- **Origin:** Talakaveri, Brahmagiri Hills, Karnataka.
- **Length:** About **805 km**.
- **States/UT:** Karnataka, Tamil Nadu, Kerala and Puducherry.
- **Outflow: Bay of Bengal**.

Major Tributaries

- **Left Bank:** Harangi, Hemavathi, Shimsha, Arkavathi.
- **Right Bank:** Kabini, Bhavani, Noyyal, Amaravathi.

About Cauvery Water Management Authority (CWMA)

- Established in **2018** under the **Ministry of Jal Shakti**.
- Created following the **Supreme Court's 2018 judgment** on Cauvery water sharing.
- Main functions:
    - Supervise reservoir operations.
    - Monitor implementation of water-sharing arrangements.
    - Ensure compliance with the prescribed sharing mechanism.

Cauvery Water Regulation Committee (CWRC)

- Functions under the **CWMA**.
- Monitors:
    - Reservoir storage
    - Rainfall
    - River inflows
- Makes recommendations regarding **water releases among basin States**.

Why is the Issue Controversial?

Karnataka's Position

- Karnataka argues that it is facing **severe drought and water shortage**.
- It maintains that further releases would put pressure on its own reservoirs and water requirements.
- The State has questioned decisions being taken by central monitoring bodies without adequately considering **ground-level conditions**.

Tamil Nadu's Position

- Tamil Nadu depends heavily on Cauvery flows for its **downstream water requirements**, particularly agriculture.
- It seeks adherence to the established **water-sharing arrangement**.
- Thus, the dispute reflects the broader challenge of balancing: **Upstream State's water availability + Downstream State's entitlement**

Mekedatu Project

- Proposed by **Karnataka** on the Cauvery near **Mekedatu**.
- Objectives:
    - Supply drinking water to **Bengaluru**.
    - Generate **hydroelectric power**.
- **Tamil Nadu opposes** the project, arguing that it could affect downstream water availability and the existing water-sharing arrangement.

Constitutional & Legal Framework

Article 262

- Provides for Parliament to make laws regarding **adjudication of disputes relating to inter-State rivers and river valleys**.

Inter-State River Water Disputes Act, 1956

- Provides a framework for resolving **inter-State river water disputes**, including through tribunals.

Supreme Court Judgment, 2018

- Modified the **Cauvery Water Disputes Tribunal** award.
- Directed the creation of the **Cauvery Water Management Authority** to implement the water-sharing framework.

Key Challenges

- **Erratic monsoon:** Variable rainfall directly affects reservoir storage and river flows.
- **Competing State demands:** Agricultural, drinking-water and power requirements differ across basin States.
- **Upstream–downstream conflict:** Reservoir control remains a politically sensitive issue.
- **Climate variability:** Increasing rainfall uncertainty can intensify water disputes.
- **Political mobilisation:** Water releases frequently trigger protests and regional sentiments.

Way Forward

- Follow **scientific, real-time assessment** of rainfall, reservoir storage and inflows.
- Strengthen **basin-level water management** rather than State-centric approaches.
- Improve coordination between CWMA, CWRC and basin States.
- Promote **water-use efficiency**, particularly in agriculture.
- Develop long-term strategies for **drought years** instead of relying mainly on ad-hoc release orders.

Appointment of High Court Chief Justice: Role of State Government



Why in News?

- The **Punjab Cabinet** objected to the appointment of **Justice Ashwani Kumar Mishra** as Chief Justice of the Punjab and Haryana High Court.
- Punjab argued that the appointment was notified without adequately considering the **State government's views**.
- The issue raises an important constitutional question: **Does the State government have the power to approve or reject the appointment of a High Court Chief Justice?**

Role of State Government

- The State government has a **consultative role**, but **cannot appoint or veto** the appointment.
- Under **Article 217**, a High Court judge is appointed by the **President** after consultation with:
  - Chief Justice of India (CJI)
  - Governor of the concerned State
- For judges other than the Chief Justice, the **Chief Justice of that High Court** is also consulted.

How Does the State Government Enter the Process?

- Under **Article 163**, the Governor ordinarily acts on the **aid and advice of the State Council of Ministers**.
- Therefore, the State government's views can form part of the **Governor's consultation** with the President.
- However, **State government consent is not mandatory**.
- Article 217 uses **"consultation"**, not "consent" or "approval".
- Therefore: State Government → Consultation → No Veto Power

Evolution of Judicial Appointments

1. First Judges Case – 1981

S.P. Gupta v. Union of India

- Supreme Court held that **"consultation" does not mean "concurrence"**.
- This gave the **Executive greater influence** in judicial appointments.

2. Second Judges Case – 1993

Supreme Court Advocates-on-Record Association v. Union of India

- Established the **Collegium system**.
- Gave **primacy to the judiciary** in judicial appointments.
- The CJI's opinion was required to be an **institutional opinion**, formed with the two senior-most Supreme Court judges.

3. Third Judges Case – 1998

Re: Special Reference No. 1 of 1998

- Further clarified the Collegium system.

For Supreme Court appointments:

- CJI + **4 senior-most Supreme Court judges**

For High Court appointments:

- CJI + **2 senior-most Supreme Court judges**

Attempt to Replace the Collegium

National Judicial Appointments Commission (NJAC)

- In **2014**, Parliament enacted:
  - **99th Constitutional Amendment**
  - **NJAC Act**
- The proposed NJAC included:
  - CJI
  - Two senior-most Supreme Court judges
  - Union Law Minister
  - Two eminent persons

Supreme Court Decision – 2015

Supreme Court Advocates-on-Record Association v. Union of India

- Supreme Court struck down the **99th Amendment and NJAC Act by 4:1 majority**.
- It held that greater executive involvement could compromise **judicial independence**.
- Judicial independence was treated as part of the **Basic Structure** of the Constitution.
- The **Collegium system was restored**.

Present System

Institution	Role
Collegium	Primacy in recommending judicial appointments
CJI	Leads the Supreme Court Collegium
President	Formally appoints High Court judges
Governor	Constitutional consultation channel
State Government	Provides views through the Governor
Union Executive	Processes appointments and formally advises the President
State Government	**No veto power**

Key Constitutional Principle

The present appointment system seeks to balance:

- **Judicial independence**

  ↕

  Executive/State consultation
- The judiciary has **primacy in recommending appointments**, while the executive participates in the constitutional process.

Judicial Integrity and Accountability in India



Why in News?

- Serious allegations have been reported against **Justice Sanjeev Prakash Sharma**, former Acting Chief Justice of the Rajasthan High Court.
- Supreme Court Judge **Justice Sandeep Mehta** reportedly wrote three letters to the CJI seeking his immediate transfer.
- The allegations reportedly include **maladministration, victimisation of judges, favouritism, case allocation issues and nepotism**.
- Justice Sharma has denied the allegations as baseless.

Key Issues Raised

1. Alleged Misuse of Administrative Powers

- As **Master of the Roster**, the Chief Justice has significant powers over allocation of cases.
- The reported allegations include:
  - Improper shifting of cases to a particular Bench.
  - Favouritism towards certain lawyers.
  - Threats of punitive transfers against fellow judges.
  - Nepotism in appointments to Permanent Lok Adalats.

2. Delay in Institutional Response

- Justice Mehta reportedly raised concerns through letters dated **August 2, 10 and 17, 2026**.
- The article questions the reported delay in action despite the availability of allegedly verifiable material.
- Justice Sharma was also approaching retirement on **September 26, 2026**.

3. Rajasthan High Court Controversy

- Lawyers reportedly held a **sit-in protest** at the High Court.
- Justice Sharma subsequently opted out of hearing cases.
- The Supreme Court Collegium later recommended **Justice Sanjay Agrawal** as the new Chief Justice of the Rajasthan High Court.

Why Judicial Integrity Matters?

An independent judiciary requires both:

- **Judicial independence** — freedom from external political or executive pressure.
- **Judicial accountability** — mechanisms to address misconduct and misuse of authority.

A failure to address credible allegations can lead to:

- Loss of public confidence.
- Damage to institutional credibility.
- Perception of unequal treatment.
- Reduced faith in the rule of law.

Existing Accountability Mechanisms

1. Judges (Inquiry) Act, 1968

- Provides the statutory framework for investigation of alleged misconduct or incapacity of higher-court judges.
- The article argues that the mechanism has become **inadequate and practically ineffective**.

2. K. Veeraswami Case, 1991

- The Supreme Court held that prior permission of the **CJI** is required before registering an FIR against a higher judiciary judge.
- This has raised concerns about the difficulty of independently investigating allegations against sitting judges.

3. Impeachment

- **Articles 124(4) and 217(1)(b)** provide for removal of Supreme Court and High Court judges for **proved misbehaviour or incapacity**.
- However, the parliamentary impeachment process is extremely difficult and has had limited practical success.

4. In-House Mechanism

- The Supreme Court introduced an **in-house procedure in 1999** to address complaints against judges.
- The article questions its effectiveness and transparency.

Earlier Instances of Judicial Accountability

- **Justice V. Ramaswami:** During allegations of misconduct, he was advised to stay away from judicial work; after the impeachment motion failed, cases were reportedly not allocated to him.
- **Justice Yashwant Varma:** Following the reported discovery of partly burnt currency notes at his residence, he was transferred and was practically not assigned judicial work.
- These instances demonstrate that the CJI can take **administrative measures** even when formal removal proceedings are not completed.

Structural Concerns

Collegium and Appointments

- The article identifies the absence of clearly defined selection criteria and the interaction between the **Collegium and Executive** as concerns.
- It argues that the present system can be **opaque and difficult to assess objectively**.

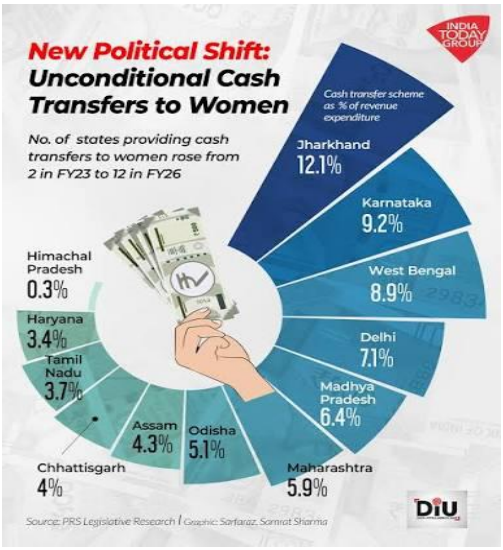
Lack of Effective Investigation

- The absence of an effective, independent mechanism for investigating allegations against higher judiciary judges creates an **accountability gap**.
- Legislative attempts, including the **Judicial Standards and Accountability Bill, 2012**, did not ultimately produce a lasting statutory framework.

Way Forward

- Establish a **credible and transparent mechanism** for investigating complaints against higher-court judges.
- Ensure that allegations are assessed through **due process**, without compromising judicial independence.
- Strengthen transparency in **judicial appointments and administrative decisions**.
- Clearly define procedures for handling credible complaints against sitting judges.
- Ensure timely intervention by institutional authorities where allegations are serious and verifiable.
- Balance **judicial independence with judicial accountability**.

Unconditional Cash Transfers: Welfare Benefits vs Political Costs



Why in News?

- Since **2020**, **Unconditional Cash Transfer (UCT)** schemes have increasingly become an electoral strategy, particularly for **women voters**.
- Despite increasing cash benefits before elections, some incumbent governments implementing such schemes were defeated.
- This highlights the **political costs of targeting and beneficiary selection**.

What are UCTs?

- **Unconditional Cash Transfers** provide direct financial assistance without requiring beneficiaries to meet a behavioural condition.
- They can support women's economic security and partly recognise their **unpaid domestic and care work**.
- According to the source, States were expected to spend around **$18 billion on UCTs in 2025–26**, much of it targeted at women.

Why Governments Use UCTs

- Provide immediate income support.
- Improve women's financial autonomy.
- Recognise unpaid care and domestic work.
- Create a direct connection between welfare delivery and beneficiaries.
- Can become an important electoral instrument.

Major Concerns

1. Fiscal Pressure

- Large UCT commitments may require:
  - **Expenditure switching**
  - Higher fiscal deficits
- This can reduce resources available for:
  - Employment generation
  - Self-employment programmes
  - Productive investment

2. Difficulties in Targeting

Governments often cannot directly observe incomes, particularly among **informal-sector workers**.

Therefore, they use proxy indicators such as:

- Land ownership
- Electricity consumption
- Household assets

This creates two types of errors:

Error	Meaning
Inclusion error	Ineligible households receive benefits
Exclusion error	Eligible households are left out

Political Cost of Targeting

The important issue is that **perceived unfairness can be politically damaging even when administrative rules are correctly followed**.

- An excluded household may believe it deserved the benefit.
- A beneficiary may be viewed by others as undeserving because of apparent affluence.
- Thus, both **actual and perceived targeting errors** can generate dissatisfaction.

Example: Kalaignar Magalir Urimai Thittam

- Initially promised **₹1,000 per month** to women-headed households.
- Fiscal constraints resulted in eligibility restrictions based on factors such as:
  - Income
  - Land ownership
  - Other criteria
- Around **1.13 crore women** were initially covered.
- After complaints, another **16.94 lakh beneficiaries** were added in December 2025.
- Expenditure was **₹13,807 crore in 2025–26**.
- Despite expansion, dissatisfaction reportedly continued.

Other Examples

- **Lakshmir Bhandar:** Faced allegations regarding inclusion of non-residential beneficiaries.
- **Mukhya Majhi Ladki Bahin Yojana:** Faced concerns over inclusion errors.
- **Gruha Lakshmi:** Faced concerns over exclusion errors.

Economics vs Politics

There is an inherent tension:

- **Economic logic:** Target benefits → concentrate scarce resources on the most needy.
- **Political logic:** Broader inclusion → fewer people feel unfairly excluded.
- Hence, **better targeting from an economic perspective may sometimes increase political dissatisfaction**.

UCTs vs Conditional Transfers

Conditional Cash Transfers (CCTs)

- Benefits are linked to desirable outcomes or behaviours.
- This can generate wider developmental benefits.
- Conditionality may also encourage **self-selection**, reducing some targeting-related grievances.

Example: Midday Meal Scheme

- Participation is linked to **school enrolment**.
- It simultaneously promotes:
  - School participation
  - Nutrition
  - Human capital development
- Self-selection can reduce some grievances associated with beneficiary identification.

Way Forward

- Assess UCTs on **fiscal sustainability**, not only electoral popularity.
- Improve beneficiary databases and grievance-redress mechanisms.
- Minimise **inclusion and exclusion errors**.
- Combine cash support with:
  - Employment opportunities
  - Skill development
  - Self-employment
  - Human-capital investments
- Where appropriate, design welfare programmes around **developmental outcomes** rather than cash transfers alone.
- Recognise **political costs alongside economic and social benefits** while designing welfare policies.

Satya Niketan Building Collapse: SC Allows Delhi HC to Continue Monitoring



Why in News?

- The **Supreme Court** has decided not to transfer the **Satya Niketan building collapse case** from the Delhi High Court to itself.
- The Court observed that **"things have started moving"** and therefore the existing proceedings should continue.
- The Delhi High Court will continue monitoring compliance with its directions at **short intervals**.

What Happened?

- A **five-storey building** housing a boys' PG accommodation in **Satya Niketan**, near Delhi University's South Campus, collapsed on **6 September 2026**.
- **7 people died** and **12 were injured**.
- The building owner, his wife and son were arrested.
- **Five MCD officials were suspended** following the incident.

Supreme Court's Approach

- On **8 September**, the Supreme Court had indicated that it could transfer the case to itself if necessary.
- On September 10, it decided against doing so because:
  - Civic authorities had begun taking action.
  - Action against **unauthorised constructions and PG accommodations** had reportedly intensified.
  - The Delhi High Court was already monitoring compliance.

Article 139A: Transfer of Certain Cases

- **Supreme Court's Power to Transfer:** Article 139A empowers the Supreme Court to transfer cases involving the same or substantially the same questions of general public importance from a High Court to itself.
- **Judicial Restraint:** The Supreme Court initially considered invoking this power to withdraw the matter from the Delhi High Court, but **exercised restraint under Article 139A after finding the High Court's monitoring and municipal actions adequate.**

Role of Amicus Curiae

- **Amicus Curiae is Latin term and it means** friend of the court
- An amicus curiae is a person or group that is not part of a lawsuit, but helps the court by giving useful information, expert knowledge, or advice.
- Senior Advocate **Ajit Sinha** was appointed **amicus curiae** in the matter.
- He informed the Court that civic authorities had begun acting against:
    - Unauthorised constructions
    - Unauthorised PG accommodations
    - Structures exceeding four storeys

Administrative Action

According to the proceedings:

- **Building collapse**

  ↓
- **Arrests + MCD suspensions**

  ↓
- **Action against unauthorised constructions/PGs**

  ↓
- **Delhi HC monitoring compliance**

  ↓
- **SC decides not to transfer the case**

Key Significance

1. Judicial Monitoring

- The case highlights the role of courts in ensuring that **civic authorities comply with safety and regulatory directions**.

2. Accountability of Civic Authorities

- Suspension of MCD officials raises questions regarding:
    - Building regulation
    - Enforcement of construction norms
    - Municipal oversight

3. Unauthorised Construction

- The incident brings attention to risks arising from **unauthorised or unsafe buildings**, particularly structures being used for high-density accommodation.

4. Balance Between SC and HC

- The Supreme Court chose not to interfere with the existing proceedings once it found that the **High Court and civic authorities had begun taking effective action**.
- This reflects judicial restraint and respect for the ongoing proceedings before the High Court.

Three-Language Scheme: SC Seeks Clarity on Implementation



Why in News?

- The **Supreme Court** is hearing petitions concerning implementation of the **three-language scheme** under the CBSE.
- The Union government said it has an "issue" with treating **English as a non-native/foreign language**.
- The government also assured the Court that it would quickly consider a **one-time reprieve for the current Class 6 students** from the mandatory third-language Board examination.
- The hearing has been adjourned to **September 17, 2026**.

What is the Issue?

- Under the CBSE framework, the current **Class 6 batch** was expected to face the full implementation of the three-language scheme.
- This includes a **mandatory third-language Board examination in Class 10**, expected by **2031**.
- The Court had earlier asked CBSE to consider exempting this batch from the Class 10 third-language examination as a **one-time relief**.

Supreme Court's Concerns

- The Court has asked the government/CBSE to examine three key issues:

1. One-Time Reprieve

- Whether the present **Class 6 students** should be given one-time relief from the mandatory third-language Board examination.

2. Human Resources

- Whether adequate **teachers and other human resources** can be developed to implement the three-language scheme effectively.

3. Timing of Implementation

- Whether the scheme should begin in **earlier classes**, giving students more time to adapt.

Court's Observation on Language Learning

- The Court indicated that the three-language scheme would eventually have to be implemented.
- However, implementation needs to be **better streamlined**.
- Adequate time should be provided for:
    - **Students to adapt**
    - **Infrastructure to develop**
    - Different education boards to reach comparable levels of preparedness.

Suggested Broad Sequence

- Mother tongue → Indigenous language → Another indigenous/foreign language
- The Court observed that introducing multiple languages at a **younger age** could provide children more time to adapt.

English as a "Native" Language

- Petitioners sought clarity on shifting **English to the non-native/foreign language category**.
- The Union government opposed this proposition and said it had an **issue with treating English as an indigenous language**.
- The government sought additional time to make detailed submissions before the Court.

Implementation Challenges

Teacher Shortage

- A nationwide three-language framework requires sufficient availability of **language teachers** across schools and regions.

Infrastructure Gap

- Schools and different education boards may not have uniform capacity to implement the policy simultaneously.

Student Transition

- Sudden introduction of a mandatory third language at a later stage could increase the academic burden on students.
- Earlier introduction may allow **gradual language acquisition**.

Minority Institutions

- The Supreme Court has also issued notice to the government on petitions filed by **minority schools** concerning implementation of the three-language scheme.

Current Position

Issue	**Present Status**
Three-language scheme	Court says it will eventually have to be implemented
Current Class 6 batch	Possible **one-time reprieve** under consideration
Third-language Board exam	Mandatory implementation currently proposed for Class 10
English classification	**Government has raised an objection**
Teacher availability	Under consideration
Earlier implementation	Court seeking government's response
Minority schools	Petitions under consideration
Next hearing	**17 September 2026**

Sanction for Prosecution of Indian Administrative Service Officers



Why in News?

- The **Central Government** informed the **Madras High Court** that the **Prime Minister's Office (PMO)** is the competent authority to grant statutory sanction for prosecuting

Indian Administrative Service (IAS) officers in criminal cases.

- The clarification came during a case concerning delays in granting sanction to prosecute two IAS officers in a **₹98.25-crore corporation tender irregularities case**.

What is the Issue?

- The case concerns alleged irregularities in contracts awarded by the **Greater Chennai and Coimbatore Municipal Corporations** during **2014–2018**.
- The **Directorate of Vigilance and Anti-Corruption (DVAC)** registered a **First Information Report (FIR)** in **2021**.
- The investigation was subsequently completed.
- However, prosecution of the two IAS officers was delayed because the required **sanction for prosecution** had not been granted.

Who Processes the Sanction?

- According to the Central Government's submission:
    - **Tamil Nadu Government**
    - ↓
    - **Department of Personnel and Training (DoPT)**
    - ↓
    - **Central Vigilance Commission (CVC) — remarks**
    - ↓
    - **Prime Minister's Office (PMO) — sanction**
- The **DoPT** stated that it received thousands of pages of documents from the State Government.
- These documents had to be examined before being sent to the **Central Vigilance Commission (CVC)**.
- After receiving the CVC's remarks, the file is forwarded to the **PMO** for a decision.

What is Sanction for Prosecution?

- **Sanction for prosecution** is the legally required approval before certain public servants can be prosecuted for offences allegedly committed in the course of their official duties.
- Its purpose includes:
    - Protecting public servants from **frivolous or malicious prosecution**.
    - Ensuring that prosecution decisions are based on proper examination of the allegations.
- At the same time, **undue delay** in granting sanction can affect the effective prosecution of corruption cases.

Present Case

- The petition was filed by **Arappor Iyakkam**, an anti-corruption organisation.
- The petition concerns IAS officers **K.S. Kandasamy** and **K. Vijaya Karthikeyan**.
- The broader case primarily concerns former Tamil Nadu Minister **S.P. Velumani**.
- **12 February 2024:** Then Tamil Nadu Legislative Assembly Speaker **M. Appavu** granted sanction to prosecute Mr. Velumani.
- The delay concerning the IAS officers led the organisation to approach the High Court.

Madras High Court's Intervention

- Justice **N. Anand Venkatesh** questioned:
    - Who is the competent authority to grant sanction for prosecuting IAS officers?
    - Why does the sanction process take such a long time?
- The DoPT assured the court that the matter had been given **top priority**.
- It stated that the process would be completed within **two months**.
- The court directed the Joint Secretary to submit an **affidavit explaining the complete sanction process** from November 2025 until the PMO's final decision.
- The case was adjourned to **12 November 2026**.

Key Concerns

- **Delay in prosecution:** Long sanction procedures can delay corruption trials.
- **Administrative accountability:** Excessive procedural delays may weaken accountability of public officials.
- **Document-heavy process:** Large volumes of records can slow decision-making.
- **Balance of interests:** The sanction mechanism must protect honest officials while ensuring that genuine corruption cases are not unnecessarily delayed.

Supreme Court Invokes Article 142 to Quash FIRs Against NEET-UG Protesters



Why in News?

The **Supreme Court** has invoked its extraordinary powers under **Article 142** to quash criminal cases registered against **Gen Z protesters** involved in nationwide demonstrations linked to the **NEET-UG 2026 question paper leak**.

- A **three-judge Bench headed by CJI Surya Kant** directed that the FIRs would not be investigated and would be closed.
- The order applies **across India**, covering States and Union Territories where the protests occurred.

Background of the Case

- Protests associated with the **Cockroach Janta Party (CJP)** were held between **20–25 July 2026** following the NEET-UG 2026 paper-leak controversy.
- FIRs had been registered against protesters for alleged offences including:
  - Rioting
  - Attempt to murder
  - Damage to public property
- The Delhi Police initially pursued the cases but later informed the Supreme Court that it **did not wish to continue with the FIRs**.
- The development came ahead of the proposed **CJP march on 5 September**, and days before the **BRICS Summit scheduled for 12–13 September in Delhi**.

Supreme Court's Directions

1. Quashing of Existing FIRs

- The Court ordered that the relevant FIRs:
  - Would **not be investigated**
  - Would be **closed for all purposes**
- The direction was not restricted to Delhi and extended to **States and Union Territories** where the protests had taken place.

2. No Fresh FIRs for the Specified Protests

- The Centre was permitted to ensure that States and UTs did not register **fresh FIRs** concerning the CJP-led protests conducted between **20 and 25 July**.

3. Exception for Persons with Criminal Antecedents

The Court permitted Delhi Police to register a **fresh and specific FIR** against **2,873 individuals** identified through facial-recognition technology at the Jantar Mantar protest site.

- The persons concerned must be given:
  - A fair opportunity to defend themselves.
  - Protection of their legal rights.
- The fresh proceedings should not automatically prejudice their rights.

4. Compensation for Families

- The Court directed the Centre to formulate a **pan-India policy for compensating families of students who died by suicide following the NEET-UG 2026 paper-leak controversy**.
- The compensation is to be paid within **three months** after formulation of the policy.

CJP Withdraws September 5 March

Following the Court's order:

- **CJP co-convenor Saurav Das** announced that the organisation would withdraw its proposed **5 September march**.
- The decision was based on the Government's assurance regarding closure of the FIRs and the judicial order.
- The development followed discussions between the Government, Delhi Police and representatives of the protesters.

What is Article 142?

- **Article 142** empowers the Supreme Court to pass orders necessary to achieve **"complete justice"** in any matter pending before it.

Key Features

- **Extraordinary power:** Gives the Supreme Court broad discretionary authority to provide effective remedies.

- **Complete justice:** Can be used where ordinary legal remedies may not adequately address the circumstances of a case.
- **Nationwide enforceability:** Orders passed under Article 142 are enforceable throughout **India**.
- **Case-specific:** Its exercise depends upon the particular facts and circumstances before the Court.
- **Constitutional limitation:** It cannot be used to **override substantive law or violate constitutional provisions**.

Article 19 and Right to Peaceful Protest

The Constitution provides the basis for peaceful democratic protest through **Article 19**.

Article 19(1)(a)

Provides citizens with the **freedom of speech and expression**.

This enables citizens to:

- Express opinions
- Criticise government actions
- Voice grievances
- Express dissent

Article 19(1)(b)

- Guarantees the **right to assemble peacefully and without arms**.
- This forms an important constitutional basis for **peaceful demonstrations and protests**.

Reasonable Restrictions

Provision	Permitted Restrictions
Article 19(2)	Restrictions on speech/expression in interests of sovereignty and integrity, security of State, public order, decency, morality, etc.
Article 19(3)	Restrictions on peaceful assembly in interests of sovereignty and integrity and **public order**

Important Limitation

The right to protest **does not include a right to**:

- Use violence
- Destroy public or private property
- Seriously disrupt public order

Thus, constitutional protection is primarily attached to **peaceful dissent**.

Important Supreme Court Cases on Article 142

Case	Significance
Union Carbide Corporation v. Union of India (1991)	Article 142 was used in connection with the **Bhopal Gas Tragedy settlement**, highlighting the Court's power to ensure complete justice.
Vishaka v. State of Rajasthan (1997)	Court laid down the **Vishaka Guidelines** on workplace sexual harassment in the absence of specific legislation.
Supreme Court Bar Association v. Union of India (1998)	Clarified that Article 142 **cannot override substantive law** or be exercised contrary to existing legal provisions.

Delhi HC Adjourns Umar Khalid, Sharjeel Imam Bail Pleas to September 30



The **Delhi High Court** has adjourned the hearing of bail pleas filed by former JNU scholar **Umar Khalid** and activist **Sharjeel Imam** to September 30, 2026. The pleas relate to the case alleging a larger conspiracy behind the **2020 North-East Delhi riots**.

A Bench of Justices **Prathiba M. Singh and Dinesh Bhatt** deferred the proceedings after the prosecution sought an adjournment, informing the court that **Additional Solicitor General S.V. Raju**, appearing for the State, was unwell.

Why in News?

The Delhi High Court on September 21, 2026, adjourned the hearing of the bail pleas of Umar Khalid and Sharjeel Imam.

- The next hearing has been fixed for **September 30, 2026**.
- Both have challenged a trial court order dated **July 4, 2026**, which rejected their bail applications.
- Umar Khalid was arrested in **September 2020**.

- Sharjeel Imam was arrested on **August 25, 2020**.
- Both were arrested under the **Unlawful Activities (Prevention) Act (UAPA)** in connection with the February 2020 riots.

Background of the Case

The case relates to allegations of a **larger conspiracy** behind the communal violence that occurred in parts of North-East Delhi in February 2020.

- The riots took place in **February 2020**.
- The violence left **53 people dead** and more than **700 injured**.
- The case is being investigated by the **Delhi Police Special Cell**.
- The prosecution has invoked provisions of the **UAPA** and offences under the **Indian Penal Code**.
- **Khalid Saifi** and former AAP councillor **Tahir Hussain**, among others, were also booked for their alleged involvement in the larger conspiracy case.

What Happened to the Bail Pleas?

Umar Khalid and Sharjeel Imam approached the Delhi High Court after a trial court rejected their bail applications on **July 4, 2026**. The trial court had held that it was bound by the **Supreme Court's January 5, 2026 order**, which had imposed certain conditions on the consideration of their bail pleas. The Supreme Court had rejected their bail pleas and directed that they could renew their bail requests:

- After the **protected witnesses** in the case were examined; or
- After the expiry of **one year from January 5, 2026**;

whichever was earlier.

What is the Unlawful Activities (Prevention) Act, 1967?

The **Unlawful Activities (Prevention) Act, 1967** was enacted to provide for more effective prevention of certain unlawful activities of individuals and associations and to deal with terrorist activities and related matters.

- Originally, the term **"unlawful activities"** referred to actions supporting secession or questioning India's sovereignty and territorial integrity.
- The Act also empowers the **National Investigation Agency (NIA)** to investigate and prosecute cases nationwide.

Key Amendments to UAPA

The UAPA has undergone several amendments that expanded its scope.

2004 Amendment

- Added **"terrorist act"** to the list of offences.
- Expanded the law beyond unlawful activities related to secession.

2008 Amendment

- Expanded provisions related to **terrorist financing**.

2012 Amendment

- Addressed **cyber-terrorism**.
- Strengthened mechanisms relating to **property seizure**.

2019 Amendment

- Empowered the government to designate **individuals as terrorists**.
- Earlier, only organisations could be designated.

Major Provisions of UAPA

Government Powers

- The Central Government has authority to declare an activity unlawful by publishing a notice in the **Official Gazette**.

Investigation Timeline

- The investigating agency can file a chargesheet within a maximum period of **180 days after arrest**, with extensions possible after informing the court.

Extraterritorial Application

- The Act applies to **Indian and foreign nationals** and can apply even when the offence is committed outside India.

Penalties

- The Act provides for **death penalty and life imprisonment** as the highest punishments.

Bail Restrictions

- **Section 43D(5)** creates stringent conditions for bail.
- Under this provision, bail cannot be granted when the court finds reasonable grounds for believing that the accusation is **prima facie true**.

Significance of Section 43D(5)

- The bail provision under UAPA creates a higher threshold for obtaining bail compared with ordinary criminal cases.
- The provision requires the court to consider whether the accusations against the accused appear **prima facie true** before granting bail.

Conclusion

The Delhi High Court has adjourned the bail pleas of **Umar Khalid and Sharjeel Imam** to September 30, 2026, in the case concerning the alleged larger conspiracy behind the **2020 North-East Delhi riots**. Both had challenged the trial court's July 4, 2026 order rejecting their bail applications. The case involves provisions of the **UAPA**, which contains stringent conditions for bail under Section 43D(5). The Supreme Court's January 5, 2026 order had also placed conditions on when the two could renew their bail requests.

Muslim Minor Marriage: Conflict Between Personal Law and Child Protection Laws



Context:

- The **Punjab and Haryana High Court** recently observed that under **Muslim personal law**, a person who has attained puberty is presumed competent to marry a person of their choice.
- The observation has again brought attention to the legal relationship between **Muslim personal law** and statutory laws such as the **Prohibition of Child Marriage Act, 2006 (PCMA)** and the **Protection of Children from Sexual Offences Act, 2012 (POCSO)**.

What Was the Current Case?

- The case involved a **26-year-old Muslim man** and a **17-year-and-eight-month-old Muslim woman**.
- The couple approached the Punjab and Haryana High Court seeking **protection of their life and liberty** from the woman's family.
- They stated that they had performed **nikah** after the woman's father opposed their relationship.
- Justice **Vikram Aggarwal** referred to the position under Muslim personal law that a Muslim boy or girl who has attained **puberty, presumed at 15 years in the absence of evidence to the contrary**, may marry a person of their choice.
- However, the court **did not finally decide whether the marriage was legally valid**.
- The court directed the **Senior Superintendent of Police (Rural), Ludhiana**, to consider the couple's representation and take appropriate action according to law.

What Does Muslim Personal Law Say?

- The High Court referred to **Article 195 of Sir Dinshah Fardunji Mulla's Principles of Mohammedan Law**.
- It recognises a Muslim person of **sound mind who has attained puberty** as competent to enter into a marriage contract.
- In the absence of evidence showing an earlier or later attainment of puberty, **15 years** is presumed to be the age of puberty.
- The Punjab and Haryana High Court had earlier relied on this position in **Kammu v. State of Haryana (2010)**.
- In that case, the court held that a Muslim boy or girl who had attained puberty could marry a person of their choice, subject to the applicable legal requirements.

What Does the Prohibition of Child Marriage Act Say?

- Under the **Prohibition of Child Marriage Act, 2006 (PCMA)**:
    - **Male child:** A person who has not completed **21 years**.
    - **Female child:** A person who has not completed **18 years**.
    - **Child marriage:** A marriage where **either of the contracting parties is a child**.
- This creates a legal question when personal law recognises puberty as relevant to marriage while the PCMA prescribes statutory age limits.

What Does the POCSO Act Say?

- The **Protection of Children from Sexual Offences Act, 2012 (POCSO)** provides protection to persons below **18 years** from sexual offences.
- The question of whether personal law can affect the application of POCSO has been considered by different courts.

Judicial Position Over the Years

1. Mohd. Samim v. State of Haryana (2018)

- The Punjab and Haryana High Court considered the marriage of a **16-year-old Muslim girl**.
- The petitioner argued that the marriage was valid under **Muslim Personal Law** and that the PCMA did not apply.
- The court concluded that the marriage was valid under Muslim law because the girl had attained **puberty**.
- It consequently directed her release from a **Safe House** to reside with her husband.

2. Rahul v. State of Karnataka (2021)

- The **Karnataka High Court** took a different approach.
- It observed that the **POCSO Act would have an overriding effect over Muslim personal law**.

3. Aleem Pasha v. State of Karnataka (2022)

- The Karnataka High Court again held that **POCSO is a special legislation for protecting children from sexual offences**.
- It therefore held that POCSO would **override Muslim personal law** in this context.
- The court observed that sexual intercourse with a wife below **18 years** could attract the provisions of POCSO, even if the relationship was within marriage.
- The argument that puberty at around 15 years permitted marriage under Mohammedan law was rejected in relation to the application of POCSO.

Supreme Court Proceedings

- In **October 2022**, the Supreme Court issued notice on a plea by the **National Commission for Protection of Child Rights (NCPCR)** concerning a Punjab and Haryana High Court ruling involving a Muslim couple who had married under Muslim rites and sought protection.
- The Supreme Court did **not interfere with the relief granted to the couple** at that stage.
- In **January 2023**, the Supreme Court stated that the Punjab and Haryana High Court's judgment in **Javed v. State of Haryana and Others (2022)**, which had held that a Muslim girl aged 15 could enter into a valid marriage under personal law, **should not be relied upon as a precedent in other cases**.
- However, in **August 2025**, the Supreme Court dismissed an NCPCR petition challenging the 2022 Punjab and Haryana High Court judgment.
- A Bench comprising **Justices B.V. Nagarathna and R. Mahadevan** held that the NCPCR lacked **locus standi** to challenge the High Court's order.

4. Moidutty Musliyar v. State of Kerala (2024)

- The **Kerala High Court** refused to quash proceedings against persons accused of conducting a **child marriage**.
- The accused argued that **Muslim personal law** should apply instead of the PCMA.
- The court rejected this argument and allowed the proceedings under **Sections 10 and 11 of the PCMA** to continue.

5. Rubi v. State of U.P. (2026)

- The **Allahabad High Court** held that Muslim personal law recognising **puberty as the age of marriage** cannot override statutory provisions such as:

- **PCMA**
- **POCSO**

- The court emphasised the statutory protections available to children.

Legal Issue

- The central issue is the interaction between:

Muslim Personal Law	Statutory Child Protection Laws
• → Puberty is recognised as relevant to marriage; 15 years is presumed in the absence of evidence to the contrary	• → PCMA prescribes **18 years for females and 21 years for males** for the definition of a child • → POCSO provides protection to persons **below 18 years** This has resulted in **different judicial approaches** across different High Courts.

Why Is the Issue Significant?

- **Personal law vs statutory law:** It raises questions about the extent to which personal laws can operate when Parliament has enacted child-protection legislation.
- **Child protection:** The issue directly concerns the protection of persons below the statutory age of adulthood under relevant laws.
- **Uniformity in law:** Different High Court decisions have taken different approaches.
- **Judicial interpretation:** Courts continue to examine how personal laws should interact with laws such as the PCMA and POCSO.
- **Constitutional questions:** The issue involves the broader relationship between **personal laws, statutory legislation and fundamental legal protections**.

Current Legal Position

- The latest Punjab and Haryana High Court order **did not finally determine the validity of the 17-year-old's marriage**. It dealt with the couple's request for **protection of life and liberty**.
- The broader question of how **Muslim personal law interacts with the PCMA and POCSO** remains contested, with different courts having taken different positions.

SC Says State Can Set National Song, But Cannot Impose Penal Action on Conscientious Objectors



The **Supreme Court** on September 22, 2026, observed that a democratically elected government may determine the scope and length of the **National Song**, but it cannot violate individual and collective religious freedoms or impose penal consequences on **conscientious objectors** who refuse to sing one or more stanzas of *Vande Mataram*.

The observation was made by Justice **Joymalya Bagchi**, part of a three-judge Bench headed by Chief Justice of India **Surya Kant**.

Why in News?

The Supreme Court was hearing a petition challenging provisions relating to the National Song and the manner in which it is to be performed at public functions.

- The petition was filed by Carnatic vocalist and author **T.M. Krishna**.
- The petition challenges the **Prevention of Insults to National Honour (Amendment) Act, 2026**.
- It also challenges administrative directions issued by the **Ministry of Home Affairs** in January and a subsequent circular in July.
- The Court sought a response from the **Union government**.
- The Bench referred to the 1986 Supreme Court judgment in **Bijoe Emmanuel v. State of Kerala**.

What Did the Supreme Court Say?

Justice Joymalya Bagchi observed that the democratically elected State could determine what

constitutes the National Song and decide whether it should consist of **two or four stanzas**.

However, according to the Court, such power cannot override constitutional protections relating to religious freedom.

The Court observed that:

- **Articles 25 and 26** protect religious freedom.
- A **conscientious objector** cannot be subjected to penal consequences merely for refusing to sing one or all stanzas of the National Song.
- The rights recognised in the **Bijoe Emmanuel** judgment continue to be relevant.
- The Court would examine whether the 2026 amendment and government circulars affect the rights of conscientious objectors.

What is the Petition About?

T.M. Krishna, represented by senior advocate **S. Muralidhar** and advocate **Prasanna S.**, has challenged the amended law and executive directions.

According to the petition, the amended law and government orders compel the:

- Playing of *Vande Mataram*
- Mass singing of all **six stanzas**
- Singing of the National Song before the **National Anthem** at public functions

The petition states that non-compliance could result in:

- **Imprisonment of up to three years**
- **Fine**
- Or both

What Does the Petition Say About the Six Stanzas?

The petition argues that the last four stanzas of *Vande Mataram* contain **devotional and deity-invoking elements**.

It describes stanzas three to six as:

- **Devotional**
- **Deity-invoking**
- **Non-secular**

The petition argues that making the rendition of all six stanzas compulsory under penal provisions would affect citizens who object to such participation on religious or conscientious grounds.

It also argues that the scheme violates **fundamental rights** guaranteed by the Constitution and affects the basic feature of **secularism**.

Court Discusses What Defines a 'National Song'

During the hearing, senior advocate S. Muralidhar argued that the **2026 Act does not define what a "National Song" is**. Chief Justice Surya Kant observed that anyone who had studied history would know the National Song.

- Solicitor General **Tushar Mehta** said that *Vande Mataram* had been the National Song since the pre-Independence period.
- Justice Bagchi also observed that **customs and usages** could be considered in determining the status of the National Song.

Religious Elements and Secularism

Justice Bagchi discussed whether religious references in a national symbol necessarily affect secularism in a constitutional democracy. He observed that a religious flavour, an icon or homage to a particular God may not necessarily affect secularism.

- He referred to the example of the **American Constitution and National Anthem**, noting the use of the word "God" in the American National Anthem.
- At the same time, the Court said it would examine whether the 2026 amendment and government circulars affect the rights of conscientious objectors.

Bijoe Emmanuel v. State of Kerala

The Supreme Court referred to its **1986 judgment in Bijoe Emmanuel v. State of Kerala**.

Justice Bagchi said the precedent continues to uphold principles relating to:

- **Religious freedom**
- **Constitutional tolerance**
- **Silent objection**

The judgment is relevant to the present discussion because the Court is examining whether individuals can be subjected to penal consequences for refusing to participate in the singing of the National Song on conscientious grounds.

Debate Over the Law-Making Process

Senior advocate S. Muralidhar also questioned the process through which the definition and requirements concerning the National Song were introduced.

He argued that:

- Defining the National Song required **broader debate and consensus**.
- It should not be imposed on citizens through the threat of penal action.
- The Ministry of Home Affairs' **office memorandum was not gazetted**.
- The memorandum did not cite a supporting provision of law.

Exchange Between the Solicitor General and the Bench

Solicitor General **Tushar Mehta** objected to what he viewed as sensationalising the National Song issue.

Justice Bagchi responded that the Court was not seeking to create sensations, but was examining whether the law of the land, including the **Bijoe Emmanuel judgment**, governs the 2026 amendment.

The discussion also involved senior advocate **Sanjay Hegde**, while Justice Bagchi responded to remarks made during the hearing.

Constitutional Issues Involved

The case brings together questions concerning:

- **Religious freedom**
- **Conscientious objection**
- **Freedom of individual choice**
- **Articles 25 and 26**
- **Secularism**
- The State's authority concerning national symbols
- The use of **penal provisions** to enforce participation

Conclusion

The Supreme Court has observed that a democratically elected government may determine the scope and length of the **National Song**, but such authority cannot override constitutional protections relating to **religious freedom**. The Court is examining whether conscientious objectors can be subjected to penal consequences for refusing to sing one or more stanzas of *Vande Mataram*. The Bench has referred to the **Bijoe Emmanuel v. State of Kerala** precedent, which recognised religious freedom, constitutional tolerance and silent objection. The case also raises questions about the **2026 amendment**, government directions and the relationship between national symbols, individual rights and secularism.

Differing Views Are Normal but Decisions Unanimous: Election Commission Amid Row



September 24, 2026

The **Election Commission of India (ECI)** has said that differences of opinion among its members are a normal part of internal deliberations, while maintaining that all final decisions of the Commission are taken unanimously.

The issue has come up amid reports that Election Commissioners **Sukhbir Singh Sandhu and Vivek Joshi** had raised objections several times over decisions related to the **Special Intensive Revision (SIR)**, voter registration and electoral-roll management.

Why in the news?

The two Election Commissioners reportedly raised objections at least **14 times over 10 months**.

Their concerns included:

- Addition, deletion and restoration of voters.
- Changes in the voter registration process.
- Changes to **Form 6** for new voters.
- Management of IT systems used for electoral rolls.
- Decisions allegedly taken without their knowledge.

The ECI said that Commissioners can have different views, observations and suggestions during deliberations. However, such draft-stage views should not be treated as final decisions.

What did the Election Commission say?

The ECI stated that:

- Its actions are in accordance with **laws and instructions of the Commission**.
- Different views and observations are a normal part of institutional deliberation.
- **Final decisions are taken unanimously.**
- Internal checks and balances are part of the functioning of a **multi-member constitutional body**.
- Every officer of the Commission can give suggestions to improve the electoral system.

The Commission also said that highlighting individual internal notes does not present the complete picture of its decisions and initiatives.

Form 6 controversy

Form 6 is used by new voters to register themselves on the electoral roll.

The controversial change added questions related to the **Special Intensive Revision (SIR)**. Applicants were asked whether:

1. Their name appeared in the electoral roll during the previous SIR.
2. Their parent or grandparent appeared in that roll.
3. Neither their name nor their parents' names appeared in that roll.

The section was not marked mandatory, but applicants could not submit the form without answering it.

Objections by the Election Commissioners

On **May 16**, Election Commissioner **Vivek Joshi** recorded that Form 6 is a statutory form prescribed under the **Registration of Electors Rules, 1960**.

He stated that:

- Form 6 cannot be changed without amending the Rules.
- An SIR order or guideline cannot itself alter a statutory form.
- The proposal should be sent to the **Government** for the required changes.

On **May 19**, Election Commissioner **Sukhbir Singh Sandhu** agreed with Joshi's position.

After the new declaration appeared on the ECINet portal, Sandhu again raised the issue on **August 13**. He referred to the earlier objections and said the changes were **"unauthorised/illegal"** and should be removed immediately.

He also stressed that eligible **young and first-time voters** should be able to register without harassment.

Other reported concerns

The two Commissioners also raised concerns regarding:

Voter registration

Questions were raised over decisions involving:

- Addition of new voters.
- Deletion of voters.
- Restoration of voters.

Electoral-roll IT systems

- The Commissioners also raised concerns about the management and control of the **IT systems used for electoral rolls**.
- They reportedly questioned changes made without their knowledge and separately approached the **Cabinet Secretary** regarding the issue.

Legal framework for Form 6

- The process for changing Form 6 has previously involved changes to the legal framework.
- In **2021**, Parliament amended the **Representation of the People Act, 1950** to allow the Election Commission to collect Aadhaar numbers from voters.
- Following this, the **Law Ministry's Legislative Department** notified corresponding changes to the Registration of Electors Rules and Form 6 on **June 17, 2022**.
- This provides the background to the disagreement over whether the SIR-related changes could be introduced without amending the Rules.

Political reaction

- The issue also led to criticism from Opposition parties.
- The Congress called for **Chief Election Commissioner Gyanesh Kumar's resignation**.
- Congress MP **Rahul Gandhi** alleged that the BJP, RSS and the Election Commission were involved in what he called **"vote chori"**.

- CPI(M) MP **John Brittas** criticised the functioning of the Election Commission and referred to the reported objections concerning voter additions, deletions, restorations and Form 6.
- Trinamool Congress Rajya Sabha leader **Derek O'Brien** referred to an earlier motion by Rajya Sabha MPs seeking the removal of CEC Gyanesh Kumar and called for it to be brought forward.

Significance

The issue highlights questions around:

- **Electoral-roll management**
- **Voter registration**
- **Special Intensive Revision (SIR)**
- **Form 6**
- **Addition and deletion of voters**
- **Electoral IT systems**
- **Internal checks and balances within the ECI**
- **Decision-making in a multi-member constitutional body**

The ECI maintains that **different views during deliberations are normal**, while final decisions are taken unanimously. The controversy has brought greater attention to how objections raised by individual Election Commissioners are considered before final decisions are taken.

Plea Seeks Police Investigation and Trial of CEC Gyanesh Kumar



A petition has been filed in the **Supreme Court** seeking police investigation, evidence collection and regular trial against **Chief Election Commissioner (CEC) Gyanesh Kumar** over allegations concerning the functioning of the Election Commission of India. The petition argues that alleged acts such as **electoral-roll manipulation and unauthorised changes in election procedures** cannot be treated as part of official duties if they have no reasonable connection with those duties.

Why in News?

A petition moved by Supreme Court advocate **Shailendra Mani Tripathi**, represented by advocate Chand Qureshi, has sought to subject CEC Gyanesh Kumar to investigation and trial like an ordinary accused.

- The petition alleges acts including **tampering with electoral rolls**.
- It refers to alleged offences under **Section 32 of the Representation of the People Act, 1950** and the **Bharatiya Nyaya Sanhita (BNS)**.
- It challenges the applicability of statutory protection under **Section 16 of the Chief Election Commissioner and other Election Commissioners Act, 2023**.
- The plea argues that the CEC does not have absolute personal immunity from criminal prosecution.
- The matter raises questions concerning **free and fair elections, constitutional accountability and the independence of the Election Commission**.

Allegations Raised in the Petition

The petition refers to several alleged actions which, according to the petitioner, were not connected with the legitimate discharge of official duties.

The allegations include:

- Unilateral alteration of **statutory Form 6**.
- Introduction of a mandatory **ancestral or "last SIR linkage" condition** for certain first-time young voters.
- Alleged disenfranchisement linked to **software failures**.
- Alleged unauthorised filing of more than **16.10 lakh appeals in West Bengal** in the name of the Election Commission.
- Alleged attempts to remove citizens whose names had been restored by **700 judicial officers**.

The petition argues that such actions would require legislative authority or amendment of the relevant electoral rules where applicable.

Dissents by Election Commissioners

The petition was also filed after a report by *The Indian Express* referred to official files showing written disagreements by the other two Election Commissioners.

- **Sukhbir Singh Sandhu** and **Vivek Joshi** reportedly recorded written dissents and objections.
- The objections were recorded on at least **14 occasions** over a period of 10 months.
- On four occasions, objections were reportedly recorded on the same day.
- The objections concerned decisions alleged to have been taken **unilaterally and without authorisation**.

These allegations have brought attention to the internal functioning and decision-making process of the Election Commission.

Constitutional Position of the CEC

- The petition makes an important distinction between **security of tenure** and **criminal immunity**.

Article 324 of the Constitution

Article 324 provides the constitutional framework for the **Election Commission of India**. According to the petition:

- Article 324 provides the CEC with **security of tenure**, subject to the constitutional removal process.
- It does not provide absolute personal immunity from criminal prosecution.
- The Election Commission remains subject to the **rule of law**.

Article 361 of the Constitution

The petition also refers to **Article 361**.

- Article 361 provides specific constitutional protection to the **President and Governors**.
- The petitioner argues that similar absolute personal immunity is not provided to the CEC.
- Therefore, according to the plea, the CEC cannot claim personal immunity from criminal proceedings merely because of holding constitutional office.

Section 16 of the 2023 Act

The **Chief Election Commissioner and other Election Commissioners Act, 2023** provides statutory protection to the CEC and Election Commissioners in relation to certain acts performed in the discharge of their official duties. The petition challenges the applicability of this protection in cases involving alleged criminal conduct.

It argues that:

- Protection cannot cover acts having no **reasonable nexus with official duties**.
- Alleged manipulation of electoral records cannot automatically be treated as part of official functions.
- Section 16 does not expressly prohibit **police investigation or arrest**, according to the petition.

Doctrine of Reasonable Nexus

A central argument in the petition is the concept of **"reasonable nexus."** The principle, as presented in the plea, is that legal protection connected with official functions should apply only when the alleged act has a reasonable connection with the person's official duties.

According to the petitioner:

- An official act must have a logical connection with the duties of the office.
- If that connection disappears, the protection associated with official functions may not apply.
- Alleged criminal acts such as **forgery or deliberate manipulation of electoral records** are argued to fall outside legitimate official duties.

Free and Fair Elections

The petition connects the allegations with the constitutional principle of **free and fair elections**. The Election Commission of India has an important constitutional role in:

- Conducting elections.
- Maintaining electoral rolls.
- Ensuring proper election procedures.
- Protecting the integrity of the electoral process.

The petition argues that alleged manipulation of voter records can affect the fundamental functioning of India's **electoral democracy**.

"Fraud Unravels Everything"

The petition also relies on the legal principle that **"fraud unravels everything."** The argument is that legal protection cannot be used to protect conduct involving alleged deliberate fraud or manipulation.

According to the plea:

- Willful manipulation of voter lists would conflict with the constitutional requirement of **free and fair elections**.
- Such conduct, if established, would be outside the legitimate discharge of official duties.
- Therefore, the petitioner argues that statutory protection under Section 16 should not apply.

Significance

The case raises broader questions concerning **constitutional accountability and institutional independence**.

- It concerns the balance between **immunity and accountability** for constitutional authorities.
- It raises questions about the scope of legal protection available to Election Commissioners.
- It highlights the importance of maintaining the integrity of **electoral rolls**.
- It brings attention to the internal decision-making process of the Election Commission.
- It also raises questions about the relationship between **constitutional offices and criminal law**.

Major Constitutional and Legal Issues

The matter involves several important legal questions:

- **Scope of Article 324:** Whether security of tenure is distinct from criminal immunity.
- **Article 361:** Whether constitutional immunity available to the President and Governors has any equivalent for the CEC.
- **Section 16 of the 2023 Act:** The extent of statutory protection available to Election Commissioners.
- **Reasonable nexus:** Whether an alleged act must have a direct connection with official duties to receive legal protection.
- **Electoral integrity:** Whether alleged manipulation of electoral records can be treated as part of official functions.
- **Rule of law:** Whether constitutional authorities remain subject to ordinary criminal law when alleged conduct falls outside their official duties.

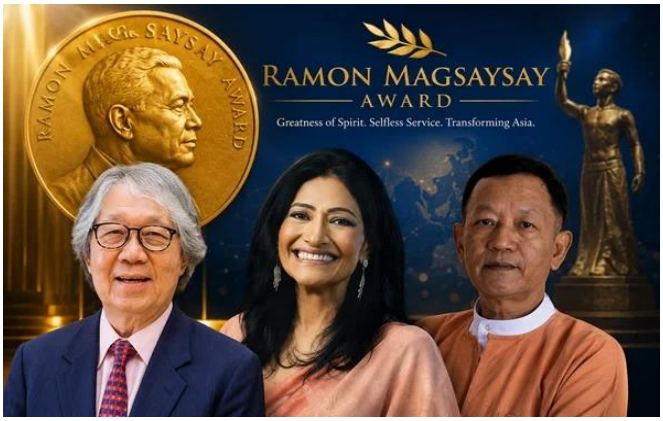
Conclusion

The petition raises important questions about the **accountability of constitutional authorities, protection available to Election Commissioners and the integrity of the electoral process**. However, the allegations contained in a petition are not by themselves findings of guilt. The legal questions will depend on the **Supreme Court's consideration of the petition, applicable constitutional provisions and the evidence placed before the court**.

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Indian Society & Social Justice

Ramon Magsaysay Award 2026



Why in News?

- **Tommy Koh**, a Singaporean lawyer and diplomat, **Bo Kyi**, a Myanmar activist, and **Runa Khan**, a Bangladeshi social worker, have been named recipients of the **Ramon Magsaysay Award** for this year.
- The award recognises individuals who have demonstrated **transformative leadership and service to society in Asia**.

About Ramon Magsaysay Award

- It is widely regarded as **Asia's premier prize** and one of the region's highest honours for public service and leadership.
- The award was established in **1957** and was first presented in **1958**.
- It is named after **Ramon Magsaysay**, the former President of the **Philippines**.
- The award ceremony is traditionally held in **Manila, Philippines**, on **August 31**, marking Magsaysay's birth anniversary.
- Awardees are selected by the **Board of Trustees of the Ramon Magsaysay Award Foundation (RMAF)**.
- Winners receive:
  - A **certificate**
  - A **medallion** bearing the profile of Ramon Magsaysay.

Award Categories: 1958–2008

- Between **1958 and 2008**, the award was given under six major categories:
  - **Government Service:** Outstanding service to the public interest through government institutions.

- **Public Service:** Exceptional contribution to public welfare by private citizens.
- **Community Leadership:** Leadership aimed at improving opportunities and living conditions for disadvantaged communities.
- **Journalism, Literature and Creative Communication Arts:** Use of writing, publishing, photography, radio, television, cinema or performing arts for public benefit.
- **Peace and International Understanding:** Contributions towards **peace, friendship, tolerance and international solidarity**.
- **Emergent Leadership:** Recognition of young individuals working on **social change** within their communities.

Emergent Leadership Category

- The **Emergent Leadership** category was introduced in **2000**.
- It recognised individuals aged **40 years or below** for outstanding work on social issues.
- The category was supported through a grant from the **Ford Foundation**.

Changes Since 2009

- From **2009 onwards**, the Ramon Magsaysay Award stopped following fixed award categories.
- **Emergent Leadership** remained an exception.
- The award continues to honour individuals for their **leadership, social commitment and contribution to Asian society**.

Digital India Land Records Modernization Programme (DILRMP) 3.0



The government has launched the **operational guidelines for DILRMP 3.0** with an outlay of **₹565.5 crore** to create an integrated digital system for **land records, maps, registration and related data**.

About DILRMP 3.0

- **Period:** 2026–31 (5 years).
- **Type: Central Sector Scheme** with **100% central funding**.
- **Implementing Ministry: Ministry of Rural Development**, through the **Department of Land Resources (DoLR)**.
- The programme aims to integrate land-related information through a **GIS-based digital framework**.
- Progress will be monitored through an upgraded **DILRMP-MIS dashboard**.

Background

- In **2008**, the government merged:
  - **Computerisation of Land Records (CLR)**
  - **Strengthening of Revenue Administration and Updating of Land Records (SRA & ULR)**
- The merged programme was called the **National Land Records Modernization Programme (NLRMP)**.
- In **2016**, it was brought under the **Digital India** programme and renamed **DILRMP**.

Key Features of DILRMP 3.0

1. Universal Bhu-Aadhaar (ULPIN)

- A **14-digit unique identification number** will be assigned to every land parcel.
- It will provide a distinct identity to land parcels and improve record management.

2. Digitisation and Georeferencing of Maps

- Cadastral maps will be fully digitised and linked with **precise geographical coordinates**.

3. Paperless Property Registration

- End-to-end **online and paperless registration** will be introduced.
- A new **Registration Repository** will store registration-related information.
- **75 Sub-Registrar Offices (SROs)** are planned to be upgraded into modern **Registration Seva Kendras**.

4. Integrated Revenue Courts

- A paperless **case management system** will be connected with land records.
- It aims to improve tracking of land disputes and reduce the **time and cost of litigation**.

5. NAKSHA Pilot for Urban Areas

- The programme includes completion of the **NAKSHA Pilot** for urban land records.

6. State Land Stacks

- States can develop their own **land stacks** by connecting different land-related databases and systems through **APIs**.
- These state-level systems will together form the basis of a **federated national land stack**.

Paniya Tribe



The **Kerala State Human Rights Commission** recently directed authorities to urgently rehabilitate **Paniya tribal families** living in temporary tarpaulin shelters at **Vaniyampuzha**, across the Chaliyar River in Pothukal panchayat.

About Paniya Tribe

- The **Paniya (Paniyan)** are one of the major **Scheduled Tribes of Kerala**.
- They are mainly concentrated in **Wayanad**, with populations also found in **Kannur, Kozhikode and Malappuram**.
- Paniya communities are also present in parts of **Tamil Nadu's Nilgiris** and **Kodagu district of Karnataka**.
- They constitute the **largest single Scheduled Tribe population in Kerala**.
- The name *Paniyan* comes from the Malayalam word **"pani"**, meaning **work**, reflecting their traditional association with agricultural and manual labour.
- Historically, many Paniyas worked as **bonded labourers**. Today, members of the community also own land and cultivate crops such as **rice and ragi**.

Language and Culture

- The **Paniya language** belongs to the **Dravidian language family** and has a close connection with Malayalam.
- Traditional Paniya settlements consist of rows of **bamboo huts with thatched roofs**.
- Houses may be **single- or double-storeyed**.
- The community traditionally worships **Kali** and considers the **banyan tree sacred**.
- Banyan trees are generally not cut because of the belief that doing so can bring illness.

Geographical Distribution

Region	Major areas
Kerala	Wayanad, Kannur, Kozhikode, Malappuram
Tamil Nadu	Gudalur and Pandalur, Nilgiris
Karnataka	Southern Kodagu

SPARSH Pension System



The **Defence Accounts Department (DAD)** has made significant progress in resolving **discrepant pension cases** on the SPARSH platform.

Why in News?

DAD has undertaken a focused exercise to **identify and rectify discrepancies in defence pension cases** registered on SPARSH.

About SPARSH

- **SPARSH** stands for **System for Pension Administration – Raksha**.
- It is a **Ministry of Defence** initiative for the digital management of defence pensions.
- It aims to provide an integrated system for **pension sanction, administration and disbursement** for:
  - **Army**
  - **Navy**
  - **Air Force**
  - **Defence Civilians**
- It is administered by the **Defence Accounts Department (DAD)** through the **Principal Controller of Defence Accounts (Pensions), Prayagraj**.

Key Features

- **Direct Pension Disbursement:** Pension payments are credited directly to pensioners' bank accounts without dependence on third-party intermediaries.
- **Centralised System:** It integrates **pension claims, sanction and disbursement** on a single platform.
- **Self-Verification:** Pensioners can verify and rectify their personal and pension-related information digitally.
- **Digital Identification:** Reduces the need for repeated visits to pension offices.
- **Transparency:** Pensioners can view their **pension account and related information** through the portal.
- **Complete Pension Record:** The system maintains the history of a pensioner's **entitlements and pension-related events** from the beginning of pension until its cessation.

Pangwala Tribe and Gut Microbiome



A study of the **gut microbiome of the Pangwala tribal community** found that Pangwala people living in the remote **Pangi Valley** and those who have migrated to urban areas still retain a largely similar **core microbiome**, despite differences in diet, lifestyle and environment.

Why in News?

The study highlights how some features of the **gut microbiome may remain stable across generations**, even after major changes in living conditions.

About Pangwala Tribe

- The **Pangwala** are a **Scheduled Tribe** mainly found in the **Pangi Valley of Chamba district, Himachal Pradesh**.
- The valley lies in the **Pir Panjal range of the Himalayas**.
- Difficult terrain and long winters historically kept the community relatively **isolated**, helping preserve its distinct cultural and linguistic traditions.
- **Language:** Pangwali, an **Indo-Aryan language** of the western Himalayan linguistic region.

Traditional Economy and Lifestyle

- Traditionally dependent on:
  - **Terrace farming**
  - **Animal husbandry**
  - **Seasonal agriculture**
  - **Mountain trade**
- Important crops include **barley, wheat, maize, potatoes and peas**.
- **Sheep and goat rearing** is also practiced, particularly in higher-altitude areas.
- Villages are generally small, with strong **kinship and community cooperation**.

- Traditional houses commonly use **stone and wood**, suited to the cold climate and steep terrain.

Culture and Beliefs

- Pangwala culture combines **Himalayan tribal traditions** with influences from neighbouring **Hindu and Buddhist communities**.
- Most Pangwala follow **Hindu traditions**, along with local folk and Himalayan spiritual practices.
- **Village festivals, temple worship, rituals, music and folk dances** remain important elements of their cultural identity.

Gut Microbiome

- The **gut microbiome** refers to the community of microorganisms living in the human digestive tract.
- The study found a similar **core microbiome** among Pangwala people living in both:
    - **Remote Pangi Valley**
    - **Urban areas**
- This similarity was observed despite major differences in **diet, lifestyle and environment**.

Dadasaheb Phalke Award 2024



Veteran actor **Anant Nag**, known for his work in **Hindi and Kannada cinema**, will receive the **Dadasaheb Phalke Award for 2024** for his contribution to Indian cinema.

Why in News?

Anant Nag has been selected for the **2024 Dadasaheb Phalke Award**, the highest national honour for contribution to Indian cinema.

About Dadasaheb Phalke Award

- It is given by the **Government of India** for an individual's **lifetime contribution to Indian cinema**.
- It was instituted in **1969**, during the birth centenary year of **Dadasaheb Phalke**.
- It is regarded as the **highest award in Indian cinema**.
- The award recognises **outstanding contribution to the growth and development of Indian cinema**.
- **First recipient: Devika Rani**, often called the **"First Lady of Indian Cinema."**
- The award consists of:
    - **Swarna Kamal (Golden Lotus) medallion**
    - **Shawl**
    - **₹10 lakh cash prize**
- It is presented by the **President of India**.

Dadasaheb Phalke

- **Full name:** Dhundiraj Govind Phalke.
- Born on **30 April 1870** in **Trimbak, Maharashtra**.
- He is widely regarded as the **Father of Indian Cinema**.
- He directed **Raja Harishchandra (1913)**, India's **first full-length feature film**.

Bhil Tribe



Why in News?

The **Rajasthan High Court** has issued notices to the State government and other authorities on a petition seeking a **9% sub-quota for the Bhil community** within the existing **12% reservation for the Scheduled Tribe (ST) category**.

About Bhil Tribe

- The **Bhils** are among the major tribal communities of India and are widely distributed across western and central India.

- According to the **2011 Census**, Bhils formed about **38% of India's Scheduled Tribe population**, making them the country's largest tribal group.
- The name **Bhil** is linked to the Dravidian word **"villu" or "billu"**, meaning **bow**, reflecting their traditional association with archery.
- References to Bhil communities are found in ancient texts, including the **Ramayana and Mahabharata**.

Distribution

Bhil communities are mainly found in:

- **Rajasthan**
- **Gujarat**
- **Western Madhya Pradesh**
- **Northern Maharashtra**

They are concentrated around the **Aravalli, Vindhya, Satpura and northern Western Ghats** regions.

Some communities are also found in **river valleys and coastal areas**, while migration has taken some Bhil families to other parts of India.

Occupation

- **Agriculture** is the main traditional occupation.
- Some groups practise **shifting cultivation**, while settled **plough agriculture** is more common.

Language

- The Bhils speak **Bhili**, an **Indo-Aryan language**.
- Bhili has been influenced by regional languages such as **Rajasthani and Marathi**, with strong links to **Gujarati**.

Beliefs and Culture

- Bhil religious practices combine **traditional tribal beliefs with Hindu influences**.
- Important local deities include **Khandoba, Kanhoba, Bahiroba and Sitalmata**.
- Some groups worship **Vaghdev (Tiger God)**.

Festivals and Art

- **Baneshwar Fair** is an important Bhil festival, held around **Shivaratri**.
- **Holi and Dussehra** are also widely celebrated.
- **Ghoomar** is an important folk dance associated with Bhil culture.
- **Bhil painting** is known for its distinctive use of **multicoloured dots** to fill figures and designs.

Hindi Diwas and India's Language Policy



Why in News?

Hindi Diwas is observed on **14 September**. On this day in **1949**, the Constituent Assembly adopted the **Munshi–Ayyangar formula**, which provided a constitutional framework for the use of Hindi and English at the Union level while recognising India's linguistic diversity.

Language Debate in the Constituent Assembly

- **Central Issue:** The Constituent Assembly debated whether **English** should continue after Independence and which Indian language should be used for Union administration.
- **Hindi Supporters:** Leaders such as **R.V. Dhulekar** and **Seth Govind Das** supported Hindi as the main language of national administration and wanted a quick replacement of English.
- **Non-Hindi Regions:** Representatives from southern and other non-Hindi-speaking regions opposed the compulsory use of Hindi and stressed **linguistic diversity and unity in diversity**.
- **Moderate Approach:** Leaders such as **Jawaharlal Nehru** and **Maulana Abul Kalam Azad** supported a gradual approach and highlighted the practical limitations of Hindi's administrative and technical vocabulary at that time.

Munshi–Ayyangar Formula

The compromise was developed by **K.M. Munshi** and **N. Gopalaswami Ayyangar**.

- **Official, Not National Language:** Hindi in the **Devanagari script** was made the **official language of the Union**. The Constitution did **not** declare Hindi as the national language.

- **English:** English was allowed to continue for **15 years**, up to 1965, to ensure a smooth transition.
- **Continuation of English:** Following the language-related tensions around 1965, the **Official Languages Act, 1963** provided for the continued use of English alongside Hindi for Union purposes.
- **Numerals:** The **international form of Hindu-Arabic numerals** was adopted for official Union purposes.
- **State Languages:** States could use their own **regional language or English** for internal administration.

Constitutional Provisions

The language provisions are mainly contained in **Part XVII of the Constitution (Articles 343–351)**.

- **Article 343:** Hindi in **Devanagari script** is the official language of the Union.
- **Article 348:** Proceedings of the **Supreme Court and High Courts**, and authoritative texts of laws, are generally in English.
    - A Governor, with the **prior consent of the President**, can permit Hindi or the State's official language in High Court proceedings.
- **Article 350A:** States should provide facilities for **mother-tongue instruction at the primary stage** for linguistic minority children.
- **Article 351:** Directs the Union to promote the **spread and development of Hindi**.
- **Eighth Schedule:** Initially contained **14 languages** and now recognises **22 languages**.
- **English:** English is **not included in the Eighth Schedule**, but continues to be used for Union purposes under the **Official Languages Act, 1963**.

Hindi Diwas 2026

- **6th All India Official Language Conference:** Held at **Navi Mumbai, Maharashtra** alongside Hindi Diwas 2026.
- The conference focused on promoting Hindi as a **functional link language** while encouraging coexistence with other scheduled Indian languages.

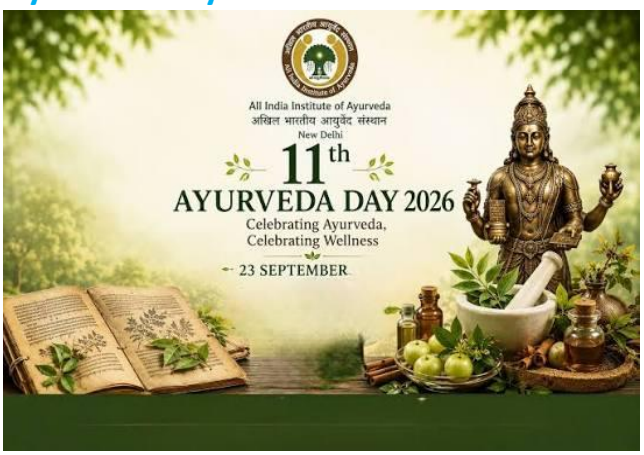
Official Language Awards

- **Rajbhasha Kirti Puraskar:** Recognises ministries, departments, PSUs and banks for effective use and implementation of Hindi in official work.
    - **Ministry of Defence:** First prize among ministries/departments with more than 300 personnel.
    - **Department of Financial Services:** First prize among ministries/departments with fewer than 300 personnel.
- **Rajbhasha Utkrishtata Sammaan:** Special recognition for sustained excellence when an organisation wins the first prize for two consecutive years.
    - **DARPG** received this recognition after winning the Rajbhasha Kirti Puraskar in **2023–24 and 2024–25**.
- **Rajbhasha Gaurav Puraskar:** Recognises individuals for **original Hindi books, literature and outstanding articles**.

Hindi Diwas vs World Hindi Day

- **Hindi Diwas: 14 September**
    - Marks the Constituent Assembly's decision of **14 September 1949** regarding Hindi as the Union's official language.
- **World Hindi Day: 10 January**
    - Commemorates the **First World Hindi Conference**, held in **Nagpur in 1975**.
    - Focuses on promoting Hindi at the **international level**.

Ayurveda Day 2026



Why in News?

The **Ministry of Ayush celebrated the 11th Ayurveda Day in Nagpur** with the theme **"Ayurveda for a Healthy Future."**

- The event saw the release of **Safety Dossiers on Gokshura (Tribulus terrestris) and Chandrashura (Lepidium sativum)**.
- **Standard Treatment Guidelines** for dermatological disorders were also released.
- The **"From Traditional Wisdom to Global Leadership: Ayush Vision 2030"** report was also launched.

Key Facts about Ayurveda

- **Ayurveda** is an ancient Indian system of medicine with a history of more than **5,000 years** and roots associated with the **Rigveda**.
- The word Ayurveda comes from **"Ayu" meaning life** and **"Veda" meaning knowledge**.
- Its main objective is to **maintain the health of healthy people and treat diseases among those who are ill**.
- Ayurveda considers health to depend on the balance of **doshas, agni, dhatus and malas**, along with harmony between the **body, mind and spirit**.
- It uses the medicinal properties of **plants, animal products and minerals**.
- Important classical texts include the **Charaka Samhita** and **Sushruta Samhita**.

Ayurveda Day

- Ayurveda Day is observed annually on **23 September** to promote Ayurveda and increase its global recognition.
- In **March 2025**, the Ministry of Ayush fixed **23 September** as the permanent date for Ayurveda Day.
- Earlier, it was observed on **Dhanvantari Jayanti (Dhanteras)**.
- The new date coincides with the **autumn equinox** and reflects the Ayurvedic idea of maintaining **balance between the body, mind and spirit**.

Ayurveda and Traditional Medicine

- The government is developing the Ayurveda ecosystem through **better education, evidence-based research, standardisation of medicines and global outreach**.
- Efforts are also being made to integrate Ayurveda with **modern healthcare systems**.
- Ayurveda is promoted along with other traditional systems such as **Yoga and Naturopathy, Unani, Siddha and Homoeopathy**.

Health Infrastructure for Ayurveda

- **Union Budget 2026–27:** Allocated **₹4,408 crore** to the Ministry of Ayush for strengthening healthcare systems, promoting **research and innovation**, improving infrastructure and expanding global outreach.
- **National Ayush Mission (NAM):** Supports the expansion of Ayush healthcare and its integration with the **National Health Mission (NHM)**.
- Between **2014–15 and 2025–26**, more than **₹6,406.99 crore** was released under NAM for strengthening Ayush infrastructure.
- **Ayushman Arogya Mandirs:** Existing Ayush dispensaries are being upgraded into wellness centres. As of **September 2026, 12,260 centres** were functional against a target of **12,500**.
- **Public Health Integration:** Ayush services are available in **13,249 public health facilities**, including PHCs, CHCs and district hospitals.
- The government supports **25,322 Ayush doctors** and **5,666 Ayush paramedics**.
- **Integrative Medicine:** Departments of Integrative Medicine are being established at institutions such as **VMMC & Safdarjung Hospital** and **Lady Hardinge Medical College**.
- **Telemedicine:** Ayush OPD services are available through **eSanjeevani**, which has served more than **50 crore patients**.
- **Insurance Coverage:** IRDAI has directed insurers to provide products or add-ons covering **different systems of medicine, including Ayurveda**.

Development of Ayurveda Education

- Under the **National Ayush Mission**, the government supports the establishment and upgradation of **undergraduate and postgraduate Ayush institutions**.
- **Union Budget 2026–27** announced **three new All India Institutes of Ayurveda (AIIA)** to strengthen Ayurveda education, healthcare and research.

- **17 new Ayush colleges** have been approved under NAM, including **12 focused on Ayurveda**.
- Greater emphasis is being placed on **evidence-based research and scientific validation** to strengthen the position of Ayurveda in contemporary healthcare.

Regulation and Quality Standards

- Ayurvedic medicines are regulated under the **Drugs and Cosmetics Act, 1940** and **Drugs Rules, 1945**.
- Manufacturers must follow **Good Manufacturing Practices (GMP)** and meet prescribed **pharmacopoeia standards**.
- Drug inspections and testing mechanisms are used to maintain **quality, safety and efficacy**.
- **e-Aushadhi Portal:** Enables paperless processing and real-time tracking of applications for Ayurvedic drug manufacturing licences.
- **Ayurveda Aahara:** FSSAI, in collaboration with the Ministry of Ayush, has developed standards for **Ayurveda-based food products**.
- **Quality Upgradation:** The Union Budget 2026–27 proposed upgrading **Ayush pharmacies and Drug Testing Laboratories** to improve quality control, standardisation and skilled manpower.

Research and Development in Ayurveda

- **AYURGYAN Scheme:** Launched in **2021–22**, it provides financial support for research and development in Ayurveda and other Ayush systems.
- Of **₹17.79 crore** allocated across 34 projects, **₹9.38 crore** was provided for **17 Ayurveda projects** focusing on safety, efficacy and validation.
- **AYUR SWASTHYA Yojana (2021–2026):** Supports clinical research, drug research, public health programmes and development of institutions as **Centres of Excellence**.
- Out of **25 supported projects, 22 involved Ayurveda interventions**.
- **CCRAS:** The **Central Council for Research in Ayurvedic Sciences** promotes scientific research through **30 national and regional institutes**, along with fellowships and training programmes.
- **SPARK Programme:** The **Studentship Programme for Ayurveda Research Ken** encourages undergraduate students to undertake short-term research projects. Between **2022–23 and 2024–25, 289 Ayurveda colleges** benefited.
- **AI-based Translation:** CCRAS has collaborated with **Anuvadini AI** to translate Ayurveda research, educational material and medical journals into **13 Indian languages**.
- **Medicinal Plants:** Government efforts focus on the **conservation, cultivation and processing of medicinal plants**, while also strengthening supply chains and ensuring quality raw materials for Ayurveda.

EDITORIALS

Crux of The Hindu & Indian Express

Indian Society & Social Justice

Youth Discontent and the Changing Face of Protest



Why in News?

- **Youth-led protests** are increasingly taking new forms, with **Gen Z** using digital platforms to mobilise and amplify dissent.
- Recent protests in **India, Nepal and Bangladesh** highlight growing youth dissatisfaction with **governance, institutional performance and perceived inequality**.

- In India, protests linked to **examination and recruitment irregularities** indicate growing frustration among students.

Changing Nature of Protests

- **Earlier:** Protests were generally organised through political parties, unions and established civil-society organisations.
- **Emerging pattern:** Youth-led protests are increasingly:
    - **Spontaneous**
    - **Decentralised**
    - **Digitally coordinated**
    - Less dependent on traditional political organisations.
- **Social media** enables protests to spread rapidly beyond their original location.

Major Drivers of Youth Discontent

1. Perceived Institutional Failure

- Young people may perceive institutions as unable to address:
    - **Examination irregularities**
    - **Recruitment problems**
    - **Corruption**
    - Poor public-service delivery.
- Perception of **collusion or unfairness** can intensify public anger.

2. Declining Institutional Trust

- Failure to respond effectively to grievances can deepen the belief that **institutional safeguards are weakening**.
- Excessive **centralisation of power and authority** may further contribute to such perceptions.

3. Governance Deficit

- When authorities fail to recognise or address legitimate grievances, relatively narrow protests can potentially expand into **broader anti-establishment movements**.

Recent Indian Examples

Student Protests

- Student protests have emerged over **examination and recruitment irregularities** in several States.
- The article highlights protests in **Jharkhand, Chhattisgarh and Bihar**.
- The **Cockroach Janta Party (CJP)**-linked agitation and Jantar Mantar protest reflected youth anger over issues such as examination management.

Jharkhand

- The agitation over **recruitment irregularities** had a recognisable leadership.
- **Devendranath Mahato** undertook a hunger strike and was subsequently hospitalised.
- The State government's decision to **scrap the examinations** demonstrated the pressure created by the agitation.

Role of Social Media

- **Rapid mobilisation:** Grievances can reach large audiences quickly.
- **Decentralised organisation:** Protests can operate without traditional political structures.
- **Narrative formation:** Digital platforms influence how grievances are perceived and communicated.
- **Wider participation:** Local issues can acquire national visibility.

Digital platforms → rapid mobilisation → wider participation → potential escalation

Lessons from Nepal and Bangladesh

- Student and youth-led movements in **Nepal and Bangladesh** contributed to the removal of long-established regimes.
- The broader lesson is that prolonged youth dissatisfaction can become politically significant when combined with:
    - Institutional failures
    - Economic or social grievances
    - Perceived suppression of dissent
    - Weak political responsiveness.

State Response: Key Concern

- The article highlights the use of **indiscriminate force against student protesters** as a major concern.
- Excessive force can:
    - Intensify resentment.
    - Produce a backlash against authorities.
    - Expand a limited grievance into a broader movement.
- At the same time, legitimate restrictions may be required when protests become **violent or threaten public safety**.

The 'Single Spark' Problem

- Localised grievances can sometimes connect with wider dissatisfaction.
- The article uses the historical spread of **Naxalism** as an illustration of how a movement can grow from relatively small beginnings into a major security challenge.
- Therefore, authorities need to distinguish between:
    - **Legitimate democratic dissent**
    - **Violent or unlawful mobilisation**
    - **Genuine security threats**

Key Challenges

- **Youth unemployment and recruitment concerns**
- **Examination irregularities**
- **Perceived corruption and favouritism**
- **Institutional distrust**
- **Centralisation of authority**
- **Excessive use of force**
- **Rapid digital mobilisation**
- Possibility of different grievances **converging into a broader movement**

Way Forward

- **Institutional responsiveness**
    - Address grievances quickly and transparently.
- **Fair examinations and recruitment**
    - Strengthen examination security, accountability and grievance-redress mechanisms.
- **Proportionate policing**
    - Use force only when necessary and proportionate to the situation.
- **Dialogue with youth**
    - Establish institutional channels for regular engagement with students and young citizens.
- **Digital governance**
    - Use social-media monitoring for early identification of grievances while protecting legitimate expression.
- **Strengthen democratic institutions**
    - Preserve institutional checks and balances and public confidence in governance.
- **Evidence-based policy**
    - Address the underlying causes of dissatisfaction rather than treating every protest merely as a law-and-order problem.

Global Gender Gap Index 2026: How Close Is the World to Gender Parity?



The **World Economic Forum (WEF)** has released the **Global Gender Gap Report 2026**, covering 145 economies. The report measures gender parity across four major dimensions and shows that while the world has made gradual progress, significant gaps remain, particularly in **economic participation** and **political empowerment**.

Why in News?

- The **World Economic Forum (WEF)** recently released the **2026 Global Gender Gap Report**, the 20th edition of the report.
- The report covers **145 economies** and also analyses a longitudinal constant sample of **97 economies** that have been included in every edition since 2006.
- Global indices are important markers for understanding a country's comparative progress.

What is the Global Gender Gap Index?

The **Global Gender Gap Index** is released annually by the **World Economic Forum (WEF)**. It was first introduced in **2006** to benchmark the current state and evolution of gender parity.

The Index measures gender parity across four major dimensions:

1. **Economic Participation and Opportunity**
2. **Educational Attainment**
3. **Health and Survival**
4. **Political Empowerment**

The index ranges between **0 and 1**, where **1 represents complete parity**. The gender gap represents the distance from full parity.

Global Gender Parity in 2026

According to the **Global Gender Gap Index 2026**, the world has closed **69.2% of the overall gender gap**.

This represents a **0.4 percentage point improvement** compared to the previous year. However, no economy has achieved complete gender parity.

Iceland Leads Global Rankings

For the **17th consecutive year**, **Iceland** recorded the highest level of gender parity.

- **Iceland:** 93%
- It remains the **only economy to have closed more than 90%** of its overall gender gap.
- **Finland:** 87.2%
- **Norway:** 85.7%

Europe Dominates the Top Performers

European economies account for **70% of the leaderboard** in 2026.

Country	Gender Parity	Rank
Iceland	93%	1st
Finland	87.2%	2nd
Norway	85.7%	3rd
United Kingdom	84.2%	5th
Sweden	82.3%	7th
Germany	81.7%	9th
Ireland	81.4%	10th

Other economies completing the top 10 include:

- **Namibia:** 84.5%, ranked 4th and the highest-scoring **Sub-Saharan economy**.
- **New Zealand:** 82.8%, ranked 6th.
- **Australia:** 81.9%, ranked 8th and making its **top 10 debut**.

Economies from **Eastern Asia and the Pacific** have the second-highest footprint among the top 10, accounting for **17%** of the top 10.

Gender Gaps Across Different Dimensions

The four dimensions show considerable differences in the level of gender parity.

Dimension	Global Gender Parity
Educational Attainment	96.9%
Health and Survival	96.2%
Economic Participation and Opportunity	61.7%
Political Empowerment	22.1%

Educational Attainment and **Health and Survival** are the two dimensions closest to parity.

In contrast, the widest gaps remain in **Economic Participation and Opportunity** and **Political Empowerment**.

This indicates that progress in basic human development outcomes has been considerably greater than progress in women's participation in economic and political decision-making.

Countries at the Bottom

- **Chad** ranked lowest, at **145th position**.
- It was joined in the bottom three by **Pakistan and Iran**.

What Is India's Rank?

- India has retained its **131st rank out of 145 economies** in the 2026 index.
- India recorded **64.5% gender parity**.
- The country has improved by **4.3 percentage points since the inaugural 2006 edition**. However, India's score remains below the **global average of 69.2%**.

India at a Glance

Indicator	India
Rank	131st out of 145
Gender parity	64.5%
Improvement since 2006	4.3 percentage points
Global average	69.2%

Beyond the Nugget: Important Gender-Related Indices

Apart from the Global Gender Gap Index, several other indices are used to understand gender inequality and women's empowerment.

1. Gender Inequality Index (GII)

The **Gender Inequality Index (GII)** is published by the **United Nations Development Programme (UNDP)** through its Human Development Report.

It measures gender inequalities across three key dimensions:

- **Reproductive health**
- **Empowerment**
- **Labour market**

The score ranges from **0 to 1**:

- **0:** Women and men fare equally.
- **1:** One gender fares as poorly as possible across all measured dimensions.

2. Gender Development Index (GDI)

The **Gender Development Index (GDI)** is published by the **UNDP**.

It measures gender inequalities in achievement across three basic dimensions of human development:

- **Health**
- **Education**
- **Command over economic resources**

The economic dimension is measured through **female and male estimated earned income**.

3. Global Gender Parity Index (GGPI)

The **Global Gender Parity Index (GGPI)** is a composite scheme developed by the **UNDP and UN Women**.

It assesses the status of women's achievements relative to men's across four dimensions:

- **Life and good health**
- **Education, skill-building and knowledge**
- **Labour and financial inclusion**
- **Participation in decision-making**

4. Women's Empowerment Index (WEI)

The **Women's Empowerment Index (WEI)** is a composite index developed by the **UNDP and UN Women**.

It measures women's empowerment across five dimensions:

- **Health**
- **Education**
- **Inclusion**
- **Decision-making**
- **Violence against women**

A value closer to **1** indicates higher empowerment across the five dimensions, while a value closer to **0** indicates lower empowerment.

Conclusion

The **Global Gender Gap Index 2026** shows that global gender parity has improved gradually, with **69.2% of the overall gap closed**. However, the progress remains uneven across different dimensions.

Education and health are much closer to parity, while **economic participation and political empowerment** continue to show much wider gaps. India, with **64.5% gender parity and a rank of 131st**, has improved since 2006 but remains below the global average.

Breakdown of Civic Infrastructure in India



The breakdown of **civic infrastructure and governance systems** is increasingly becoming a cause of preventable deaths in India. Incidents involving illegal structures, building collapses, encroachments and unsafe establishments point towards deeper problems of **systemic failure, weak enforcement, poor urban planning and lack of accountability**.

Why in News?

- The repeated occurrence of civic infrastructure-related tragedies has raised concerns over the functioning of urban governance and regulatory systems.
- From **illegal billboards collapsing on bystanders** to **unauthorised buildings collapsing**, a similar pattern often follows: arrests are made, some officials are suspended, compensation is provided to victims' families and investigations are announced. However, public attention often fades until another incident occurs.
- The issue therefore goes beyond individual accidents and raises questions about **civic responsibility, regulatory enforcement and administrative accountability**.

Systemic Impunity

A major concern is the alleged involvement or negligence of administrative officials in allowing illegal activities to continue.

Need for Official Accountability

Officials responsible for maintaining civic order need to be held accountable when they knowingly allow violations.

- An official who approves an **unauthorised structure** or knowingly ignores it should face consequences.
- Accountability of officials responsible for enforcement can strengthen compliance with regulations.
- Failure to hold responsible officials accountable can weaken public confidence in civic regulations.

Another concern is that some individuals accused after such incidents may already have **criminal offences registered against them**.

Despite this, illegal activities can continue when the system fails to establish clear accountability for violations.

Poor Urban Planning

- Rapid population growth creates significant administrative challenges, but **poor urban planning** can further increase the risks associated with population pressure.

Unauthorised Colonies

- **Unauthorised colonies in Delhi** are cited as an example of how unplanned urban

development can create serious regulatory challenges.

- Where buildings are constructed without proper approvals or outside effective urban planning mechanisms, owners may be able to construct structures without adequate oversight.
- This can create conditions where regulatory violations become difficult to control.

Encroachment of Public Land

Encroachment on **public land for private use** is another major civic governance concern. Such encroachment can occur across different types of residential areas, including both upscale neighbourhoods and unauthorised colonies. The problem is aggravated when enforcement drives do not consistently address all forms of encroachment.

Selective Enforcement

- Symbolic anti-encroachment drives may not be sufficient to establish long-term compliance.
- If enforcement is applied selectively, certain forms of encroachment may continue.
- Therefore, civic action needs to examine **private encroachment with equal scrutiny**, irrespective of the social or economic background of those responsible.

Safety Regulations and Public Responsibility

- The issue is not limited to government agencies and officials. **Owners, operators and consumers** also have responsibilities in maintaining civic safety.
- A 2025 fire at a **bar in Goa** illustrates the consequences of inadequate safety arrangements. Fireworks were reportedly used indoors during a performance, while limited escape routes and crowding contributed to several deaths.
- Although the establishment was permanently closed and its owners were arrested, concerns remain about whether consumers continue to patronise other establishments operated by the same owners.
- This raises the broader question of **consumer responsibility in enforcing safety standards**.

Role of Consumer Choices

- Consumer behaviour can also influence compliance with regulations.
- The article refers to consumer boycott movements in the **United States**, where established food and coffee chains have experienced sales slowdowns because of consumer reactions to their political positions.
- Similarly, consumers in India could make informed choices regarding establishments that have violated safety regulations, particularly when such violations have resulted in loss of life.
- However, this requires consumers to have access to reliable information.

Need for Public Compliance Information

An ordinary citizen may not remember previous incidents or have sufficient information about an establishment's compliance record.

The absence of easily accessible information such as:

- **Publicly displayed compliance certificates**
- **Safety and regulatory approvals**
- **Records of regulatory violations**
- **Public registries of violations**

can make it difficult for consumers to make informed choices.

Providing access to such information can therefore become an important part of **regulatory transparency and civic governance**.

Strengthening Enforcement

The experience of the **COVID-19 pandemic** demonstrated that establishments could be subjected to strict operating guidelines.

During the pandemic:

- Establishments operated under strict guidelines.
- Deviations from prescribed rules could result in immediate closure.
- Regulatory compliance was closely monitored.

A similar approach to enforcement can be applied to civic and building safety regulations. All buildings and establishments need appropriate monitoring to ensure continued compliance with prescribed guidelines. The possibility of **losing an operating licence** should provide a meaningful incentive for establishments to follow safety and civic regulations.

Key Issues

Issue	Concern
Illegal construction	Buildings constructed without adequate approvals can create safety risks
Administrative accountability	Officials who knowingly ignore violations may weaken enforcement
Poor urban planning	Unplanned development can increase civic and safety problems
Encroachment	Private use of public land can undermine planned urban development
Selective enforcement	Unequal enforcement may fail to establish effective compliance
Safety violations	Poor safety arrangements can turn accidents into major tragedies
Information gaps	Citizens may lack access to compliance and violation records
Weak monitoring	Inadequate monitoring can allow repeated violations

Way Forward

Strengthening civic infrastructure requires more than action after a tragedy. The focus needs to shift towards **prevention, continuous monitoring and accountability**.

Key measures include:

- **Personal accountability** for officials who knowingly ignore serious violations.
- Stronger monitoring of **unauthorised construction**.
- Better **urban planning and regulation** of rapidly growing settlements.
- Equal enforcement against **public-land encroachment**.
- Regular monitoring of establishments for **safety compliance**.
- Greater public access to **compliance certificates and violation records**.
- Effective penalties, including the possibility of **licence cancellation**, for serious or repeated violations.
- Greater awareness among citizens regarding **civic responsibility and safety norms**.

Conclusion

The breakdown of civic infrastructure reflects a wider challenge of **governance, enforcement and civic responsibility**. Repeated tragedies involving illegal construction, encroachment and unsafe establishments show the consequences when regulations are not consistently implemented. Effective civic governance requires accountability not only after an incident but also **before a tragedy occurs**. Strong enforcement, transparent compliance information, better urban planning and continuous monitoring can help make civic infrastructure safer and strengthen public trust in regulatory institutions.

Tackling Food Loss and Waste — India's Opportunity



Food loss and waste remain major challenges for **food security, climate action and sustainable resource use**. India produces enough food to feed its population of around **1.4 billion**, but significant quantities are lost across the value chain. Reducing food loss and waste can provide a **triple win** by

- improving food security and nutrition,
- reducing pressure on natural resources and emissions, and
- increasing farmers' incomes and productivity.

Why in the News?

The **International Day of Awareness of Food Loss and Waste** is observed annually on **September 29**, highlighting the need to reduce food losses and waste. India has developed a strong national evidence base on **post-harvest losses**. Better storage, cooling, drying and processing can significantly reduce losses. Digital tools such as **traceability systems** can improve food supply chains.

- India needs to integrate food loss and waste reduction into:
  - Agricultural planning
  - Food-processing strategies
  - Climate action
  - Investment decisions

India's Evidence Base

India is the only country to have conducted **three national post-harvest loss surveys**, providing detailed information on losses across the agricultural supply chain. The surveys were conducted by the **Ministry of Food Processing Industries** and covered

different commodities and stages **from farm to retail.**

- **2005–07:** 45 commodities
- **2012–14:** 45 commodities
- **2020–22:** 54 commodities

A **fourth round** is currently under way.

The data supports India's reporting of the **Food Loss Index under the Sustainable Development Goals (SDGs)**.

However, data on food waste at the **retail, hotel and restaurant, and household levels** remains less developed.

Reducing Food Loss Across the Value Chain

Food loss also means that the resources used to produce the food are wasted. Reducing losses can therefore support India's **food security, climate and resource-efficiency goals**. The greatest scope for reducing losses lies in improving:

- **Storage**
- Drying
- Cooling
- Moisture management
- Processing
- Digital traceability

Investment should focus on technologies and infrastructure that provide the greatest impact while remaining affordable for **farmers, farmer organisations and small businesses**.

Circular Approaches to Food Waste

Food waste can also be treated as a **resource** rather than simply as waste. Surplus food can be redistributed, while unavoidable organic residues can be converted into useful products. Possible uses include:

- **Compost**
- **Biogas**
- Energy generation
- Redistribution of surplus food

Such approaches can reduce waste while creating additional **economic value**.

Wholesale Markets: An Overlooked Opportunity

Major wholesale markets generate large quantities of organic waste every day. According to assessments by the **FAO and COSAMB**, major wholesale markets can generate up to **100 tonnes of organic waste per day**.

- In some cities, around **one-fifth of urban organic waste** reaches landfills.
- Nationally, wholesale-market organic waste is estimated at around **3.5 million tonnes annually**.
- Treating this waste could offset around **3.3 million tonnes of CO_2-equivalent emissions annually**.
- It could also create opportunities through **carbon credits**.

Municipalities and market committees can improve **waste segregation, collection and treatment**, while developing markets for compost, biogas and other recovered materials.

Bio-CNG: A Potential Model

A **50-tonne-per-day Bio-CNG plant in Surat, Gujarat**, has been operated through a private-sector partnership for more than five years.The plant reportedly reduces **methane-related emissions by around 7,500 tonnes annually**.

Similar models can be adapted to local conditions based on the **commodity mix, waste availability and infrastructure** of different markets.

Investment and Innovation

Reducing food loss requires a shift from isolated interventions towards a **connected national approach**, with financing playing a central role. The **FAO and SIDBI** are working to connect identified food-loss hotspots with climate-resilient technologies.These include:

- Drying technologies
- Moisture-control systems
- Energy-efficient cooling
- Improved storage

SIDBI is also arranging finance to help **small and medium enterprises** adopt such technologies.

Urban Food Loss and Waste Management

Food waste is not limited to farms and wholesale markets. Cities also need systems to measure and reduce waste across the entire urban food chain. The FAO is developing a practical **"Package of Practices"** for Indian cities covering:

- Households
- Wholesale markets
- Retail
- Food services

The approach focuses on **measuring, preventing, reducing, redistributing and valorising** food waste.

Way Forward

India already has **data, technology and workable models** to address food loss and waste. The next step is to connect these efforts through stronger policy and investment. Key priorities include:

- Closing existing **data gaps**.
- Directing investment towards high-impact technologies and infrastructure.
- Making food-loss reduction part of **agricultural and food-processing policies**.
- Integrating it into **urban and climate policies**.
- Promoting affordable solutions for farmers and small businesses.
- Expanding **circular-economy approaches**.

Conclusion

Reducing food loss and waste can provide India with a **triple benefit** of stronger food security, lower environmental pressure and better economic returns. With national data, emerging technologies and successful local models already available, the focus now needs to shift towards **scaling investment, improving infrastructure and integrating food-loss reduction into agricultural, urban and climate policies**.

9% of Students Report Suicidal Thoughts, Finds Supreme Court-Appointed Panel's Survey



September 29, 2026

A nationwide survey by the Supreme Court-appointed **National Task Force (NTF) on student mental health** found that around **15% of students in higher education institutions (HEIs)** experienced a period of severe distress in the previous six months, while **9% reported suicidal thoughts** in the past year. The findings highlight concerns related to **academic pressure, employment worries, discrimination, inadequate counselling and institutional support** in higher educational institutions.

Why in News?

The survey was conducted as part of the NTF's work to examine **student mental health and prevent suicides in HEIs**. The survey received responses from over **2.43 lakh students**. Around **67%** of respondents belonged to **SC, ST and OBC** categories. Around **34%** reported feeling like an outsider on campus to varying degrees.

- About **15%** reported a period of severe distress, low mood or anxiety in the previous six months.
- **9%** reported experiencing suicidal thoughts often or very often in the past year.
- Around **32%** said their institution did not provide counselling services.
- The NTF's final report is expected by **October 31, 2026**.

Key Findings on Student Mental Health

The survey points to a combination of academic, social and employment-related pressures affecting students. Concerns about **academic choices and future employment** were commonly reported.

- **56%** of students expressed trust in their administration to handle serious issues fairly.
- Around **32%** reported a lack of counselling services.
- About **34%** felt like outsiders on campus to varying degrees.
- Students also reported concerns related to social discrimination and institutional support.

Social Discrimination and Campus Environment

The NTF's interim findings had identified several forms of discrimination and unequal treatment in higher educational institutions. These included concerns related to **caste, gender and social background**.

Reported issues included:

- Caste-based humiliation and discrimination.
- Identification of caste through **NEET-UG and JEE ranks**.
- Differences in admission, grading and faculty attention.
- Gender discrimination in some institutions.

- Concerns over hostel curfews and **moral policing**.
- Reports of sexual harassment in some medical and engineering institutions.

Academic Pressure and Institutional Problems

Students also reported several academic and administrative difficulties. These problems varied across disciplines and institutions. Major concerns included:

- Strict **attendance requirements**.
- Demanding academic schedules.
- Academic and clinical overload in medical education.
- Long on-call hours for medical students.
- Intense competition due to **relative grading and placement criteria** in engineering institutions.
- Faculty shortages in some State universities.
- Insufficient academic support.
- Inadequate practical training in some dental, nursing and mental-health institutions.
- Problems involving **PhD supervisors**, including neglect, excessive control and exploitation.

Need for Stronger Student Support Systems

The emerging findings point towards the need for more standardised systems for identifying and responding to student mental-health concerns. However, the NTF has cautioned that the current findings are **preliminary** because the survey sample is not fully representative. The emerging recommendations include:

- Standardised **student support systems**.
- Faculty training on student mental health.
- **Stigma reduction** measures.
- Crisis **Standard Operating Procedures (SOPs)**.
- Regular monitoring using reliable data.
- Responsive and transparent institutional administration.
- Better access to **counselling services**.

National Task Force

The **National Task Force** was constituted by the Supreme Court in **March 2025** to examine student mental health and well-being and address the rising incidence of student suicides in higher educational institutions. The task force is headed by **Justice S. Ravindra Bhat** and includes experts from fields such as psychiatry, clinical psychology, gender studies and disability rights.

The NTF has also conducted institutional visits and stakeholder consultations across **Delhi-NCR, Tamil Nadu, Karnataka, Assam and West Bengal**.

Limitations of the Survey

The findings need to be interpreted carefully because the NTF has stated that the current sample is **not representative** of all higher educational institutions.

- More than **2.43 lakh students** responded to the survey.
- Institutional visits covered **19 institutions** through 30 meetings.
- The limited number of institutional sites means the findings cannot automatically be treated as representative of all HEIs.
- Some survey responses are still being analysed.

Way Forward

Student well-being requires institutions to address both **mental-health support and the academic and social conditions** that may contribute to distress. Stronger counselling systems, trained faculty, transparent grievance mechanisms and regular monitoring can help institutions respond to student concerns more effectively.

Conclusion

The NTF survey highlights significant concerns related to **student mental health, academic pressure, discrimination and institutional support** in higher education. While the findings are preliminary and not fully representative, they underline the need for **accessible counselling, trained faculty, crisis-response systems, transparent administration and better monitoring**. A stronger student-support framework can help higher educational institutions create a safer and more supportive learning environment.

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Economics

BIO-NIVESH Platform Launched to Support Biotechnology Startups



Why in News?

- The **Union Minister of State (Independent Charge) for Science & Technology** recently launched the **BIO-NIVESH platform**.
- The platform aims to connect **biotechnology startups with investors** and increase the flow of **private capital** into promising innovations.

About BIO-NIVESH Platform

- BIO-NIVESH is designed to support biotechnology innovations that are ready for **scale-up and commercialisation**.
- It aims to create stronger connections between:
  - **Biotechnology startups**
  - **Investors**
  - **Industry**
  - **Innovation ecosystems**
- The platform is planned as a **recurring initiative**.
- Future editions are proposed to be organised in **different cities** to expand participation and connect regional biotechnology ecosystems.

Two-Way Engagement

- BIO-NIVESH is designed as a **two-way interaction platform**.
- It enables:
  - **Startups:** Understand how investors assess businesses and investment opportunities.
  - **Investors:** Gain a better understanding of the **scientific, regulatory and development pathways** involved in biotechnology.

Inaugural BIO-NIVESH Edition

- The first edition brought together:
  - **20 high-potential biotechnology and deep-tech startups**
  - Around **50 investors**
- Startups were selected based on factors such as:
  - **Innovation**
  - **Stage of development**
  - **Market potential**
  - **Scalability**
  - **Regulatory readiness**

Key Sessions

- **First Session:**
  - Focused on direct **startup–investor interactions**.
  - Startups presented their technologies and development potential to investors.
- **Second Session:**
  - Included discussions involving **ministers, investors and startups**.
  - Key areas included:
    - **Access to capital**
    - **Commercialisation**
    - **Scale-up**
    - Support for **innovation-led growth**

Significance

- BIO-NIVESH seeks to bridge the gap between **scientific research, entrepreneurship, industry and markets**.
- It can help promising biotechnology ideas move from the **research stage to commercial scale**.
- The platform can also strengthen India's **biotechnology startup ecosystem** by improving access to private investment and industry connections.

Telangana Secures ₹599 Crore Under AgriStack Programme



Why in News?

- **Telangana** has received a total of **₹599 crore in central incentives** for achieving key milestones under the Centre's **AgriStack programme**.
- The incentives are linked to progress in building digital infrastructure for the **agriculture sector**.

About AgriStack

- **AgriStack** is a **Digital Public Infrastructure (DPI)** for the farm sector.
- It is an initiative under the **Digital Agriculture Mission (DAM)**.
- The **Union Cabinet approved the Digital Agriculture Mission in September 2024**.
- AgriStack is built around three major digital registries:
    - **Farmer Registry**
    - **Geo-referenced Village Map Registry**
    - **Crop Sown Registry**
- These registries are created and maintained by **State Governments and Union Territories**.

1. Farmer Registry

- Under AgriStack, farmers are provided a **digital identity called Farmer ID**.
- The Farmer ID is dynamically linked with information such as:
    - **Land records**
    - **Livestock ownership**
    - **Crops cultivated**
    - **Demographic details**
    - **Family details**
    - **Government schemes**
    - **Benefits already received**
- **Target:** Creation of digital identities for around **11 crore farmers**.
- The Centre provides financial assistance to States for developing their Farmer Registries under the **Special Assistance to States for Capital Investment**.
- The system will allow farmers to access various **government services and benefits digitally**.
- The target for completing the Farmer Registry with dynamic **Records of Rights (RoR) synchronisation** is:
    - **March 2027:** Most States
    - **March 2028:** Northeastern States

2. Crop Sown Registry

- It contains information on the **crops cultivated by farmers**.
- Data is collected through **mobile-based Digital Crop Surveys** conducted on the ground during each crop season.

3. Geo-Referenced Village Map Registry

- It contains geographical information about **land records linked to their actual locations**.
- Locations are mapped using **latitude and longitude coordinates**.
- **Target:** Cover all villages by **March 2027**.

Benefits of AgriStack

- Once fully implemented, AgriStack can provide farmers with a **paperless and contactless digital system** for accessing agricultural services.
- Major benefits include:
    - **Paperless and contactless crop loans**
    - Faster and more transparent **crop insurance claim settlement**
    - Timely access to **agricultural inputs**
    - **Personalised advisories** on pests and diseases
    - **Direct Benefit Transfer (DBT)** of government scheme benefits
    - Easier procurement of agricultural produce at **Minimum Support Price (MSP)**

Significance

- AgriStack can help the government deliver agricultural services in a more **transparent, efficient and technology-driven manner**.
- It aims to improve both the **accessibility and effectiveness of government support** available to farmers.

Financial Fraud Risk Indicator



Why in News?

The **Department of Telecommunications (DoT)** has prevented suspected cyber fraud losses of more than **₹5,000 crore** through its **Financial Fraud Risk Indicator (FRI)** in the 15 months since its launch.

About Financial Fraud Risk Indicator

- **FRI** was launched in **May 2025** by the **Digital Intelligence Unit (DIU)** of DoT.
- It is a **risk-based metric** that identifies mobile numbers based on their likelihood of being linked to financial fraud.

- Mobile numbers are classified into three categories:
  - **Medium Risk**
  - **High Risk**
  - **Very High Risk**
- The classification uses inputs from multiple sources, including:
  - **National Cybercrime Reporting Portal (NCRP)**
  - DoT's **Chakshu** platform
  - Intelligence shared by **banks and financial institutions**
- Banks, **NBFCs** and **UPI service providers** can use the FRI to take appropriate measures for **customer protection and transaction validation**.

Digital Intelligence Unit

- The **Digital Intelligence Unit (DIU)** was launched in **2024** by the DoT.
- It is a secure, nationwide platform for **intelligence sharing and coordination**.
- It aims to tackle **telecom-enabled cyber fraud** and misuse of telecom resources.
- It enables real-time coordination among **telecom service providers, banks, financial institutions, law enforcement agencies and government departments**.
- It facilitates sharing of actionable intelligence related to the **Mobile Number Revocation List (MNRL)**, suspected fraudulent mobile numbers and other digital identifiers.
- This creates a **whole-of-ecosystem approach** to preventing telecom-related financial fraud.

FIU-India Issues Notices to 15 Virtual Digital Asset Service Providers

The **Financial Intelligence Unit-India (FIU-IND)** has issued notices to **15 Virtual Digital Asset Service Providers (VDA SPs)** for non-compliance with obligations under the **Prevention of Money Laundering Act (PMLA), 2002**. The action highlights the government's efforts to strengthen oversight of the digital asset sector and prevent money laundering.

Why in News?

The FIU-IND Director issued notices under **Section 13 of the PMLA, 2002** to 15 VDA service providers for alleged non-compliance with the law.

- **FIU-IND** was established by the Government of India in **2004**.
- It is the central agency responsible for receiving, processing, analysing and disseminating information on **suspicious financial transactions**.
- It functions as an **independent body** reporting directly to the **Economic Intelligence Council (EIC)**, headed by the Finance Minister.
- It receives financial reports such as:
  - **Cash Transaction Reports (CTRs)**
  - **Non-Profit Organisation Transaction Reports (NTRs)**
  - **Cross-Border Wire Transfer Reports (CBWTRs)**
- It analyses financial information to identify patterns linked to **money laundering and related crimes**.
- It shares financial intelligence with **law-enforcement and regulatory agencies in India and foreign Financial Intelligence Units**.
- It maintains a **national financial intelligence database** based on reports received from reporting entities.
- It also monitors **money-laundering trends and emerging typologies** and strengthens national and international cooperation against financial crimes.

Market Infrastructure Institutions (MIIs)



SEBI recently proposed extending the **IT and cybersecurity framework** applicable to Market Infrastructure Institutions (MIIs) to their **subsidiaries** as well.

About Market Infrastructure Institutions

- **MIIs** are institutions that provide the basic infrastructure needed for the smooth functioning of **India's capital markets**.
- The three main types of MIIs are:
  - **Stock Exchanges** – provide platforms for buying and selling securities.
  - **Clearing Corporations** – handle clearing and settlement of trades.
  - **Depositories** – maintain records and electronic holdings of securities.
- They support activities such as **trading, clearing, settlement and safekeeping of securities**.
- Their uninterrupted functioning is important because any major disruption can affect the **wider financial system**.
- MIIs are **profit-making corporate entities**, but they also perform important **public-interest and regulatory functions**.
- They act as **first-line regulators** by supervising entities such as trading members, clearing members and depository participants.
- Because of their systemic importance, MIIs are required to maintain strong corporate governance, risk management and cybersecurity standards.
- All MIIs operating in India's securities market are required to be **registered with SEBI**.
- Their regulatory framework focuses strongly on **investor protection, market integrity and financial stability**.

Advance Authorisation Scheme



Why in News?

The government has increased the **stockholding limit for bulk sugar consumers from 15 days to 30 days**. However, sugar held beyond the earlier 15-day limit must be sourced **only from sugar imported under the Advance Authorisation Scheme (AAS)**.

About Advance Authorisation Scheme

- It is an **export promotion scheme** administered by the **Directorate General of Foreign Trade (DGFT)**.
- It allows **duty-free import of inputs** that are physically incorporated into goods meant for export.
- Certain inputs such as **packaging materials, fuel, oil and catalysts** used during production may also be covered.
- Imports are exempt from specified duties, subject to the scheme's conditions.

Major Duty Exemptions

Depending on the applicable conditions, imported inputs may receive exemption from:

- **Basic Customs Duty**
- **Additional Customs Duty**
- **Anti-dumping Duty**
- **Safeguard Duty**
- **Integrated GST**
- **Compensation Cess**
- Other applicable duties under the scheme.

Export Obligation

- The importer normally has to fulfil a specified **export obligation** as a condition of receiving Advance Authorisation.
- This links the duty-free import of inputs with the production and export of finished goods.

Who Can Use It?

- **Manufacturer exporters** – manufacturers producing goods for export.
- **Merchant exporters** – exporters who procure goods from a **supporting manufacturer** for export.

Eligible Supplies

Advance Authorisation can be issued for:

- **Physical exports**
- **Intermediate supplies**
- Supplies to specified categories of **deemed exports**
- Supply of **stores** to foreign-going ships or aircraft, where applicable **Standard Input Output Norms (SION)** exist.

Validity

- Advance Authorisation is generally valid for **12 months from the date of issue**.

Urban Infrastructure and Governance in India



Why in News?

Recent urban tragedies, including **open manhole deaths, flooded construction sites, fires and severe waterlogging**, have exposed serious weaknesses in **civic infrastructure, urban planning and governance**.

- These incidents point to gaps in **master planning, municipal capacity, enforcement and accountability**.
- Rapid urbanisation has increased pressure on infrastructure, leading to problems such as **urban flooding, poor mobility, safety failures and unequal access to basic services**.

What is Civic Infrastructure?

- **Civic infrastructure** includes the basic **physical facilities and institutional systems** needed for the proper functioning of cities.

Importance of Strong Civic Infrastructure

- **Fundamental Rights:** Access to safe water, sanitation, public spaces and basic infrastructure is linked to **Article 21 – Right to Life with Dignity**.
- In **Municipal Council, Ratlam v. Vardichand (1980)**, the Supreme Court recognised the responsibility of municipal bodies to protect **public health and sanitation**.
- **Human Capital:** Better civic facilities can improve the **quality of life** and help retain skilled professionals who may otherwise migrate in search of better living conditions.
- **Economic Growth:** Good infrastructure can attract **FDI, private investment and formal employment**, while poor infrastructure can discourage investment and increase distress migration.
- **Public Health:** Inadequate drainage, waste management and unsafe water can increase **waterborne and vector-borne diseases**, healthcare costs and productivity losses.
- **Social Equity:** Affordable housing, public transport and social infrastructure help vulnerable groups access opportunities and reduce **intergenerational poverty**.

Key Developments in Urban Infrastructure

- **Metro Expansion:** India has developed more than **900 km of operational metro networks**, strengthening public transport and supporting low-carbon mobility.
- **Namo Bharat:** The **Delhi–Meerut RRTS** is India's first RRTS and aims to improve regional connectivity and encourage more balanced urban growth.
- **Atal Setu:** The **21.8-km sea bridge** connects Mumbai and Navi Mumbai and has improved regional connectivity.
- **Swachh Bharat Mission-Urban:** Focuses on **sanitation, ODF status and scientific waste management**. **Indore** has emerged as an important example of effective implementation.

- **Smart Cities Mission: Integrated Command and Control Centres (ICCCs)** in 100 cities use **IoT, GIS and data analytics** for traffic management, utility monitoring and disaster response.
- **Transit-Oriented Development (TOD):** Encourages **high-density and mixed-use development around public transport corridors**, reducing urban sprawl and improving land-use efficiency.
- **MICE Infrastructure:** Major facilities such as **Bharat Mandapam, Yashobhoomi and Surat Diamond Bourse** have strengthened India's convention, exhibition and business infrastructure.

Major Challenges in Urban Infrastructure

1. Institutional Fragmentation

- Large cities often have several agencies such as **municipal corporations, development authorities and water boards** working separately.
- This creates overlapping responsibilities and weakens accountability.
- The **Mumbai Ghatkopar hoarding collapse (2024)** highlighted problems arising from unclear jurisdiction between different authorities.

2. Weakening of Urban Local Bodies

- Despite the **74th Constitutional Amendment Act, 1992**, State governments often rely on parastatal agencies instead of elected **Urban Local Bodies (ULBs)**.
- This weakens local democratic control over urban planning.
- **Metropolitan Planning Committees under Article 243ZE** remain largely ineffective or have not been properly constituted.

3. Deficiencies in Master Planning

- A **NITI Aayog report on urban planning capacity** noted that more than **65% of urban settlements lack statutory Master Plans**.
- The **Delhi coaching centre tragedy of July 2024** exposed failures in land-use regulation, drainage management and enforcement.

4. Poor Ecological Planning

- Excessive **concretisation** has damaged natural drainage systems and reduced the ability of cities to absorb rainwater.
- The **Bengaluru water crisis and recurring floods** demonstrate the consequences of disturbing natural water channels and drainage networks.
- Wetlands, floodplains and other natural areas are increasingly being converted for **real estate and transport infrastructure**.

5. Weak Safety and Maintenance

- The **Delhi Airport canopy collapse in June 2024** raised concerns about **structural audits, lifecycle maintenance and climate-resilient infrastructure**.
- Infrastructure needs regular inspection and maintenance rather than attention only after accidents occur.

6. Limited Municipal Finances

- The **Second Administrative Reforms Commission** and the **High-Powered Expert Committee on Urban Infrastructure** highlighted inadequate devolution of the **3Fs — Funds, Functions and Functionaries**.
- Municipal revenue remains around **1% of GDP**, much lower than in countries such as South Africa and Brazil.
- ULBs continue to depend heavily on **State and Central transfers**.
- Weak property-tax collection and an underdeveloped **municipal bond market** further restrict the ability of cities to finance infrastructure.

7. Weak Blue-Green Infrastructure

- Urban development often gives greater importance to **grey infrastructure**, such as concrete drains and roads, while neglecting **blue-green infrastructure** such as wetlands, retention ponds and urban forests.
- Increased impermeable surfaces reduce the ability of cities to retain rainwater.
- This contributes to **urban flooding and waterlogging**.

8. Poor Non-Motorised Transport

- Many cities lack safe and continuous infrastructure for **pedestrians and cyclists**.
- Footpaths and cycle tracks are often **encroached upon, poorly designed or inadequately maintained**.
- Weak coordination between land-use and transport planning also limits the

effectiveness of **Transit-Oriented Development**.

9. Climate Vulnerability

- Increasing concrete surfaces intensify the **Urban Heat Island (UHI) effect**, increasing urban temperatures and heat stress.
- At the same time, **extreme rainfall and cloudbursts** can overwhelm outdated drainage systems.
- This highlights the need for **climate-resilient urban infrastructure**.

10. Weak Accountability

- Post-disaster responses often focus on **inquiries, compensation and suspension of junior officials** rather than establishing responsibility across the entire chain.
- The **Saket building collapse in May 2026**, which killed six people despite earlier MCD notices, highlighted concerns about enforcement.
- Weak personal accountability can allow **regulatory violations and unsafe construction practices** to continue.
- The **Municipal Council, Ratlam v. Vardichand (1980)** judgment had already established the duty of municipal authorities towards **public health, sanitation and safety**.

Government Initiatives

- **AMRUT 2.0:** Focuses on making statutory towns **water-secure**, improving sewerage coverage, rejuvenating water bodies and promoting a circular approach to water management.
- **PMAY-U:** Works to address the **urban housing shortage** by providing affordable pucca houses to eligible urban households.
- **PM-eBus Sewa:** Aims to strengthen urban public transport through **10,000 electric buses** under a PPP model.

Best Practices

- **Surat and Ahmedabad:** Use **Town Planning schemes** for land pooling and infrastructure planning before development, along with **BRTS**.
- **Odisha's Jaga Mission:** Provides **land rights to slum dwellers** while upgrading settlements with basic infrastructure, reducing dependence on eviction-based approaches.
- **Singapore Model:** Focuses on **integrated water management, strict zoning regulations and a unified authority for urban planning**.

India's First Blue Bond Issuance



India is set to enter the **blue finance market** with its first **blue bond**, to be issued by **Sagarmala Finance Corporation Limited (SMFCL)**, the country's first **maritime sector-specific NBFC**.

- The bond aims to raise **long-term funds** for sustainable maritime infrastructure and projects linked to the **ocean economy**.

Issuance Structure

- SMFCL plans to raise **₹600 crore** through **10-year debt securities**.
- The issue includes a **base issue** along with a **₹500 crore greenshoe option**.

What are Blue Bonds?

- **Blue bonds** are specialised **debt instruments** designed to finance the sustainable use and protection of **marine and water resources**.
- They are considered a category of **green bonds**.
- They can fund projects related to:
  - **Sustainable shipping**
  - **Ocean-based renewable energy**
  - **Marine biodiversity conservation**
  - **Sustainable fisheries**
  - **Water recycling**

- **Coastal mapping**

Use of Funds

The funds raised will be used during the current financial year for:

- **Lending to the maritime sector**
- Development of **greenfield port projects**
- Expansion of the **coastal road network**

Institutional Participation

- **SBI Capital Markets** has been appointed as the **arranger** for the issue.
- It will help attract long-term institutional investors such as **insurance companies and provident funds**.

Blue Bonds in the Municipal Sector

- Following the SMFCL initiative, **Vadodara Municipal Corporation** plans to raise around **₹200 crore through blue bonds**.
- This would bring **water- and ocean-related thematic financing** into the debt market of **Urban Local Bodies (ULBs)**.

Global Examples

- **Seychelles:** Issued the world's first **sovereign blue bond in 2018**, with support from the World Bank's **SWIOFish3 project**.
- **Belize:** Used a **debt-for-ocean swap in 2021** to generate resources for **marine conservation**.

India Post Payments Bank (IPPB)



Why in News?

India Post Payments Bank (IPPB) observed its **9th Foundation Day (IPPB Day 2026)** on **1 September 2026**.

Key Facts About IPPB

Establishment

- **India Post Payments Bank** was launched on **1 September 2018**.
- It functions under the **Department of Posts, Ministry of Communications**.
- It is **100% owned by the Government of India**.

Objective

- IPPB was established to provide **accessible, affordable and reliable banking services** to citizens.
- It focuses particularly on addressing the banking needs of the **unbanked and underbanked population**.

Last-Mile Banking Network

- IPPB uses the extensive **India Post network** to provide banking services at people's doorsteps.
- The network includes around **1.65 lakh post offices**, of which nearly **1.40 lakh are in rural areas**.
- Nearly **3 lakh postal employees** support the delivery of these services.

Customer Reach

- IPPB has around **13.25 crore customers**.
- About **77% of its customers are from rural areas**.
- **Women account for around 49%** of its customer base.
- Around **6.5 crore Direct Benefit Transfer (DBT) beneficiaries** have received government benefits through IPPB.
- The total value of these DBT transfers is approximately **₹1.55 lakh crore**.

Digital Banking Model

IPPB follows a **Paperless, Cashless and Presence-less** banking approach.

- It uses **India Stack** and a **Core Banking System (CBS)**.
- Postal staff use **smartphones and biometric devices** to provide banking services.
- This model enables banking services to reach customers even in areas with limited access to traditional bank branches.

New Savings Products

SHG Savings Account

- Designed for **Self Help Groups (SHGs)** and rural micro-entrepreneurs.
- Provides a simple and secure banking facility for group-based financial activities.

Surakshit Savings Account

- Provides **₹25,000 cyber-insurance coverage**.

- Covers risks such as **phishing, spoofing and SIM-jacking**.

Sampoorna Savings Account

- Combines **financial services with health and cyber-protection benefits**.
- Includes wellness and insurance-related features.

Significance of IPPB

Financial Inclusion

- Expands access to formal banking services in **rural and underserved areas**.
- Its large postal network helps overcome the problem of limited physical banking infrastructure.

Digital India

- Promotes **digital payments, Aadhaar-based services and DBT delivery**.
- Supports the shift towards a **less-cash and digitally enabled economy**.

Women and Rural Empowerment

- The high share of **rural and women customers** highlights IPPB's role in expanding access to financial services among underserved groups.

Bridging the Banking Gap

- Its **doorstep banking model** helps connect people in remote areas with formal financial services.
- It supports the broader goal of achieving **universal financial inclusion**.

CRR Reduction for Green Deposits



Why in News?

Public sector banks have approached the **Reserve Bank of India (RBI)** seeking a lower **Cash Reserve Ratio (CRR)** for **green deposits** to encourage green lending and support India's transition towards a **net-zero economy**.

- Banks have proposed an initial **CRR reduction of up to 100 basis points (1%)** on green deposits.
- The move is intended to make **green lending more attractive and reduce its funding cost**.

Why is a CRR Cut Being Proposed?

- Green deposits require regular monitoring and evaluation of projects to ensure that funds are used for genuine green activities.
- This increases the **compliance and monitoring costs** for banks.
- A lower CRR would:
  - Reduce the **cost of funds** for banks.
  - Release additional capital for **green lending**.
  - Encourage banks to give greater priority to environmentally sustainable projects.
- Banks and NBFCs also need a clear **climate finance taxonomy** and coordinated regulatory framework to attract **long-term global capital**.

Current Green Deposit Scenario

- Green deposits mobilised during **2025–26** were around **₹4,000–5,000 crore**.
- This remains relatively small compared with the financing required for India's climate transition.
- According to the **NITI Aayog** report *Scenario towards Viksit Bharat & Net Zero – Financing Needs*, India needs around **USD 22.7 trillion in cumulative investment** to achieve its net-zero transition.

What are Green Deposits?

- A **green deposit** is an **interest-bearing deposit** accepted by a regulated entity, such as a bank or NBFC, for a specified period.
- The funds raised through these deposits must be used only for **eligible green projects**.

Eligible Sectors

Under the **RBI Green Deposit Framework, 2023**, funds can be directed towards areas such as:

- **Renewable energy**
- **Waste management**
- **Clean transportation**
- **Climate change adaptation**
- **Energy efficiency**

Green Deposits vs Green Bonds

- **Green Deposits:** Deposits accepted by banks or other regulated entities, with the funds earmarked for eligible green projects.
- **Green Bonds: Debt securities** issued to raise funds specifically for environmentally sustainable projects.

Cash Reserve Ratio (CRR)

- **CRR** is the portion of a bank's **Net Demand and Time Liabilities (NDTL)** that must be maintained as **cash reserves with the RBI**.
- Banks **do not earn interest** on the funds maintained under CRR.
- **Higher CRR:** Reduces the amount of money available with banks for lending and therefore tightens liquidity.
- **Lower CRR:** Releases more funds for lending and increases the banking system's available liquidity.

Emergency Credit Line Guarantee Scheme (ECLGS) 5.0



Why in News?

The **ECLGS 5.0**, approved by the Government in **May 2026**, aims to strengthen **liquidity support for businesses** facing external economic disruptions.

- It enables eligible **MSMEs, non-MSME businesses and scheduled passenger airlines** to access government-backed credit support.
- The scheme will remain operational until **31 March 2027** or until guarantees worth **₹2.55 lakh crore** are issued, whichever is earlier.

Key Features

- **Objective:** Provide **government-backed credit guarantees** so lending institutions can extend additional working capital to eligible businesses.
- **Implementing Agency: National Credit Guarantee Trustee Company (NCGTC)**.
- **Credit Support:** Facilitates additional credit flow of up to **₹2.55 lakh crore**.
- **Guarantee Coverage:**
  - **MSMEs:** 100%
  - **Eligible non-MSMEs:** 90%

Evolution of ECLGS

- Originally launched in **2020** under the **Aatmanirbhar Bharat Package** to address pandemic-related financial stress.
- Initially provided **100% government-backed guarantees** to enable lending institutions to provide additional credit.
- Later phases expanded its coverage based on changing sectoral requirements.
- Digital access was strengthened through the **Jan Samarth Portal**.

Performance

- Under **ECLGS 1.0–4.0:**
  - **1.19 crore guarantees**
  - Worth **₹3.68 lakh crore**
- Under **ECLGS 5.0**, as of **20 August 2026:**
  - **6,73,979 guarantees**
  - Worth **₹2,50,024 crore**
- **MSMEs** account for:
  - **97.3%** of guarantees by number.
  - **80.79%** of the guaranteed amount.

Coverage

- Covers:
  - **MSMEs across all sectors**
  - Eligible **non-MSME businesses**
  - **Scheduled passenger airlines**
- Specified non-MSME sectors such as **NBFCs, power, telecom, IT, sugar, tobacco and educational institutions** are excluded.

Support to Airlines

- Eligible airlines must have qualifying credit facilities outstanding as of **31 March 2026** and maintain **Standard accounts**, excluding SMA-2.
- They receive **90% guarantee coverage**.

- Additional credit support can be up to **100% of eligible credit facilities**, subject to a maximum of **₹1,500 crore per borrower**.

Significance

- Improves **liquidity availability** for businesses.
- Supports **business continuity and resilience**.
- Helps maintain **domestic production and supply chains**.
- Supports **employment**.
- Extends ECLGS from a primarily **pandemic-response mechanism** towards a broader tool for **business resilience and economic stability**.

Bamboo Economy: Sustainable Livelihood and Green Growth



Why in News?

Recently, **bamboo** has gained importance as a **sustainable livelihood resource** due to its growing use in **rural entrepreneurship, handicrafts, construction and green industries**.

Bamboo Economy

- **Livelihood Resource:** Bamboo has traditionally supported **rural and tribal communities** through handicrafts, construction and small-scale enterprises.
- Its uses range from **food products and traditional crafts to furniture, construction materials and industrial products**.

Policy Transformation

- Under the **Indian Forest Act, 1927**, bamboo was earlier classified as a **"tree"**, creating restrictions on its harvesting and transportation.
- In **2017**, bamboo grown outside forest areas was removed from the definition of "tree".
- This reduced regulatory barriers and encouraged:
  - **Private cultivation**
  - **Value addition**
  - **Bamboo-based entrepreneurship**
  - Greater opportunities for **farmers and artisans**

Technology and Value Addition

- The **North East Centre for Technology Application & Reach (NECTAR)** has promoted bamboo technologies in:
  - Food and agro-processing
  - Construction
  - Manufacturing
  - Renewable energy
  - Industrial products
- These interventions have generated around **30 million man-days of employment annually**.
- Value addition in bamboo products has increased from around **10% to as high as 70%**.

Role in Northeast India

States such as **Tripura, Nagaland, Mizoram and Sikkim** are promoting bamboo-based:

- Handicrafts
- Furniture
- Food products
- Modern manufacturing

This creates opportunities for **tribal entrepreneurship, MSMEs and rural employment**.

National Bamboo Mission (NBM)

- **Launch:** Started in **2006–07** and restructured as a **Centrally Sponsored Scheme in 2018–19**.
- **Objective:** Promote the **holistic development of the bamboo sector**.
- **Value Chain:** Uses a **cluster-based approach** to connect farmers with industries and consumers.
- **Planting Material:** Promotes quality planting material through **new and strengthened nurseries**.
- **Green Economy:** Promotes bamboo products and seeks to establish bamboo as **"Green**

Gold" supporting rural livelihoods and the **green bioeconomy**.

Engineered Bamboo

- Engineered bamboo is produced by **binding and compressing bamboo fibres, strips or particles**.
- It expands bamboo's use beyond traditional handicrafts into **modern construction**.
- More than **42 lakh sq ft of engineered bamboo structures** have been developed for disaster relief and rehabilitation.
- This includes **576 bamboo-based classrooms in Chhattisgarh**, benefiting around **20,000 children**.

Skill Development

- In **June 2026**, **CSIR-NEERI, Nagpur** conducted a five-day bamboo handicraft training programme for **women SHGs**.
- Training covered:
    - Bamboo harvesting and treatment
    - Processing
    - Handicraft production
    - Product development
    - Entrepreneurship
    - Branding and marketing
    - Design
- The programme also demonstrated bamboo cultivation on **reclaimed fly-ash dump sites**, linking livelihood creation with the productive use of degraded land.

Women Empowerment

- Women's **Self-Help Groups (SHGs)** are increasingly participating in bamboo-based handicrafts, manufacturing and entrepreneurship.
- **Gadchiroli Agarbatti Project, Maharashtra:**
    - Established **32 production centres**
    - Employs around **1,100 people**
    - Nearly **90% are women**
    - Increased employment from **45–60 days to more than 225 days annually**
    - Reduced dependence on forests
- Bamboo enterprises therefore support **income generation, skill development and women's leadership**.

Bamboo: Key Facts

- **Family:** Bamboo belongs to the subfamily **Bambusoideae** of the grass family **Poaceae**.
- **Diversity:** More than **115 genera and 1,400 species**.
- **Distribution:** Mainly found in **tropical, subtropical and mild temperate regions**, with high diversity in **East and Southeast Asia and the Indian subcontinent**.
- **Growth:** It is a **fast-growing perennial plant** with woody, hollow stems arising from underground **rhizomes**.
- Some species can grow up to **30 cm per day** under favourable conditions and exceed **40 metres** in height.
- **Regeneration:** Bamboo regenerates rapidly after harvesting and is mainly propagated through **vegetative methods**.
- **Propagation:** Seed-based propagation is limited because of **irregular flowering**.
- **Nickname:** Often called **"poor man's timber"** because of its wide range of uses and livelihood potential.
- **Suitable Conditions:** Grows well in **warm climates** and well-drained sandy to clay soils, generally preferring a **pH of 4.5–6.0**.
- **Livelihood Potential:** Provides long-term income through **handicrafts, construction, furniture and other value-added products**.
- **Major Concentration:** Bamboo resources are concentrated in **Northeastern states**, including **Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura**.
- **Cultural Importance:** Used traditionally for **fishing nets, baskets, musical instruments, housing materials and handicrafts**.

Platform for Aggregating Clean Transport (PACT)



Why in News?

NITI Aayog recently launched the **Platform for Aggregating Clean Transport (PACT)** at the **5th e-FAST India Summit 2026**.

About e-FAST India Initiative

- **e-FAST India** stands for **Electric Freight Accelerator for Sustainable Transport – India**.
- It is a **government–industry platform** led by NITI Aayog.
- It focuses on shifting **medium- and heavy-duty freight transport** towards **zero-emission vehicles**.
- It brings together key stakeholders such as:
    - Vehicle manufacturers (**OEMs**)
    - Logistics Service Providers (**LSPs**)
    - Financiers
    - Shippers
    - Charge Point Operators (**CPOs**)

Platform for Aggregating Clean Transport (PACT)

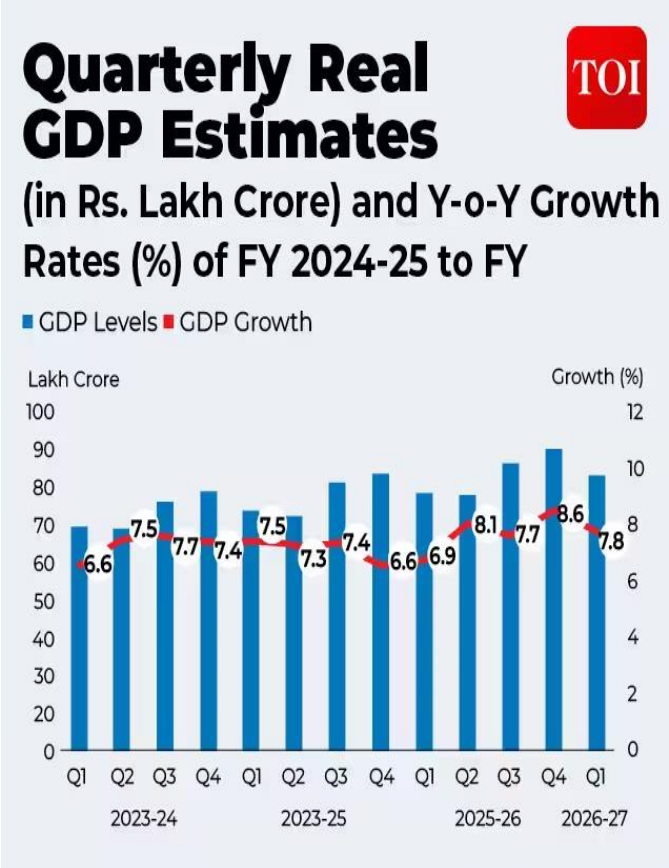
- PACT is a **flagship initiative under e-FAST India**.
- It aims to **aggregate freight demand** from shippers, LSPs and other stakeholders.
- The aggregated demand is converted into **deployment opportunities across identified freight corridors**.
- It brings together **shippers, LSPs, vehicle manufacturers, financiers and CPOs**.
- It will help:
    - Improve **visibility of freight demand**
    - Support **charging infrastructure planning**
    - Strengthen the **commercial viability** of electric medium- and heavy-duty vehicles (**e-MHDVs**).

EDITORIALS

Crux of The Hindu & Indian Express

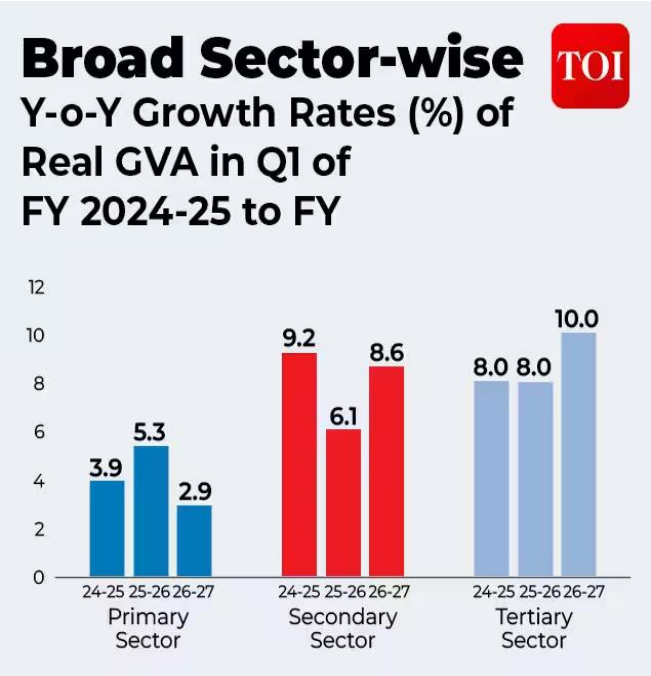
Economics

India's Economy Grows at 7.8% Despite Global and Domestic Challenges



- India's economy grew by **7.8% in the April–June quarter of FY 2026–27**, beating the RBI's **7% estimate**.
- The strong performance came despite several challenges, including:
    - **Conflict in the Middle East**
    - Pressure on **global oil prices**
    - A **weak monsoon** affecting the agricultural outlook
    - Continued uncertainty in **global financial markets**
- The growth was supported mainly by **manufacturing, services, investment and domestic consumption**. The strong domestic demand also helped India absorb some of the impact of global uncertainty.

7 Key Drivers of 7.8% Growth



1. Strong Domestic Consumption

- Private Final Consumption Expenditure grew **7.1% in real terms** in Q1 FY27.
- In July, **GST revenue rose 15.4%**, digital payments increased **16.6%**, and electricity demand grew **10.7%**.
- Petrol and diesel consumption increased by **9.2% and 10%**, respectively.
- July passenger-vehicle sales rose **34.3%**, tractor sales **28.1%** and two-wheeler sales **28.3%**.

2. Services Remain a Major Growth Engine

- The services sector expanded by **10%** in Q1 FY27.
- Financial, real estate, IT and professional services grew **12.1%**.
- Trade, hotels, transport and communication grew **8.5%**.
- Public administration, defence and other services grew **7.5%**.
- Real estate grew **24.7%**, retail trade **18%**, wholesale trade **15.1%**, administrative services **14.4%**, and IT/computer services **13.5%**.

3. Manufacturing Stayed Strong

- The secondary sector grew **8.6%**, with manufacturing expanding **9.2%**.
- Electricity, gas and water supply grew **8.9%**, while construction increased **7.7%**.
- Electrical equipment production jumped **27%**.
- Computer, electronic and optical products grew **12.4%**.
- Machinery and equipment production increased **9.1%**.

4. Agriculture Added Stability

- The primary sector grew **2.9%**, while agriculture, livestock, forestry and fishing expanded **3.6%**.
- The monsoon performed better than initially feared.
- Sowing remained only slightly below the previous year for several crops.
- A reasonably good agricultural season can support **rural incomes, consumption and food-price stability**.

5. Investment Gained Momentum

- Gross Fixed Capital Formation (**GFCF**) increased **11.9% in real terms**, compared with **5.8%** a year earlier.
- This was driven by both **private and public investment**.
- Capital-goods production grew **15.2%**.
- The trend suggests that India's investment cycle is gaining strength.

6. Exports Supported Growth

- Real exports increased **12%** in Q1 FY27, compared with **6%** a year earlier.
- Engineering exports rose **17.7%**.
- Electronics exports jumped **57.4%**.
- Chemical exports increased **14.4%**.
- Merchandise exports touched a record monthly value of **USD 44.24 billion in July**.

Export diversification, FTAs and improving competitiveness are helping Indian exporters deal with difficult global conditions.

7. Growth Was Broad-Based

India's growth was not dependent on a single sector.

- Real GVA grew **8.2%**.
- Tertiary sector: **10%**
- Secondary sector: **8.6%**
- Agriculture and allied activities: **3.6%**
- Private consumption: **7.1%**
- Fixed investment: **11.9%**

This diversified growth structure gives the economy greater ability to absorb shocks affecting any one sector.

Inflation and Foreign Investment

- Retail inflation stood at **4.45% in July**, while core inflation was **4.15%**.
- Gross inward FDI reached around **USD 30.7 billion during April–June 2026**, described as the strongest quarterly inflow in at least 15 years.
- Foreign investment can bring **capital, technology and access to global supply chains**.
- The Centre's fiscal deficit was **₹4.55 lakh crore during April–July**, equal to **26.8% of the FY27 target of ₹16.96 lakh crore**.

India Compared With Other Major Economies



This highlights India's strong position among major economies amid global uncertainty.

Major Risks Ahead

Despite the strong Q1 performance, India remains exposed to external risks.

- **Crude oil:** India depends heavily on imported crude. A prolonged Middle East disruption could increase oil prices, transportation costs and the import bill.
- **Inflation:** Higher energy and commodity prices could put fresh pressure on inflation.
- **Global demand:** Slower growth in major trading partners could reduce demand for Indian exports.
- **Food prices:** Weather conditions and food inflation remain important risks.
- **Interest rates:** Global interest-rate uncertainty could affect investment and economic activity.
- **Supply chains:** Continued geopolitical tensions may disrupt global logistics and supplies.

What Will Determine Future Growth?

The next phase will depend on whether **domestic consumption and investment** remain strong.

India will need to:

- Maintain manufacturing momentum.
- Encourage stronger private investment.
- Improve productivity.
- Keep exports competitive.
- Generate more employment.
- Monitor crude oil and food prices.
- Maintain fiscal stability.
- The diversification push in international trade should continue.

The government believes recent structural reforms have strengthened India's ability to withstand global shocks, but continuing geopolitical uncertainty remains a concern. For now, the key message is clear: **India's economy is growing rapidly and becoming more diversified, while global turbulence has not yet become a major obstacle to growth.**

PM-SETU: Revamping India's ITI Ecosystem for Better Skilling and Employment



Why in News?

- The **Pradhan Mantri Skilling and Employability Transformation through Upgraded ITIs (PM-SETU)** has received a proposed **₹6,000 crore allocation** in the Union Budget 2026–27.
- Launched on **4 October 2025**, it is a **Centrally Sponsored Scheme** aimed at modernising India's vocational training ecosystem.
- The scheme has a broader **five-year outlay of ₹60,000 crore** and focuses on upgrading ITIs and strengthening institutions for skill development and trainer training.

Key Components of PM-SETU

1. Upgradation of 1,000 Government ITIs

- **1,000 ITIs** will be modernised through a **Hub-and-Spoke model**:
  - **200 Hub ITIs**
  - **800 Spoke ITIs**
- Each Hub ITI will generally be connected with around **four Spoke ITIs**.
- Upgraded institutes will receive:

- Modern infrastructure
- Advanced machinery and equipment
- Improved training facilities
- Industry-linked skill programmes

2. Transformation of Five NSTIs

- Five out of 33 **National Skill Training Institutes (NSTIs)** will be developed as **National Centres of Excellence for Skilling**.
- Locations:
  - **Bhubaneswar**
  - **Chennai**
  - **Hyderabad**
  - **Kanpur**
  - **Ludhiana**
- These institutions will focus on:
  - Advanced skilling
  - Trainer development
  - Collaboration with global institutions

Funding Pattern

Component	Central Government	State Government	Industry
ITI Upgradation	50%	33%	17%
NSTI Upgradation	80%	—	20%

- For **North-Eastern and Hilly States and certain UTs**, the Central contribution can rise to **83%**.
- Industry participation is therefore no longer merely encouraged; it has become an important financial and operational requirement.

Role of Private Sector

PM-SETU represents a shift towards a **"government-owned, industry-managed"** approach.

- Earlier PPP arrangements generally allowed industry participation through **Institute Management Committees (IMCs)**.
- Under PM-SETU:
  - Industry must contribute at least **17%** for ITI clusters.
  - Each NSTI requires at least **₹40 crore** committed industry investment over five years.
  - **CSR funds** can be used for meeting these obligations.
  - Private partners can influence:
    - Infrastructure planning
    - Curriculum design
    - Recruitment
    - Training
    - Achievement of KPIs
- Industry partners will be selected through a **bidding process**, with final approval by the National Steering Committee.

Major Concerns

1. Urban–Rural Divide

- The Hub-and-Spoke model could favour ITIs located in or near **urban centres**.
- Rural ITIs may face:
  - Poor connectivity
  - Different local skill requirements
  - Difficulty attracting industry partners
  - Risk of being marginalised within clusters

2. Poor Placement Record

- A **2023 NITI Aayog assessment** highlighted extremely weak placement outcomes.
- Among **4,14,247 trainees**, only **405 were reported as placed**, equivalent to about **0.09%**.
- This is particularly concerning because industries simultaneously report shortages of skilled technicians.

3. Shortage of Trainers

- Only around **36% of sanctioned instructor positions** were filled.
- Heavy dependence on contractual and guest faculty affects training quality.
- Vocational education requires trainers with both:
  - **Technical expertise**
  - **Pedagogical skills**

4. Low Female Participation

- Women constituted only:
  - **6.6% of enrolled trainees**
  - **15.83% of instructors**
- This reflects a significant **gender gap in vocational education**.

5. Overdependence on Large Industries

- The scheme prefers credible and financially capable **Anchor Industry Partners**.
- However, most employment opportunities are not necessarily concentrated in large corporations.
- **Local and small-scale industries** collectively provide significant employment but may find

it difficult to participate directly in the scheme.

Employment–Industry Mismatch

A major challenge is the gap between **student aspirations and actual labour-market demand**.

- Many ITI graduates prefer jobs with **well-known companies** because of their social recognition and perceived career value.
- Large companies cannot absorb all ITI graduates every year.
- At the same time, **local industries and MSMEs** may have considerable demand for skilled workers but struggle to attract ITI graduates.
- Therefore, upgrading infrastructure alone may not solve the employment problem.

Performance Measurement

PM-SETU does not impose one uniform target for every institution.

Instead, each cluster and NSTI will establish **Key Performance Indicators (KPIs)** through:

- **Strategic Investment Plan (SIP)**
- **Annual Operational Plan (AOP)**

KPIs cover:

- Infrastructure improvement
- Training quality
- Placement outcomes
- Faculty development
- Industry partnerships
- Training outcomes

Performance will be assessed through a **cost-weighted scoring system**.

Way Forward

- **Strengthen trainers** alongside infrastructure and equipment.
- Build systematic partnerships with **MSMEs and local industries**, not only large corporations.
- Conduct regular **local labour-market assessments** to align courses with actual employment demand.
- Give special attention to **rural and backward-region ITIs**.
- Increase **women's participation** through targeted courses and supportive infrastructure.
- Make placement and **long-term employment outcomes** central to performance evaluation.
- Encourage continuous **industry exposure and upskilling of trainers**.
- Link ITI courses with emerging sectors and evolving industrial requirements.

Privatization of the Indian Space Sector

The Indian space sector is moving towards privatisation. This simply means the role of ISRO is getting altered. ISRO, since its formation in 1969, focussed on developing end-to-end space capabilities. Some of them are intended to be delegated to the private sector by the GoI.

Is ISRO getting privatized?

The ISRO chairman recently clarified that "ISRO is not getting privatized as it is and will work with government investment." There will be altered roles for ISRO but it will not be privatized. He further stated that currently ISRO has 56 satellites in space while the requirement is of 50 launches every year.

What was the role of ISRO?

ISRO was involved in the following:

- Building launch vehicles & launch pads.
- Focussing on national needs like weather prediction, security, earth observation, communication and such like.
- Launching Inter planetary missions like Mars Orbiter Mission, Chandrayaan series, etc.

What is the new role expected for ISRO?

The government wants ISRO to get indulged in the following:

- Deep R&D missions. (main focus)
- Focus on future inter planetary missions like **Chandrayaan 4** (expected to be a sample bring back mission from the moon), **Venus Orbiter mission** and such like.
- Focus on manned mission to space (Gaganyaan)

What role will the private sector play?

The private sector is expected to do the following:

- Build satellite launch vehicles. (GSLV, PSLV & SSLV)
- Build satellites and all other components used in space launches.
- Launch the satellites
- Build launchpads & control centres.

The government wants the involvement of the private sector because it aims to scale up the space economy from currently **8 bn USD to 40-45 bn USD by 2033.**

What steps have been taken by the Government in this regard?

The government has taken multiple steps:

- **Setting up of INSPace:** INSpace will act as an interface between ISRO and private parties, and assess how best to utilise India's space resources and increase space-based activities. This will ensure greater private participation in the space sector.
- **Liberalised foreign investment:** Following levels of FDI is allowed:

Sub Domain	% of FDI allowed
Components	100%
Satellites	74%
Launch Vehicles	49%

- **Establishment of New Space India Limited (NSIL):** This is the marketing and commercial arm of ISRO.
- **Financial Support:** Special venture funds & capital packages are established to back space domain startups.

Challenges:

- Lack of a comprehensive legal mechanism (A space law) when private players' involvement is getting increased.
    - The law is necessary to cater to any security concerns.
    - Liabilities will be undefined in absence of a law.
- Very high to high gestation period. Will the startups sustain till the time outcomes start coming? What happens if any space startup goes bankrupt during this period?
- Security risks can increase.
- Management of space debris which is a rising concern in itself.

Way forward:

The way forward should be focused on smooth transition not a transition done in haste. ISRO will have to do a lot of handholding of the private entities. But on the other hand look forward to transitioning also. ISRO needs to walk in the direction which NASA walked once, while understanding the domestic realities.

India Returns to 'A' Credit Rating After 35 Years



Why in News?

- **Japan Credit Rating Agency (JCRA)** upgraded India's sovereign credit rating from **'BBB+' to 'A-'**.
- This is the **first time in over 35 years** that India has received an **'A' grade**.
- The last time India was in the 'A' category was **January 1988**.
- The upgrade can influence India's **future borrowing costs and debt-servicing burden**.

What is a Sovereign Credit Rating?

- It measures a country's **ability and willingness to repay its debt**.
- It reflects the **risk of lending to a sovereign** and the likelihood of repayment.
- Ratings are assigned to specific categories of government debt, such as:
    - **Foreign Currency Long-Term Debt**
    - **Local Currency Long-Term Debt**

Major Rating Agencies

India is rated by seven agencies:

- **S&P Global Ratings**
- **Moody's Investors Service**
- **Fitch Ratings**
- **Morningstar DBRS**
- **JCRA**
- **Rating and Investment Information (R&I)**
- **CareEdge Ratings**

The three major globally recognised agencies are **S&P, Moody's and Fitch**.

Credit Rating Scale

- **AAA / Aaa** → Highest rating
- **AA**
- **A**
- **BBB**
- **BB and below** → Higher credit risk
- **D** → Default

Higher rating = Lower perceived default risk

Why is the Rating Important?

1. Lower Borrowing Cost

- A higher rating signals **lower sovereign default risk**.
- Investors may therefore demand **lower interest rates** when lending to India.

2. Lower Debt-Servicing Burden

- Cheaper borrowing means lower expenditure on **interest payments and debt servicing**.
- This can leave more government resources available for:
  - Infrastructure
  - Public services
  - Productive investment

3. Investor Confidence

- An improved rating can strengthen perceptions of India's:
  - Macroeconomic stability
  - Financial system
  - Growth prospects

Why Did JCRA Upgrade India?

JCRA highlighted three major factors:

1. Strong Economic Growth

- India has maintained growth of around **7%**.
- Growth has been supported by:
  - **Private consumption**
  - **Public investment**

2. Growth-Oriented Government Policies

- JCRA recognised the government's policies aimed at sustaining economic growth.

3. Stronger Financial System

- Improvement in the **strength of India's financial system** contributed to the upgrade.

India's Recent Rating Upgrades

The JCRA upgrade is part of a broader sequence of improvements:

Agency	Year	Earlier Rating → New Rating
Morningstar DBRS	2025	BBB (low) → BBB
S&P Global Ratings	2025	BBB- → BBB
R&I	2025	BBB → BBB+
JCRA	2026	BBB+ → A-

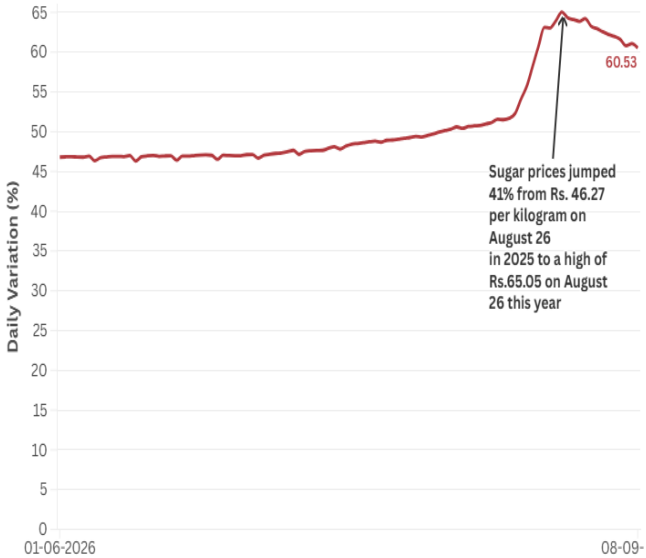
- The **S&P upgrade in August 2025** was particularly significant as it was the agency's **first upgrade of India in 18 years**.

Significance for India

- **Cheaper sovereign borrowing** can reduce the government's interest burden.
- May improve access to **international capital**.
- Strengthens investor confidence in India's economic fundamentals.
- An 'A' rating represents an improvement from India's historically **near-junk-grade position**.
- However, the rating is an assessment of **creditworthiness**, not a comprehensive ranking of the overall Indian economy.

Sugar Price Surge in India: Why Was It Not Foreseen?

A look at the daily retail price of sugar (per kilogram) shows the sudden and sharp increase in August



Why in News?

- Retail sugar prices surged sharply in **August 2026**, reaching **₹65.05/kg on August 26**, compared with ₹46.27/kg a year earlier.
- This represents an increase of about **41%**.
- The Union government responded by allowing **duty-free imports of 10 lakh MT of raw sugar** till **October 31, 2026**.
- The episode has raised concerns over the government's ability to **anticipate supply shortages**.



Why Did Sugar Prices Rise?

The government identified several factors:

- **Lower-than-expected domestic production**
- Increased demand ahead of the **festive season**
- **Hoarding**
- Tightening global supplies
- **Weather-related crop damage**

However, the unusually sharp increase suggests that the festive-season demand alone does not explain the price surge.

Warning Signals Were Already Visible

1. Global Supply Tightening

- The **FAO Sugar Price Index rose 5.6% in July 2026**.
- FAO had highlighted concerns over:
  - Lower production expectations in **Brazil**
  - Hot weather affecting **European Union** crop yields
  - **El Niño-related conditions** affecting key Asian producers

2. Declining Indian Production

- India's sugarcane production peaked at **490.5 million MT in 2022–23**.
- Production has declined since then.
- **Uttar Pradesh and Maharashtra** together account for:
  - Around **71% of India's sugarcane production**
  - Around **65% of sugar production**
- Fluctuations in these two States therefore have a major impact on national availability.

Production Estimates vs Actual Output

A major problem was the **gap between expected and actual sugar production**.

- Initial estimate for **2025–26 sugar production:** around **343 lakh tonnes**
- Later estimate: around **306 lakh tonnes**
- This represents a substantial shortfall from the original expectation.

Policy Consequence

Based on the higher production estimates:

- **Higher expected production**

↓

- Exports permitted + ethanol diversion targets set

↓

- Actual production lower than expected

↓

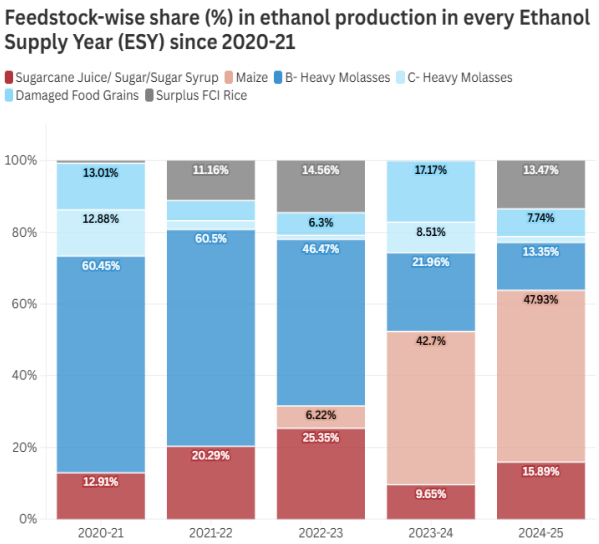
- **Domestic sugar availability tightened**

↓

- **Prices increased sharply**

Role of Ethanol Diversion

- The Opposition attributed the price rise partly to **diversion of sugarcane/sugar for ethanol production**.
- However, the analysis cited in the article does **not consider ethanol diversion the key short-term cause**.
- In recent years, **maize has accounted for a major share of ethanol-blending feedstock**, reducing dependence on sugar-based ethanol.



Government Response

To increase domestic availability, the government:

- Allowed **duty-free import of 10 lakh MT of raw sugar**.
- Import permission has been provided until **October 31, 2026**.
- The measure has reportedly **eased prices marginally**.

Key Policy Concern

The central issue is not merely the price rise but the **failure to act on available warning signals**.

Indicators such as:

- Falling domestic production
- Lower crop estimates
- Global sugar-price movements
- Weather risks
- Production uncertainty in major States

could have been incorporated into **early supply management and import decisions**.

Way Forward

- Strengthen **real-time monitoring of sugarcane and sugar production**.
- Improve accuracy of production estimates before deciding on **exports and ethanol diversion**.
- Develop an **early-warning mechanism** based on global prices and weather forecasts.
- Maintain adequate **buffer stocks** to manage supply shocks.
- Calibrate exports and ethanol diversion according to **realistic production estimates**.
- Use timely imports when a domestic supply deficit becomes foreseeable.

Dedicated Freight Corridors: Transforming India's Freight Transport



Why in News?

- The **last three sections of the Western Dedicated Freight Corridor (WDFC)** were inaugurated, completing the **1,506-km WDFC** from **JNPT, Maharashtra to Dadri, Uttar Pradesh**.
- The three sections cover **326 km** and involved an investment of over **₹20,700 crore**.
- With this, India's two operational DFCs now cover **2,843 km** and carry around **426 freight trains daily**.

Major Dedicated Freight Corridors



Currently, a total of about 426 freight trains run on both corridors daily.

1. Western DFC (WDFC)

- **Length:** 1,506 km
- **Route:** JNPT → Dadri
- Primarily carries:
  - ISO containers
  - Fertilisers
  - Foodgrains
  - Salt
  - Coal
  - Iron and steel
  - Cement
- Connects major ports such as:
  - JNPT

- Mumbai Port
- Pipavav
- Mundra
- Kandla

- Major northern destinations include **Tughlakabad, Dadri, Dhandari Kalan and Khatuwas**.

2. Eastern DFC (EDFC)

- **Length:** 1,337 km
- **Route:** Ludhiana → Sonnagar
- Primarily handles **coal and mineral traffic** from eastern India.
- Fully commissioned in **October 2023**.
- Includes:
  - **936-km double-line section:** Sonnagar–Dadri
  - **401-km single-line section:** Ludhiana–Khurja

Why Were DFCs Needed?

Overloaded Existing Railway Routes

- Traditional **Howrah–Delhi** and **Mumbai–Delhi** routes became heavily congested.
- Line utilisation had reached around **115–150%**.
- This restricted freight movement and reduced railway efficiency.

Separation of Freight and Passenger Traffic

- DFC infrastructure creates a **dedicated network for freight trains**, separating them from passenger services.
- This results in:
  - Less congestion → Higher speed → Lower transit time → Lower logistics cost

Key Benefits

1. Faster Freight Movement

- Average freight speed on DFCs is **over 50 kmph**.
- This is roughly **twice the average speed** of freight trains on the conventional network.
- Recent speeds:
  - **WDFC:** 53.6 kmph in April and 52.3 kmph in May
  - **EDFC:** 44.9 kmph in April and 44.7 kmph in May

2. Lower Logistics Costs

- Faster movement reduces:
  - Transit time
  - Fuel and operational costs
  - Inventory holding costs
- This can improve the **competitiveness of Indian manufacturing and exports**.

3. Last-Mile Connectivity

- DFCs provide improved connectivity between **ports, industrial centres and inland container depots (ICDs)**.
- This strengthens the overall logistics chain rather than merely increasing railway capacity.

4. Higher Freight Capacity

- Around **426 freight trains** currently operate daily on the two corridors.
- Dedicated infrastructure allows more freight to move without competing with passenger trains for track capacity.

Significance for Indian Railways

- Freight revenue is critical for Indian Railways and helps **subsidise passenger services**.
- Freight contributes **over 65% of total railway earnings**.
- Rail currently carries around **27% of freight traffic**.
- The **National Rail Plan** aims to raise rail's freight share to **45% by 2030**, equivalent to around **3,000 million tonnes**.
- Indian Railways recorded its highest-ever loading of **1,670 million tonnes in 2025–26**.

DFC and National Logistics

- DFCs can strengthen:
  - **Multimodal logistics**
  - Port connectivity
  - Industrial corridors
  - Supply-chain efficiency
  - Export competitiveness
- Their importance is highlighted by the fact that National Highways along these routes constitute only about **0.5% of the road network but carry nearly 40% of road freight**.

Financing & Institutional Framework

- The DFC project was first discussed during a **Japan–India meeting in 2005**.
- A feasibility study was prepared in **2007**.
- **Dedicated Freight Corridor Corporation of India Ltd. (DFCCIL)** was established as the

SPV for construction, operation and maintenance.

- Financing included:
    - **World Bank:** ₹14,900 crore
    - **Japan International Cooperation Agency (JICA):** ₹38,722 crore
    - Remaining funding through **budgetary support**

Proposed Third DFC

- The government has announced a proposed **third Dedicated Freight Corridor**.
- It will connect **Dankuni (West Bengal) to Surat (Gujarat)**.
- The **Detailed Project Report (DPR)** is under preparation.

BRICS Financial Architecture: Alternative to the Western System?



Why in News?

- As India hosts the **18th BRICS Summit in New Delhi (12–13 September 2026)**, the bloc's long-standing ambition of creating an alternative to the **Western-dominated global financial system** is under scrutiny.
- BRICS created institutions such as the **New Development Bank (NDB)** and **Contingent Reserve Arrangement (CRA)** to reduce dependence on the **World Bank, IMF and US dollar**.
- However, their functioning shows that BRICS remains deeply integrated with the existing global financial architecture.

New Development Bank (NDB)

- Established in **2015** as BRICS' flagship financial institution.
- Intended to provide developing countries with:
    - Infrastructure and development finance.
    - Greater use of **local currencies**.
    - Reduced dependence on Western-dominated institutions.
    - More autonomy from traditional financial conditionalities.

Reality Check

Aspect	Intended Objective	Present Reality
Currency	Local-currency financing	Around **22%** of lending was in local currencies by mid-2025
Bonds	Reduce dollar dependence	About **half of outstanding bonds are in US dollars**
Credit ratings	Reduce Western influence	Relies on **S&P, Fitch and Moody's**
Scale	Rival World Bank	About **$39 billion** project approvals by end-2024
Cooperation	Alternative to existing institutions	Often **co-finances projects with World Bank/IMF**

- The NDB had targeted **30% of its portfolio in local currencies by end-2026**.
- The **South African rand** accounted for only around **1%** of outstanding bonds.
- Its first **rupee-denominated bond** was still under planning as late as September 2025.
- In **March 2022**, NDB suspended operations related to Russia following the Ukraine invasion, reflecting the importance of maintaining its access to Western financial markets.
- Russia, a founding member and **20% shareholder**, subsequently gave up its turn at the rotating NDB presidency.

Scale Difference

- **NDB:** around **$39 billion** in project approvals by end-2024.
- **World Bank Group:** roughly **$100 billion annually** in commitments.
- Thus, the NDB remains significantly smaller than the institutions it was expected to challenge.

Key takeaway: The NDB has created an additional source of development finance, but it has **not replaced or seriously displaced the World Bank-led system**.

Contingent Reserve Arrangement (CRA)

- Established in **2015** with a corpus of **$100 billion**.
- Objective: provide emergency foreign-exchange support to BRICS members during financial crises and reduce dependence on the IMF.

Major Limitation

- A country can access **more than 30% of its allotted share only after entering into an IMF programme**.
- Therefore, the mechanism ultimately remains connected to the very institution it was intended to provide an alternative to.

Institutional Weaknesses

- No permanent staff.
- No independent surveillance mechanism.
- No dedicated research wing.
- **Never activated** since its creation.

Therefore: The CRA exists as a financial safety mechanism, but its design prevents it from becoming a fully independent alternative to the IMF.

BRICS and De-dollarisation

- **De-dollarisation** refers to reducing dependence on the **US dollar** in international trade, payments, reserves and financial transactions.

Despite frequent discussion, BRICS' actual position is much more cautious.

- The **126-point Rio Declaration (2025)** did not use the term "de-dollarisation".
- Russian President Vladimir Putin stated in 2024 that BRICS had **not sought to abandon the dollar**.
- **India** opposes a common BRICS currency and is concerned about possible trade repercussions.
- **South Africa** considers a common currency too risky.
- **China** prefers gradual internationalisation of the **yuan** on its own terms.
- When the US threatened additional tariffs against countries pursuing "anti-American" BRICS policies, the bloc did not issue a collective response.

Why a Common BRICS Currency Remains Difficult?

- Different monetary and economic structures.
- Divergent national interests.
- Unequal economic weight among members.
- Limited financial integration.
- Dominance of the dollar in global trade and financial markets.
- China's preference for promoting the yuan rather than creating a genuinely collective currency.

BRICS and the IMF

Interestingly, BRICS does **not** seek to eliminate the IMF.

- BRICS declarations at **Kazan (2024)** and **Rio (2025)** called for a **"quota-based and adequately resourced" IMF**.
- This indicates that the bloc primarily wants **greater influence within the existing institution**, rather than replacing it.

IMF Voting Structure

- The **US holds 16.49% of IMF voting rights**.
- Major IMF decisions require an **85% supermajority**.
- Consequently, the US has an effective veto over major decisions.

Core contradiction: BRICS seeks greater representation in the existing global financial system while simultaneously presenting itself as an alternative to that system.

Why Has BRICS Not Created a Genuine Alternative?

1. Deep Economic Integration

- BRICS economies remain heavily connected to Western financial markets.
- Their banks and institutions still depend on established global financial infrastructure.

2. Dollar Dominance

- The US dollar continues to dominate international finance.
- Completely replacing it would require deep financial and monetary integration among BRICS members.

3. Divergent National Interests

- India, China, Russia, Brazil and South Africa have different economic and geopolitical priorities.
- They do not have a unified position on currency, trade or financial governance.

4. Dependence on Western Financial Institutions

- NDB continues to work with Western rating agencies.
- BRICS institutions also cooperate with the World Bank and IMF.

5. Limited Institutional Capacity

- The CRA has never been activated.
- NDB's financial scale remains much smaller than that of the World Bank.

BRICS Expansion

- Expansion to countries such as **Egypt, Ethiopia, Iran and UAE** reflects growing interest among Global South countries in greater financial and geopolitical autonomy.
- However, expansion also increases the challenge of achieving a **common financial and monetary strategy**.

What Does This Tell Us About BRICS?

- BRICS has created **additional institutions**, but not a parallel global financial architecture.
- Its approach is better understood as **reforming and diversifying the existing system rather than replacing it**.
- The bloc seeks:
    - Greater representation for developing countries.
    - More voting power in global institutions.
    - Increased use of local currencies.
    - Greater development-finance options.
    - Reduced vulnerability to unilateral financial pressure.

The Central Contradiction

- **BRICS rhetoric:** Build an alternative to Western financial dominance.
- **BRICS practice:** Operate largely within the existing Western-centred financial architecture.

Significance for India

- India can use BRICS to advocate:
    - **Greater Global South representation** in IMF and World Bank governance.
    - Reform of international financial institutions.
    - Greater use of **local-currency settlements** where economically viable.
    - More development finance for emerging economies.
- At the same time, India benefits significantly from integration with the existing global financial system.
- Hence, India's likely approach is **strategic diversification rather than complete decoupling**.

Way Forward

- Strengthen NDB's **local-currency lending capacity**.
- Develop deeper local-currency financial markets within BRICS.
- Make the CRA capable of providing greater support without automatic IMF dependence.
- Improve coordination among BRICS central banks.
- Develop interoperable cross-border payment systems.
- Pursue **IMF quota and governance reforms**.
- Avoid premature attempts to create a common BRICS currency without sufficient monetary integration.

Retail inflation raises to 4.82% in August

Why in News?

The National Statistics Office (NSO) released the Consumer Price Index for August 2026.

The findings marked retail inflation at **4.82% in August, 2026.**

Note: The CPI based inflation figures are **year on year.** (Means the prices of the basket of goods taken into account to measure CPI has increased by **4.82% wrt August 2025**)

Has it increased from the previous month?

Yes. The Consumer Price Index (CPI) based inflation was **4.45% in July.**

What was the driver of retail inflation?

Food inflation was the main driver of retail inflation. Food inflation increased to **5.95% in August** as compared to **5.52% in July, 2026.**

What are the major factors behind food inflation?

There is a combination of multiple factors responsible for the food inflation.

- Weak monsoon
- Extreme spikes in specific staples like onion(₹48%), ginger (₹73%) & garlic (43%)
- Rising transportation costs (although domestic fuel costs did not rise, but global

fuel prices rose. Therefore, the imports became expensive)

Is inflation under control?

Yes, according to the Reserve Bank of India, CPI based inflation should be in the range of **2-6% (4+/-2%).**

RBI's future projections:

Q2: 4.7%

Q3: 5.9%

Q4: 5.5%

Overall projection for 2026-27 is **5%.**

What shall the government do?

The government shall take adequate measures to control the inflation further. These are:

- Market Stabilization by releasing buffer stocks. (The govt. Maintains buffer stocks under the Price Stabilisation Fund (PSF))
- Selling at subsidised rates. (A staple like onion shall be sold)
- Lowering import duties.
- Imposing export restrictions
- Crackdown on hoardings

With the above measures, inflation can be attempted to be brought under the 4% mark. More inflation reduces the purchasing power of the people. This has a direct impact on the economic growth rate. Our celebrations wrt economic growth may fade away, which obviously shall be avoided.

Merchant Discount Rate (MDR) on Unified Payments Interface (UPI)

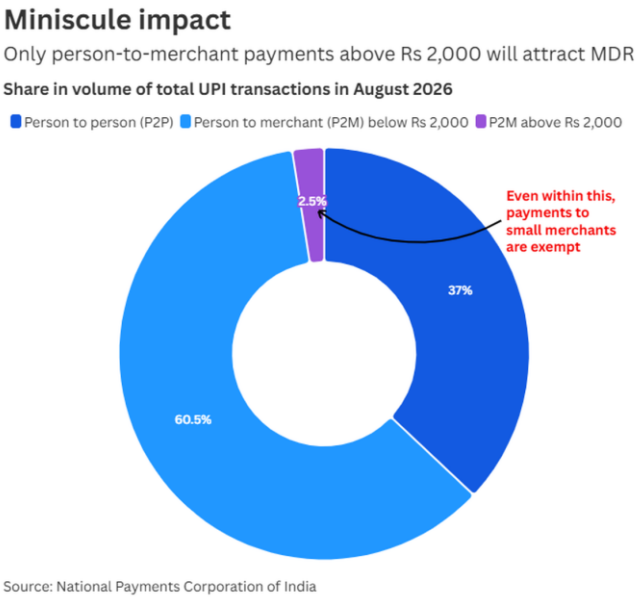


Why in News?

- The **National Payments Corporation of India (NPCI)** has announced a new **Merchant Discount Rate (MDR)** framework for certain UPI transactions from **15 October 2026**.
- An **MDR of 0.4%** will apply to UPI payments of **₹2,000 or more** made to **mid-sized and large merchants**.
- Only about **2.5% of UPI transactions by volume** will be affected.

Which UPI Transactions Will Remain Free?

- **Person-to-Person (P2P) transactions:** Remain completely free, irrespective of transaction value.
- **Merchant payments below ₹2,000:** No MDR.
- **Small merchants:** Street vendors and other small merchants receiving up to **₹1 lakh per month** through UPI QR codes under the **Person-to-Person-Merchant (P2PM)** category will remain exempt.



MDR Rates Under the New Framework

Transaction Category	MDR
Mid/Large merchants ≥ ₹2,000	0.4%
Essential & thin-margin sectors ≥ ₹2,000	₹5 per transaction
Capital-market transactions	0.02%, capped at ₹300
P2P transactions	Nil
Merchant payments < ₹2,000	Nil
Eligible small P2PM merchants	Nil

Essential & Thin-Margin Sectors

The ₹5 flat MDR applies to sectors such as:

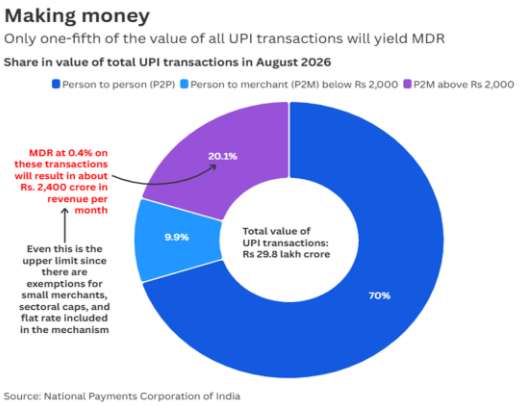
- **Railways**
- **Telecommunications**
- **Insurance**
- **Fuel**
- **Agricultural inputs**

Capital-Market Transactions

The **0.02% MDR**, subject to a **₹300 maximum**, applies to payments involving:

- **Mutual funds**
- **Stockbrokers**
- **Dealers**
- **Equities**

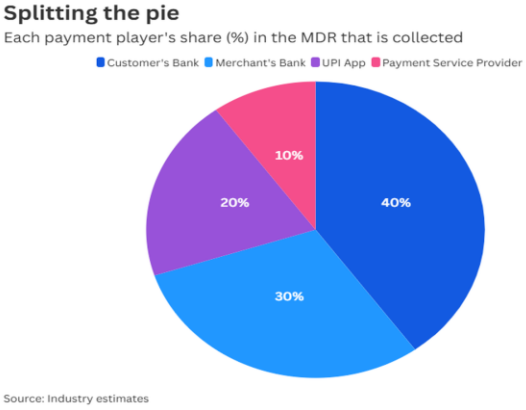
How Much of UPI Will Be Affected?



- Transactions subject to MDR constitute only around **2.5% of total UPI transaction volume**.
- However, they represent around **20% of the total value** of UPI transactions.
- The estimated maximum revenue from MDR is around **₹2,400 crore per month**.

Key point: The charge affects a **small share of transactions by volume but a much larger share by value**.

Who Gets the MDR?



The MDR collected is distributed among participants in the UPI ecosystem.

- Largest share → Payer's bank
- Second-largest share → Merchant's bank
- Then → UPI app
- Then → Other payment processors

Banks Likely to Benefit

Payer's Bank

Among banks used by customers for UPI transactions:

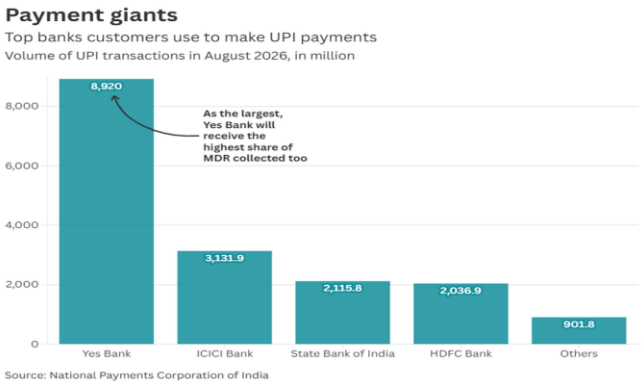
- **Yes Bank** has the largest share.
- **ICICI Bank** follows.

Merchant's Bank

Among banks used by merchants for receiving UPI payments:

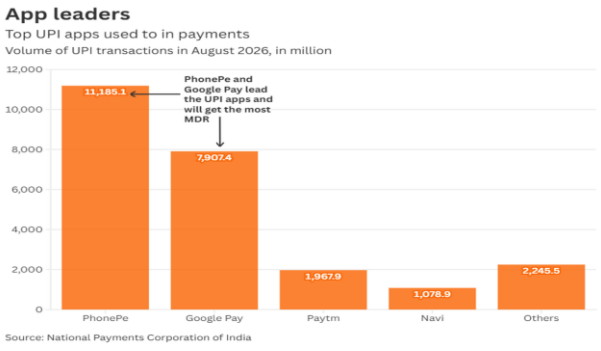
- **Yes Bank** leads.
- Followed by:
  - **Axis Bank**
  - **ICICI Bank**
  - **HDFC Bank**

Why Private Banks Benefit?



- MDR revenue is distributed primarily to the **payer's bank and merchant's bank**.
- Banks with a large share of UPI transactions can therefore receive a larger portion of the MDR revenue.
- The data indicates that **private banks, particularly Yes Bank**, are positioned to gain significantly.

UPI Apps Likely to Benefit



- **PhonePe** and **Google Pay** together account for nearly **80% of UPI transaction volume**.
- Since UPI apps receive a share of MDR, these platforms are positioned to receive a significant portion of the revenue generated.

Why Is the Impact Limited for Most Users?

- **P2P payments remain free.**
- Merchant payments **below ₹2,000 remain free**.
- Eligible small merchants remain **exempt**.
- Therefore, the MDR primarily targets **higher-value transactions involving larger merchants**.

Key Significance

- Introduces a potential **revenue stream** into the UPI ecosystem.
- Provides financial incentives for **banks and payment applications** participating in high-value merchant transactions.
- Maintains **zero-cost access** for ordinary P2P transfers and small-value merchant payments.
- Attempts to generate revenue without imposing MDR across the entire UPI ecosystem.

RBI Forex Swap Facility and Record Foreign-Currency Inflows

Why in News?

- The **RBI's special USD-INR forex swap facility** received a much stronger response than expected.
- By **31 August 2026**, banks had provisionally mobilised **$136.377 billion** through the facility.
- This was significantly higher than the initial expectation of **$70–80 billion**.
- The RBI had introduced the facility to:
    - Encourage **fresh foreign-currency inflows**.
    - Improve **domestic liquidity**.
    - Strengthen India's **foreign-exchange position**.
    - Provide stability amid **global uncertainty, trade tensions and geopolitical conflicts**.

What is the RBI Forex Swap Facility?

- A **forex swap** is an arrangement in which the RBI provides rupees to banks in exchange for foreign currency, with an agreement to reverse the transaction later.
- In the 2026 facility:
    - Banks mobilised foreign-currency funds, particularly through **FCNR(B) deposits**.
    - These foreign-currency resources were swapped with the RBI.
    - This helped banks obtain **rupee liquidity** while adding to India's usable foreign-exchange resources.

Simple Meaning:

Foreign-currency inflow → RBI swap → banks get rupee liquidity + India strengthens its forex position

How did the FCNR(B) Swap Work?

1. **Banks attract foreign currency**
    - Banks mobilise foreign-currency deposits from NRIs/eligible depositors through **FCNR(B) accounts**.
2. **Currency is brought into the banking system**
    - The bank receives foreign currency instead of relying only on domestic deposits.
3. **Bank swaps the foreign currency with RBI**
    - RBI provides the equivalent **rupee liquidity** against the foreign currency under the swap arrangement.
4. **Swap is reversed later**
    - At maturity, the bank returns the rupees and receives back the foreign currency under the agreed terms.
5. **Result**
    - Banks obtain relatively stable foreign-currency funding.
    - RBI receives foreign currency temporarily.
    - Domestic liquidity conditions receive support.

What are FCNR(B) Deposits?

- **FCNR(B) = Foreign Currency Non-Resident (Bank) Accounts.**
- These are **fixed-term foreign-currency deposits** available to eligible NRIs/OCIs/PIOs.
- Deposits can be maintained in:
    - **US Dollar**

- **Pound Sterling**
- **Euro**
- **Japanese Yen**
- **Australian Dollar**
- **Canadian Dollar**

- Interest is **tax-exempt in India** when the depositor qualifies as a non-resident under the applicable rules.

Where Did the $136.377 Billion Come From?

Source	Amount	Share
FCNR(B) deposits	$127.226 bn	~93%
OFCBs	$5.260 bn	~4%
ECBs	$3.891 bn	~3%
Total	**$136.377 bn**	**100%**

What Happened to India's Forex Reserves?

- India's foreign-exchange reserves reached **$729.33 billion on 21 August 2026**.
- This surpassed the previous record of **$728.49 billion**, recorded on **27 February 2026**.
- The forex swap therefore helped strengthen India's external liquidity position.

Why are Forex Reserves Important?

- It helps to meet **external payment obligations**.
- Provide a buffer against **global financial shocks**.
- Support confidence in the domestic currency.
- Provide **import cover** during external stress.

Did the Forex Swap Strengthen the Rupee?

- **Not significantly.**
- Despite strong foreign-currency mobilisation and high reserves, the rupee remained weak.
- It was around **₹94.97 per US dollar** during the period.
- This shows that:
  - Higher forex reserves do not automatically mean a stronger rupee.
  - Exchange rates are also influenced by **capital flows, global uncertainty, geopolitical risks and dollar strength**.

Why Did RBI Introduce the Facility?

- **Global uncertainty**
- **Foreign-currency mobilisation**
- **Domestic liquidity**
- **Rupee stability**
  - Increased forex availability can help to reduce excessive volatility, although it cannot by itself determine the exchange rate.

Impact on Banks

- **Stable funding**
  - Foreign-currency deposits provide banks with medium-term funding.
- **Liquidity support**
  - Swapping foreign currency with RBI provides rupee liquidity.
- **Lower funding pressure**
  - Can reduce pressure arising from a high **credit-deposit ratio**.
- **Funding cost**
  - Banks may benefit from relatively attractive foreign-currency funding conditions.

Key Concerns

- **Rupee remains under pressure**
- The facility can impose a substantial cost on RBI.
- **Limited structural impact**
  - FCNR(B) deposits are estimated to represent only around **3% of total bank deposits**.
  - Hence, the facility may not fundamentally transform banks' overall funding structure.
- **Temporary nature**
  - Forex swaps provide liquidity and external support, but they do not eliminate the underlying causes of currency pressure.

Sulphur Crisis: Rising Prices Create a New Fertiliser Challenge for India



India has managed to avoid a potential food crisis by importing enough **urea and liquefied natural gas (LNG)** to support domestic production of urea. However, rising prices of another critical commodity, **sulphur**, are now affecting the availability of **DAP, SSP and other complex fertilisers**. The increase in sulphur prices is linked to the **Russia-Ukraine and West Asia conflicts**, which have affected oil refineries and gas-processing infrastructure. Since the beginning of 2026, the landed price of imported sulphur in India has doubled to around **$1,050–1,100 per tonne**.



Why in the News?

Sulphur has emerged as a new concern for India's fertiliser sector because it is an essential input for producing phosphatic fertilisers.

- Landed sulphur prices in India have doubled since the beginning of 2026.
- Prices have reached around **$1,050–1,100 per tonne**.
- Ukrainian attacks have targeted Russian oil refineries and gas complexes.
- Iran has targeted the energy infrastructure of **Saudi Aramco, QatarEnergy and Abu Dhabi National Oil Company**.
- Rising sulphur prices are affecting the availability of **DAP, SSP and complex fertilisers**.

Why is Sulphur Important?

Only about one-tenth of global sulphur output is directly mined. Most sulphur is recovered as a byproduct of petroleum refining and natural gas processing.

Source of Sulphur	Share
Petroleum oil refining	56%
Natural gas processing	34%
Direct mining	10%

Environmental rules require the removal of sulphur from crude oil and raw natural gas during the production of **clean, low-emission fuels**.

The recovered sulphur is important for agriculture because most of it is converted into **sulphuric acid**, which is a key chemical used in the production of fertilisers containing phosphorus.

Role of Sulphur in Phosphatic Fertilisers

- The primary source of phosphorus is **rock phosphate**. However, mined rock phosphate cannot be directly used as fertiliser.
- It has to be broken down into a **water-soluble form** so that plants can absorb it. This is done by reacting rock phosphate with sulphuric acid.
- The process can be broadly understood as:

Sulphur → Sulphuric Acid → Phosphoric Acid → DAP / Other Phosphatic Fertilisers

Sulphur and sulphuric acid are therefore essential for producing:

- DAP
- SSP
- 20:20:0:13
- 10:26:26
- 12:32:16
- Other major complex fertilisers

From Byproduct to Scarce Commodity

- India consumes around **3.8–3.9 million tonnes (mt) of sulphur annually**. The fertiliser industry accounts for around **2–2.1 mt** of this consumption.
- Sulphur was earlier available at relatively low prices because it was obtained as a byproduct of the oil and gas industry.
    - Import prices were generally below **$200 per tonne**.
    - During several months in **2019 and 2020**, prices were even below $100 per tonne.
    - Sulphur is flammable and therefore cannot be stored for very long.

- Sulphuric acid also has storage and disposal challenges.
- In 2020, India imported sulphuric acid from non-ferrous metal smelters in **Japan and South Korea** at prices as low as **minus $20 per tonne** on a free-on-board basis at the port of origin.

Impact of the Russia-Ukraine & USA Iran War

The situation changed after the Russia-Ukraine war.

- Sulphur prices increased to around **$400–500 per tonne** during March–June 2022.
- The increase was temporary.
- Prices returned to below $200 per tonne from late 2022 through early 2025.
- Ukraine increased targeted strikes on Russian oil refineries from around **August 2025**.
- By December 2025, landed sulphur prices had crossed **$500 per tonne**.
- Prices increased further after the US-Iran war.

Iran has similarly targeted oil and gas infrastructure in its Persian Gulf neighbouring countries.

Current Prices

According to the fertiliser industry official cited in the source:

- **Sulphur:** around $1,070 per tonne
- **Sulphuric acid:** around $330–350 per tonne
- Two months earlier, prices had reached around **$1,150 per tonne for sulphur** and **$420 per tonne for sulphuric acid**.

The EV Battery Link

Geopolitical tensions are not the only reason for the rise in sulphur and sulphuric acid prices.

Demand for **sulphuric acid** has also increased because of its use in extracting nickel from laterite ores and processing it into **mixed hydroxide precipitate (MHP)**, which is used for electric vehicle batteries.

- Nickel-related demand for sulphuric acid increased from **3.5 mt in 2021** to **16 mt in 2025**.
- Much of this demand comes from **Indonesia**.
- Indonesia has the world's largest nickel reserves.
- It has high-pressure acid leaching plants that process nickel ore into MHP.

Thus, both **supply-side disruptions from wars** and **higher demand from nickel processing** are putting pressure on the sulphuric acid market.

India's Sulphur Supply

- Indian fertiliser companies source sulphur from **domestic oil refineries**.
- They also source sulphuric acid from the smelting complexes of:
  - **Hindustan Zinc Ltd**
  - **Birla Copper**
- These sources are located in **Rajasthan and Gujarat**.
- However, the bulk of India's requirements is imported.

How India Produces Phosphatic Fertilisers

Companies such as **IFFCO, Coromandel International and Paradeep Phosphates Ltd** have integrated fertiliser manufacturing facilities. They import **sulphur and rock phosphate** and process them into fertilisers. The production process is:

- Sulphur is converted into **sulphuric acid**.
- Sulphuric acid is reacted with **rock phosphate**.
- This produces **SSP or phosphoric acid**.
- Phosphoric acid is further used to produce **DAP and other high-phosphorus complex fertilisers**.

Key Production Figures

- **1 tonne of sulphur** produces around **3 tonnes of sulphuric acid**.
- The reaction is **exothermic**, meaning it releases heat.
- The heat can be captured and used by boilers to generate **high-pressure steam for power**.
- Around **2.6–2.8 tonnes of sulphuric acid** are required to produce **1 tonne of phosphoric acid**.
- India has around **2.2 mt** of domestic phosphoric acid manufacturing capacity.
- India requires around **4.3–4.5 mt** of phosphoric acid.
- This supports production of around **15–16 mt of phosphatic fertilisers**.

Dependence on Rock Phosphate

- IFFCO, Coromandel International and Paradeep Phosphates have secured supplies

of **rock phosphate** through joint ventures or strategic tie-ups in:
    - **Jordan**
    - **Senegal**
    - **Morocco**
- However, securing rock phosphate alone is not sufficient.
- Rock phosphate cannot be used to make fertilizer without **sulphur**.

Major Challenges

The current situation creates pressure on India's fertiliser supply chain.

- **Rising prices:** Sulphur and sulphuric acid prices have increased sharply.
- **Import dependence:** The bulk of India's sulphur requirements is imported.
- **Geopolitical disruptions:** Attacks on oil and gas infrastructure are affecting sulphur availability.
- **Export restrictions:** Russia has banned exports of sulphur and sulphuric acid to protect its own fertiliser production, while China has also restricted exports of sulphuric acid.
- **Rising demand:** Growing sulphuric acid demand for nickel processing is adding pressure to global supplies.
- **Fertiliser availability:** Higher sulphur prices are affecting the availability of DAP, SSP and other complex fertilisers.

Conclusion

Sulphur has emerged as a new challenge for India's fertiliser sector amid disruptions to energy infrastructure in **Russia and West Asia**. Since sulphur is mainly recovered as a byproduct of oil refining and natural gas processing, disruptions in these sectors can directly affect its supply. At the same time, rising demand for sulphuric acid from **nickel processing for EV batteries** is adding further pressure. India depends heavily on imported sulphur, while sulphur is essential for converting rock phosphate into fertiliser through sulphuric acid. The industry is currently counting on an **end to the wars** and **subdued fertiliser demand from El Niño** for some easing of global prices.

12 Years of Make in India



The **Make in India** campaign completed 12 years on **September 25, 2026**. Data covering growth, investment, exports and employment shows that manufacturing has made some progress, but its overall contribution to the Indian economy, employment and global merchandise exports has remained broadly limited. Government **Production-Linked Incentive (PLI) schemes** have produced gains, but these gains are concentrated in a few sectors.

Why in News?

The **Make in India** campaign was launched on September 25, 2014, with the aim of strengthening India's manufacturing sector.

- The campaign has completed **12 years**.
- Manufacturing's share in economic growth, employment and global exports has remained largely unchanged.
- **PLI schemes** have generated significant investment, but gains are concentrated in a few sectors.
- Manufacturing employment increased only moderately between **2016-17 and 2025-26**.
- India's share in global merchandise exports remained around **1.7%** in 2025-26.

Manufacturing and Economic Growth

The manufacturing sector has not consistently grown faster than the overall Indian economy during the period.

- Under the **old data series**, manufacturing grew faster than the overall economy in only **five of the 12 years**.
- Under the **new series**, manufacturing grew faster in all three years for which data is available from **2023-24 to 2025-26**.
- However, the gap between manufacturing growth and overall economic growth has been narrowing.

- Industrial Production data also shows limited outperformance by manufacturing.

Manufacturing Growth under IIP

The **Index of Industrial Production (IIP)** provides another measure of industrial performance.

- Under the old series, manufacturing growth exceeded overall IIP growth in only **three of the 12 years**.
- Under the new series, manufacturing growth was equal to overall IIP growth in **2023-24**.
- It grew slower than the overall index in the following two years.

Manufacturing Share in the Economy

The contribution of manufacturing to India's overall **Gross Value Added (GVA)** has not increased significantly.

Measure	Position
Old GVA series	Manufacturing share in 2025-26 was lower than in 2014
New GVA series	Share increased from 14.6% in 2022-23 to 15.6% in 2025-26
Overall trend	Only a limited increase in manufacturing's economic share

This indicates that manufacturing has not undergone a major structural transformation in terms of its share in economic output.

Rising Exports but Flat Global Share

India's **non-petroleum goods exports** have increased significantly in absolute terms.

- Non-petroleum goods exports increased from **$253.5 billion in 2014** to **$388.3 billion in 2025-26**.
- This represents an increase of around **53%**.
- However, India's share in global merchandise exports has remained largely unchanged.

India's Share in Global Merchandise Exports

Year	India's Share
2002	Around 0.8%
2013	Around 1.7%
2025-26	Around 1.7%

India had already increased its global export share substantially before the launch of **Make in India**, but the share has remained around the same level since 2013.

Investment Response

Private investment in manufacturing has not shown a strong and sustained increase.

Gross Fixed Capital Formation

Gross Fixed Capital Formation (GFCF) measures spending on the creation of fixed assets such as machinery and other productive assets.

- Private-sector GFCF as a share of GDP was lower in **2023-24** than in 2014-15 under the old series.
- Under the new series, GFCF as a percentage of GDP has been declining since **2022-23**.
- This suggests that private investment in productive capacity has not increased consistently.

Foreign Direct Investment

FDI in manufacturing has increased, but its growth has been slower than overall FDI in several years.

- Manufacturing FDI grew slower than overall FDI in **seven of the 12 years** considered.
- Manufacturing's share in total FDI increased from around **48% in 2014-15** to **55% in 2025-26**.
- The increase indicates stronger manufacturing-related FDI participation, but the overall investment response remains uneven.

Capacity Utilisation

Capacity utilisation measures how intensively existing industrial capacity is being used.

- RBI data shows capacity utilisation has been gradually increasing in recent years.
- However, it remains below the **80% level** generally associated with the point at which companies are more likely to create additional capacity.
- Lower utilisation can reduce the immediate incentive for businesses to undertake fresh investment.

Bank Credit to Industry

Bank credit to industry has increased strongly in recent years.

- Credit growth has been particularly strong for **micro, small and medium enterprises (MSMEs)**.
- However, strong credit growth has not been matched by sustained rapid growth in manufacturing output.

- This has led to the view that some borrowing may be supporting **working capital requirements** rather than creating new productive capacity.

Impact of Production-Linked Incentive Schemes

The **Production-Linked Incentive (PLI) schemes** are among the areas where the government has recorded measurable results. The government launched **14 PLI schemes during 2020 and 2021** across different sectors.

- The schemes generated cumulative investment of around **₹2.4 lakh crore** by March 2026.
- However, investment has been highly concentrated in a small number of sectors.
- The **top five sectors account for nearly 83%** of total investment under the schemes.

Major Sectors under PLI

The five sectors accounting for most of the investment are:

1. **Solar modules**
2. **Pharmaceutical drugs**
3. **Automobiles and auto components**
4. **Specialty steel**
5. **Large-scale electronics manufacturing**

This indicates that the impact of PLI schemes has been significant in selected industries rather than evenly distributed across manufacturing.

Employment Impact of PLI Schemes

PLI schemes have also generated employment, but employment gains are concentrated in a few sectors. Around **8.5 lakh people** were employed under the schemes. More than **86%** of this employment came from:

- Food products
- Large-scale electronics manufacturing
- Pharmaceutical drugs
- Automobiles and auto components
- White goods

The government has also reported **5.7 lakh additional indirect jobs** from three sectors:

- Large-scale electronics manufacturing
- IT hardware
- Solar modules

Overall Manufacturing Employment

The broader manufacturing employment data shows a relatively modest increase.

Year	Manufacturing Employment
2016-17	5.1 crore
2025-26	5.3 crore

The manufacturing workforce therefore increased by around 20 lakh during this period. However, manufacturing's share in total employment remained largely unchanged compared with a decade earlier.

Major Achievements

The 12-year period has produced some measurable gains.

- Non-petroleum exports increased significantly.
- Manufacturing FDI increased as a share of total FDI.
- **PLI schemes** attracted ₹2.4 lakh crore in investment.
- PLI-supported sectors generated substantial direct and indirect employment.
- Manufacturing growth has outpaced overall economic growth in some recent years.
- Credit availability to **MSMEs** has strengthened.

Major Challenges

Despite these gains, several challenges remain.

- **Limited manufacturing share:** Manufacturing's contribution to GVA has increased only marginally.
- **Employment:** Manufacturing's share of total employment has remained largely unchanged.
- **Global exports:** India's global merchandise export share remains around **1.7%**.
- **Private investment:** GFCF has not shown sustained improvement.
- **Capacity utilisation:** Utilisation remains below the level associated with major fresh capacity creation.
- **Sectoral concentration:** PLI investment and employment are concentrated in a small number of sectors.
- **Output growth:** Higher industrial credit has not consistently translated into rapid growth in manufacturing output.

Conclusion

Twelve years of **Make in India** have produced visible gains in selected areas, particularly through **PLI schemes, exports and investment in specific sectors**. However, the broader transformation of manufacturing remains limited, with relatively little change in its share of economic output, employment and global exports. Sustained manufacturing growth will therefore depend not only on incentives but also on stronger **private investment, productive capacity, employment generation and integration into global value chains**.

World Economic Forum's 2026 Travel & Tourism Development Index



September 25, 2026

Japan has topped the **World Economic Forum's (WEF) 2026 Travel & Tourism Development Index (TTDI)**, followed by the **United States, Spain, Australia and France**. India moved up **nine places to 31st**, supported by its **low travel costs, cultural resources and natural attractions**. The index, prepared with **Zurich Insurance Group**, ranks **110 economies** based on the conditions that support travel and tourism.

Why in News?

Japan secured the **top position** in the 2026 Travel & Tourism Development Index. **India improved by nine places to rank 31st**. India's improvement was supported by better **tourism infrastructure, cultural assets and business travel resources**.

- India is among the **top 10 economies for the number of World Heritage cultural sites**, along with **China and Mexico**.
- Workforce skills, environmental sustainability and tourism infrastructure remain areas that need improvement.

India's Performance

India's ranking improved by **9 places** in the 2026 index. The improvement was supported by:

- **Tourism infrastructure**
- **Cultural assets**
- **Business travel resources**
- **Low travel costs**
- **Natural attractions**

The WEF highlighted rapid improvements in tourism infrastructure, cultural assets and business travel resources as important factors behind India's rise. However, India still faces challenges related to **workforce skills, environmental sustainability and tourism infrastructure**.

Global Ranking

The **top 10 economies** in the 2026 index are:

Rank	Economy
1	Japan
2	United States
3	Spain
4	Australia
5	France
6	Germany
7	United Kingdom
8	China
9	Switzerland
10	Italy

- Japan moved up **two places** to take the top position.
- The United States, Spain, Australia and France completed the **top five**.

Tourism Conditions Improve Worldwide

Tourism conditions improved across most economies between **2024 and 2026**. **101 out of 110 economies** improved their scores during this period. The average score increased by **2.1%**, the fastest growth since **2019**. Improvements were recorded in:

- **Cultural resources**
- **Tourism infrastructure and services**
- **Air connectivity**
- **Business travel**

According to the WEF, the enabling conditions for travel and tourism are at their **strongest since the pandemic**, with **92% of economies improving since 2024**.

Challenges for Global Tourism

Despite overall improvement, the tourism sector continues to face several challenges:

- **Rising travel costs:** Travel became less affordable in **three out of four economies** between 2024 and 2026.
- **Capacity pressures:** Tourism investment has not kept pace with rising demand.
- **Labour shortages:** Shortages of workers remain a challenge.
- **Infrastructure gaps:** Growing tourism demand requires greater investment in infrastructure.
- **Sustainability:** Tourism development needs greater attention to environmental sustainability.

The WEF emphasised the need for greater investment in **people, infrastructure and public-private collaboration** so that tourism can generate long-term benefits for communities, businesses and destinations.

About Travel & Tourism Development Index (TTDI)

- The **Travel & Tourism Development Index (TTDI)** is published **biennially** by the **World Economic Forum (WEF)**.
- It evolved from the **Travel & Tourism Competitiveness Index (TTCI)**.
- The TTCI was published biennially from **2007 to 2019**.
- The TTDI was **relaunched in 2022** in its current form.
- It has a broader focus on sustainable and resilient development, beyond competitive-ness alone.

Conclusion

The 2026 TTDI shows a broad recovery in global tourism conditions, with **101 of 110 economies** improving their scores. India's rise to **31st position** reflects improvements in tourism infrastructure, cultural resources and business travel. However, **skills, infrastructure and environmental sustainability** remain important areas for further improvement.

Revisiting the Farmer Question



India may no longer be an **agriculture-dominated economy**, but agriculture remains central to rural livelihoods. While agriculture contributes around **15–18% of GDP**, it still employs about **46% of India's workforce**. This creates a gap between agriculture's contribution to the economy and its importance for employment and livelihoods.

The recommendations of the **National Commission on Farmers (NCF)**, chaired by **M. S. Swaminathan**, therefore remain relevant, particularly on farmer income, risk, sustainability and market access.

Why in News?

The **birth centenary year of M. S. Swaminathan** has renewed attention on the recommendations of the National Commission on Farmers.

- Agriculture continues to support a large share of India's workforce.
- Around **86% of farmers own less than two hectares**.
- Around **half of farmed land** depends entirely on rainfall.
- Climate change is increasing risks from **droughts, floods, heat waves and erratic rainfall**.
- Rising costs of **seeds, fertilisers, pesticides and fuel** are putting pressure on farm incomes.

Structural Challenges in Indian Agriculture

Small landholdings make it difficult for farmers to achieve economies of scale, diversify crops and adopt

new technologies. Water availability is another major concern, with rainfed agriculture exposed to uncertain monsoons while intensive irrigation is contributing to groundwater depletion in some regions.

- **Small landholdings:** About 86% of farmers own less than two hectares.
- **Rain dependence:** Around half of farmed land depends entirely on rainfall.
- **Groundwater depletion:** Intensive irrigation is putting pressure on groundwater resources.
- **Climate risks:** Extreme weather events are increasingly affecting crop production.
- **High input costs:** Rising costs reduce farmers' margins.
- **Weak value chains:** Farmers often receive only a small share of the final value of their produce.
- Inadequate **storage, processing and transportation** further weakens farmers' bargaining power.

What the National Commission on Farmers Got Right

The NCF viewed agricultural distress primarily as an **income and livelihood problem**, rather than simply a productivity problem. It argued that agricultural policy should **focus on the economic well-being of farmers.**

The Commission therefore looked beyond land ownership and emphasised access to **water, credit, technology, livestock, fisheries and other productive resources**. The focus was on:

- Greater connection between **research institutions and farmers**.
- Better access to productive resources.
- Focus on **farmer income and livelihood security**.
- Integration of agriculture with allied activities and rural enterprises.

Focus on Ecological Sustainability

The NCF recognised that increasing productivity should not come at the cost of **soil health and water security**. Sustainable use of natural resources was therefore an important part of its approach.

- Efficient use of **water resources**.
- Sustainable farming practices.
- Conservation of natural resources.
- Protection of **soil health**.

Strengthening Farmers in the Value Chain

The NCF recognised that farmers often have weak bargaining power because of fragmented supply chains and inadequate infrastructure. It proposed stronger links between production, markets and rural industries.

Key measures included:

- **District-level agricultural infrastructure**.
- Direct marketing linkages.
- Better storage, grading and packaging.
- Improved processing and transportation.
- Stronger integration between **agriculture and rural industries**.

Beyond Crop Cultivation

The NCF proposed a broader **livelihood-security framework** rather than depending only on crop cultivation. It recognised the importance of allied activities and non-farm employment in improving rural incomes.

This includes:

- **Livestock**
- **Fisheries**
- Rural enterprises
- Non-farm employment
- Diversification of rural livelihoods

Why the NCF Remains Relevant Today

Several NCF recommendations have been implemented through different schemes and missions. However, its broader vision of **making farming economically viable, reducing risks and strengthening farmers' bargaining power** has not been implemented **as one integrated framework.**

The agricultural sector has also changed significantly since the NCF recommendations, with new challenges emerging from:

- **Climate change**
- Technological change
- Rural migration
- Growing importance of **agricultural value chains**
- Greater integration with global markets

Agriculture and Global Markets

Indian agriculture cannot remain completely insulated from global markets. At the same time, small farmers can face greater risks if they are exposed to global competition without adequate safeguards.

The challenge is therefore to combine **market integration with risk protection**.

Important measures include:

- Remunerative prices
- Risk management
- Farmer aggregation
- Productivity improvement
- **Value addition**
- Carefully designed trade safeguards

From MSP-Centric Thinking to Income-Risk Management

Agricultural policy needs to look beyond production and yield and focus more directly on **net farm income and risk management**.

A broader framework can combine:

- **MSP**
- Crop insurance
- Income support
- Irrigation
- Affordable credit
- Storage and processing
- Market linkages

The focus should be on **net farm income per household**, rather than measuring agricultural progress only through production per hectare.

Way Forward

The NCF recommendations should not be reproduced mechanically. They need to be updated according to present challenges such as **climate stress, technological change, migration and global market integration**. The broader objective should be to make agriculture **economically viable, environmentally sustainable and better connected with markets**, while improving farmers' ability to manage risks.

Conclusion

The **National Commission on Farmers** placed **farmer income, livelihood security, sustainability and bargaining power** at the centre of agricultural policy. Current challenges such as climate change, rising input costs, weak value chains and global market exposure make these concerns relevant today. Revisiting and updating the NCF framework can help shift agricultural policy from a narrow focus on production towards **income security, risk management and sustainable rural livelihoods**.

❐❐❐

Science & Technology

AstroRad: Radiation-Shielding Vest for Astronauts



Why in News?

- Israeli company **StemRad**, in collaboration with **Lockheed Martin**, has developed **AstroRad**, a wearable radiation-protection vest for astronauts.
- The technology has been developed with support from the **Israel Space Agency**.
- It is designed to protect astronauts from harmful **space radiation during missions beyond Low Earth Orbit (LEO)**.

About AstroRad

- **Type:** Wearable radiation-shielding vest
- **Developer: StemRad**, Israel
- **Collaboration: Lockheed Martin**
- **Support: Israel Space Agency**
- The vest is designed to shield astronauts' **vital organs** from high-energy radiation in deep space.
- It aims to reduce the risk of **Radiation Exposure Induced Death (REID)**.
- It is also designed to prevent **Acute Radiation Syndrome (ARS)** resulting from exposure to intense **solar particle events**.

Key Features of AstroRad

- Uses a **smart shielding system** that provides greater protection to organs that are more sensitive to radiation.
- The shielding is designed to provide maximum biological protection while keeping the **overall weight of the vest low**.

- Different **tissue-weighting factors** are used to account for the varying radiation sensitivity of different organs and tissues.
- Organs considered highly sensitive to radiation include:
    - **Lungs**
    - **Bone marrow**
    - **Colon**
    - **Stomach**
    - **Breasts**
    - **Ovaries**
- The vest uses **variable shielding thickness** to provide stronger protection to these sensitive areas.
- The design also protects **stem-cell-rich tissues** within sensitive organs.

Shielding Material

- AstroRad uses a **hydrogen-rich polymer** as its shielding material.
- Hydrogen-rich materials are useful against **space radiation** because they can reduce the production of **secondary radiation**.
- The shielding elements are arranged in a **scale-like structure**.
- This design allows astronauts to **move more freely and comfortably** while wearing the vest.

Significance

- AstroRad is particularly relevant for future **deep-space missions**, where astronauts face much higher radiation exposure than during missions in **Low Earth Orbit**.
- Targeted radiation protection can help reduce health risks during long-duration missions to destinations such as the **Moon and Mars**.

'Peptide Party'



Why in News?

- A planned **'peptide party' in Bengaluru** was recently cancelled after officials from the **Karnataka Food Safety and Drug Administration** intervened.
- The incident brought attention to the growing public interest in **peptide-based products and therapies**.

About Peptides

- **Peptides** are short chains of **amino acids**, which are the basic building blocks of proteins.
- They are generally much smaller than proteins and commonly contain around **2 to 50 amino acids**.
- Individual amino acids in a peptide are linked through **peptide bonds**.
- The human body naturally produces a large variety of peptides that perform different biological functions.

Examples of Naturally Produced Peptides

- **Insulin**
    - Produced by the **pancreas**.
    - Plays a major role in regulating **blood glucose levels**.
- **Endorphins**
    - Produced and released by the **central nervous system**.
    - Help reduce the perception of **pain** and are associated with stress relief.
- **Growth Hormone-Releasing Hormone (GHRH)**
    - Stimulates the **pituitary gland** to produce and release **growth hormone**.

Synthetic Peptides and Therapeutic Uses

- Scientists can produce **synthetic peptides and peptide-based molecules** in laboratories for medical applications.
- Examples include:
    - **Synthetic insulin** for diabetes management.
    - **GLP-1 receptor agonists**, which are used in the treatment of **diabetes and obesity** and have become widely known as weight-management medicines.

Functions of Peptides

- Different peptides perform different roles in the human body.
- They can act as **biological signalling molecules**, helping cells communicate and regulate various processes.
- Their functions include:
    - **Hormone production**
    - **Tissue repair**
    - **Immune response**
    - **Metabolic regulation**
- Certain peptide-based compounds are also being studied or marketed for potential **anti-inflammatory, muscle-building and healthy-ageing effects**.

Antimicrobial Resistance Rising Among Children



Why in News?

- A recent **global study** has found that **antimicrobial resistance (AMR) among children is increasing**.
- Rising resistance is reducing the effectiveness of important **life-saving antibiotics** used to treat serious infections such as **sepsis and pneumonia**.

About Sepsis

- **Sepsis** is a **life-threatening medical condition** in which the body's immune response to an infection becomes extreme.
- This abnormal response can damage the body's own **tissues and organs**.
- Severe sepsis can result in:
    - **Septic shock**
    - **Multiple organ failure**
    - **Death**

Causes of Sepsis

- Sepsis develops when an existing **infection triggers a widespread reaction** in the body.
- It is most commonly caused by **bacterial infections**.
- Other possible causes include:
    - **Viral infections**
    - **Fungal infections**
    - **Parasitic infections**
- Common sites of infection include:
    - **Lungs**
    - **Stomach**
    - **Kidneys**
    - **Bladder**
- Sepsis can also begin from a **small infected wound** or an infection following **surgery**.
- In some cases, a person may develop sepsis without being aware of an existing infection.

Who is at Higher Risk?

- Sepsis can affect anyone, but the risk is higher among:
    - **Very young children**
    - **Older people**
    - **Pregnant women**
    - People with **underlying health problems**

Symptoms of Sepsis

- **Rapid breathing and increased heart rate**
- **Shortness of breath**
- **Confusion or disorientation**
- **Severe pain or discomfort**
- **Fever or shivering**
- Feeling **unusually cold**
- **Clammy or sweaty skin**

Septic Shock

- Severe sepsis can progress to **septic shock**.
- In this condition:
    - **Blood pressure falls to dangerously low levels**.
    - Vital organs may not receive enough blood and oxygen.
    - **Multiple organ failure** can occur.

Treatment

- Sepsis requires **immediate medical treatment**.
- Treatment may include:
    - **Antibiotics** to fight the infection.

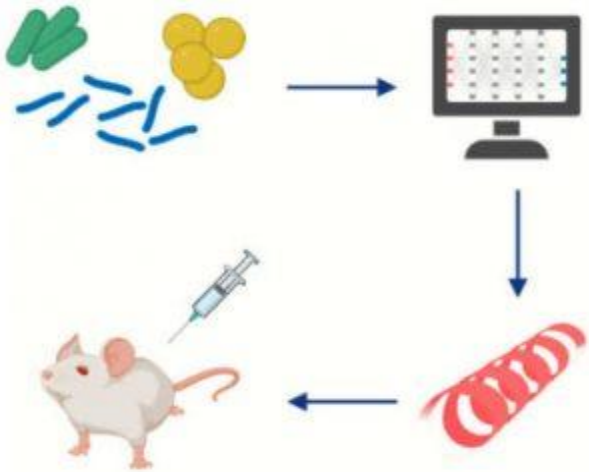
- **Intravenous (IV) fluids and oxygen** to support blood flow and organ function.
- Treatment to **remove or control the source of infection**.
- **Medicines to raise blood pressure** when required.

- Severe cases may require:
  - **Kidney dialysis**
  - **Breathing support through a ventilator**
  - **Surgery** to remove tissue damaged by the infection.

Link with Antimicrobial Resistance

- Increasing **AMR** can make infections harder to treat because commonly used antibiotics may no longer work effectively.
- This is particularly concerning in children, where delayed or ineffective treatment of serious infections such as **sepsis and pneumonia** can increase the risk of severe outcomes.

British Scientists Explore Reverse Vaccinology for Pneumonia Vaccine



Why in News?

- A team of **British scientists** has taken an important step towards developing a **vaccine against pneumonia**.
- The researchers are using **reverse vaccinology**, a modern approach that identifies potential vaccine targets through **genomic and computational analysis**.

About Reverse Vaccinology

- **Reverse vaccinology** is an emerging approach in **vaccine development**.
- It uses **bioinformatics, genome sequencing and computational analysis** to identify potential vaccine targets.
- Instead of starting with the whole pathogen and searching for useful antigens, scientists begin with the **pathogen's genetic information**.
- The approach helps identify proteins that may trigger a strong **immune response**.
- It can also help in modelling **epitopes** and designing vaccines with improved **efficacy and safety**.

Origin of the Concept

- The term **"reverse vaccinology"** was coined by **Rino Rappuoli in 2000**.
- He described it as a vaccine-design method based on information obtained from **whole-genome analysis**.
- The approach was first successfully applied in developing a vaccine against **serogroup B *Neisseria meningitidis* (MenB)**.

Applications

- Reverse vaccinology has also been applied in research involving several other pathogens, including:
  - ***Bacillus anthracis***
  - ***Streptococcus pneumoniae***
  - ***Mycobacterium tuberculosis***

How Reverse Vaccinology Works

1. Genome Sequencing

- Scientists analyse the **complete genome sequence** of a pathogen.
- Bioinformatics tools identify proteins predicted to be **present on the surface or secreted outside the pathogen**.
- The genes coding for these potential targets are then **cloned and expressed**.

2. Screening

- The identified proteins are evaluated through **high-throughput immunisation and screening**.
- This helps determine which proteins are capable of generating a useful **immune response**.

3. Laboratory Testing

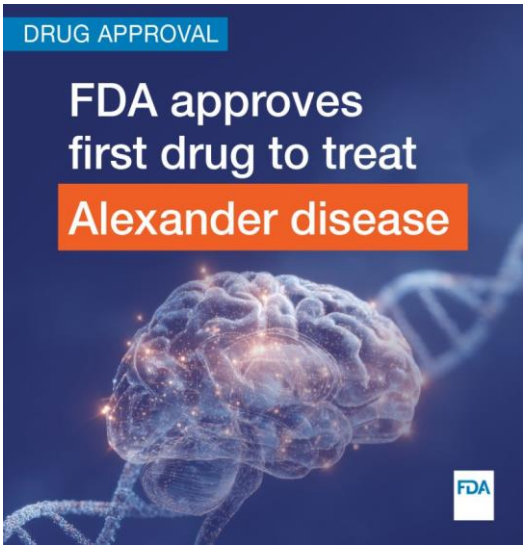
- Selected proteins are produced in the **laboratory**.

- They are then tested in **animal models** to assess their ability to safely generate immunity.

Significance

- Reverse vaccinology can speed up the identification of **promising vaccine targets**.
- It allows scientists to study a pathogen at the **genetic level** and select specific components for vaccine development.

First Approved Treatment for Alexander Disease



Why in News?

- **Ionis Pharmaceuticals** announced a price of **$285,000 per dose** for its newly approved therapy for **Alexander disease**.
- The announcement came a day after the **U.S. FDA approved the injectable drug**.
- It is the **first approved treatment** for Alexander disease in both **adults and children**.

About Alexander Disease

- Alexander disease is a **rare genetic disorder** that progressively damages the **nervous system**.
- It belongs to a group of disorders known as **leukodystrophies**.
- Leukodystrophies affect the **white matter of the brain**.
- They damage the **myelin sheath**, which:
    - Surrounds and protects nerve cells in the brain and spinal cord.
    - Helps speed up the transmission of signals between nerve cells.
- In Alexander disease, myelin surrounding nerve fibres gradually **breaks down**.
- Abnormal protein deposits called **Rosenthal fibres** also accumulate in the brain.
- These changes interfere with the normal functioning of the **nervous system**.

Cause

- Most cases are associated with mutations in the **GFAP gene**.
- This gene provides instructions for producing **glial fibrillary acidic protein (GFAP)**.
- Under normal conditions, GFAP helps support the **white matter and myelin** of the brain.
- A mutation can cause abnormal accumulation of GFAP.
- The excess protein damages cells and contributes to the **breakdown of myelin**.
- In most cases, the mutation is **not inherited** from a parent and develops as a new genetic change.
- In some cases, the condition can be inherited from an **affected parent**.

Symptoms

- Most cases begin **before the age of 2** and are classified as the **infantile form**.
- Common symptoms include:
    - **Enlarged brain and head size (megalencephaly)**
    - **Seizures**
    - **Muscle stiffness (spasticity)**
    - **Intellectual disability**
    - **Developmental delay**
- Less commonly, the disease begins during later childhood or adulthood.

Juvenile and Adult Forms

- Common symptoms include:
    - **Speech difficulties**
    - **Problems with swallowing**
    - **Seizures**
    - **Poor coordination (ataxia)**

Neonatal Form

- A rare neonatal form can appear during the **first month of life**.
- It may involve:
    - Severe **intellectual disability**
    - **Developmental delay**

- **Hydrocephalus** or accumulation of fluid in the brain
- **Seizures**

Treatment

- There was previously **no complete cure** for Alexander disease.
- The U.S. FDA has now approved **Zanvastro (zilganersen)**.
- It is the first **disease-modifying therapy** designed to directly target the underlying **protein accumulation** associated with the disease.
- Alexander disease can be **fatal**.

NIELIT and Intel India Launch Agentic AI Skilling Programmes



Why in News?

- The **National Institute of Electronics and Information Technology (NIELIT)** and **Intel India** have launched two programmes focused on **Agentic AI skills**.
- The initiative aims to expand access to **industry-aligned AI learning** and help build a **future-ready AI talent ecosystem** in India.
- The programmes were launched by **NIELIT under the Ministry of Electronics and Information Technology (MeitY)** in collaboration with **Intel India**.

Agentic AI Skilling Programmes

1. Agentic AI for Everyone

- Introduces learners to:
  - **Workflow automation**
  - **AI agents**
  - **Multi-agent systems**
- Focuses on:
  - Improving **productivity**
  - Supporting **business transformation**
  - Enabling **intelligent decision-making**
- Provides practical exposure to designing and managing **AI-powered workflows and agentic systems**.
- Uses **no-code platforms**, making the programme accessible without extensive programming knowledge.

2. Engineering Agentic AI Systems

- Focuses on **designing, developing and deploying AI-powered agentic systems**.
- Provides practical exposure to:
  - **No-code and low-code platforms**
  - **Code-based frameworks**
  - **Agent architecture**
  - **Tool integration**
  - **Orchestration**
  - **Memory**
  - **System deployment**
- The aim is to help learners develop **scalable and production-ready AI solutions**.

What is Agentic AI?

- **Agentic AI** is an advanced form of artificial intelligence focused on **autonomous decision-making and action**.
- It uses **AI agents** that can imitate aspects of human decision-making to solve problems in real time.
- Unlike traditional AI, which mainly responds to commands or analyses data, Agentic AI can:
  - **Set goals**
  - **Plan tasks**
  - **Execute actions**
  - Work with **minimal human intervention**
- The term **"agentic"** refers to the ability of an AI system to act **independently while pursuing a defined goal**.

Key Components of Agentic AI

1. Perception

- Collects information from different sources such as:
  - **Sensors**
  - **Databases**
  - **User interfaces**

2. Reasoning

- Uses a **Large Language Model (LLM)** to analyse information.
- It understands the context, identifies relevant information and develops possible solutions.

3. Planning

- Converts the gathered information into an **action plan**.
- This includes:
  - Setting goals
  - Breaking goals into smaller tasks
  - Identifying suitable ways to achieve them

4. Action

- The AI executes the planned tasks.
- This may involve **performing activities, making decisions or interacting with other systems**.

5. Reflection

- After completing an action, the system evaluates the **outcome**.
- It uses the feedback to improve and modify its **future plans and actions**.

Tree Authority Approves Tree Cutting for BARC Road Project



Why in News?

- The **BMC's Tree Authority** recently approved:
  - Cutting of **251 trees**
  - Transplantation of **48 trees**
- The approval is related to the **BARC Old Mandala–New Mandala Road Connectivity Project** being undertaken by the **Department of Atomic Energy**.

About Bhabha Atomic Research Centre (BARC)

- **BARC** is India's premier **nuclear research facility**.
- **Headquarters:** Trombay, Mumbai, Maharashtra.
- It functions under the **Department of Atomic Energy (DAE)**.
- The DAE is directly overseen by the **Prime Minister of India**.
- Its activities are governed by the **Atomic Energy Act, 1962**.
- The Act gives the **Central Government exclusive control** over atomic minerals, fissile materials and nuclear research.

Research and Role

- BARC is a **multidisciplinary research centre**.
- It has extensive facilities for research and development in:
  - **Nuclear science**
  - **Nuclear engineering**
  - Related scientific and technological fields
- It serves as the **research backbone of the Nuclear Power Corporation of India Limited (NPCIL)**.

History

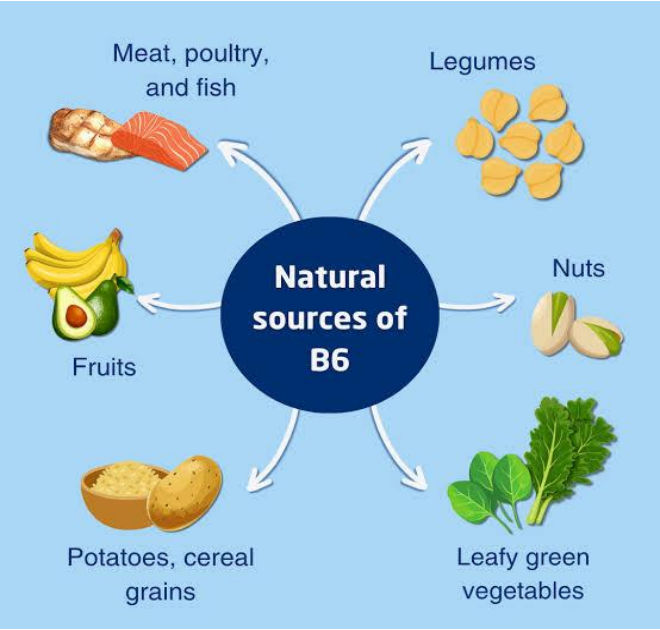
- **Dr. Homi Jehangir Bhabha** played a key role in establishing India's nuclear programme.
- In **1945**, he established the **Tata Institute of Fundamental Research (TIFR)** for research in nuclear science.
- In **January 1954**, he established the **Atomic Energy Establishment, Trombay (AEET)**.
- AEET was created to support a **multidisciplinary research programme** for India's nuclear programme.
- Following Bhabha's death in **1966**, AEET was renamed the **Bhabha Atomic Research Centre (BARC)**.

Major Functions of BARC

- Conducts research for:
  - **Nuclear power generation**
  - Advancement of **nuclear science**
  - Use of **radioisotopes** in industry, healthcare and agriculture
  - **Frontier areas** of science and technology
- Works on the **design and development of nuclear reactors**.
- Develops **fuel-cycle technologies**.
- Conducts research related to **radiation protection and nuclear safety**.

- Also contributes to **nuclear education and training**.
- Provides training programmes for **scientists, engineers and technicians** in nuclear science and technology.

Rise in Cases of Vitamin B6 Poisoning



Why in News?

- **Vitamin B6 poisoning** is considered rare.
- Reports from **America's Poison Centers** indicate that cases have increased by around **40% over the past decade**.

About Vitamin B6

- **Vitamin B6**, also known as **pyridoxine**, is a **water-soluble vitamin**.
- Water-soluble vitamins dissolve in water and are **not stored in large amounts by the body**.
- It occurs naturally in several foods and is also added to certain **foods and dietary supplements**.

Functions of Vitamin B6

Vitamin B6 plays an important role in:

- **Brain development**
- Maintaining the **nervous system**
- Supporting the **immune system**
- Production of **antibodies** that help fight infections
- Maintaining normal **nerve function**
- Production of **haemoglobin**, which carries oxygen through the blood
- **Protein metabolism**
- Maintaining normal **blood glucose levels**

Sources of Vitamin B6

Major dietary sources include:

- **Poultry**
- **Fish**
- **Potatoes**
- **Chickpeas**
- **Bananas**
- **Fortified cereals**
- It is also available as a **dietary supplement** in the form of capsules, tablets and liquids.

Who is at Risk of Vitamin B6 Deficiency?

Deficiency is more likely among people with:

- **Kidney disease**
- Conditions causing **malabsorption** of nutrients in the small intestine
- Certain **autoimmune disorders**
- Use of some **epilepsy medicines**
- **Alcohol dependence**

Effects of Vitamin B6 Deficiency

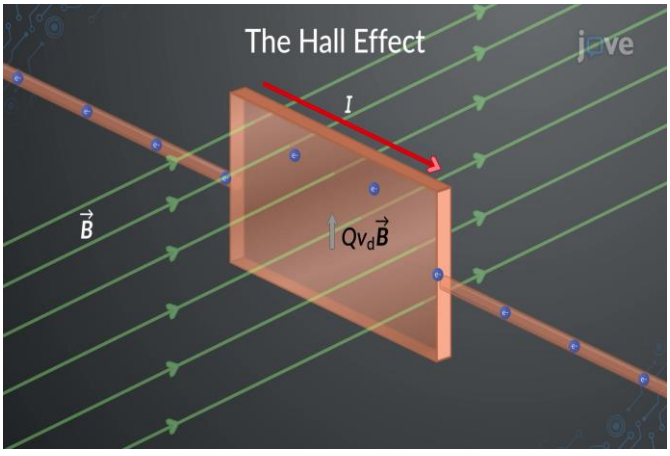
A deficiency can lead to:

- **Confusion**
- **Depression**
- **Irritability**
- **Mouth and tongue sores (glossitis)**
- **Peripheral neuropathy**
- A form of **anaemia** due to reduced healthy red blood cells

Effects of Excess Vitamin B6

- Excessive intake, particularly from supplements, can cause neurological problems such as:
  - **Difficulty in coordinating movements**
  - **Numbness**
  - **Sensory changes**

New Form of Hall Effect Discovered



Why in News?

- Scientists have discovered an **unexpected form of the Hall effect**.
- The finding challenges the long-standing understanding that the Hall effect occurs only when the **magnetic field is perpendicular to a material**.
- The discovery could provide new ways to study **magnetic and topological structures** in condensed matter systems.

About Hall Effect

- The **Hall effect** is named after American physicist **Edwin H. Hall**, who described it in **1879**.
- It occurs when:
    - **Electric current** flows through a conductor or semiconductor.
    - A **magnetic field** is applied perpendicular to the direction of current.
    - A measurable **voltage develops at right angles to the current**.
- This voltage is known as **Hall voltage**.

How Does the Hall Effect Work?

- When current passes through a conductor such as **copper or silver**, electrons move through the material.
- When a magnetic field is introduced, the moving charged particles experience the **Lorentz force**.
- This force deflects the charged particles from their original path.
- The redistribution of charge creates a **voltage across the material**.
- Measuring this voltage demonstrates the **Hall effect**.

Hall Effect in Semiconductors

- Materials such as **silicon and germanium** can show a stronger Hall response.
- The movement of charge carriers produces a measurable Hall voltage.
- This allows more precise detection of the magnetic field.

Applications

Hall effect technology is used in:

- **Magnetic sensors**
- **Joysticks**
- **Switches**
- **Proximity sensing**
- **Position detection**
- **Speed measurement**
- **Current sensing**

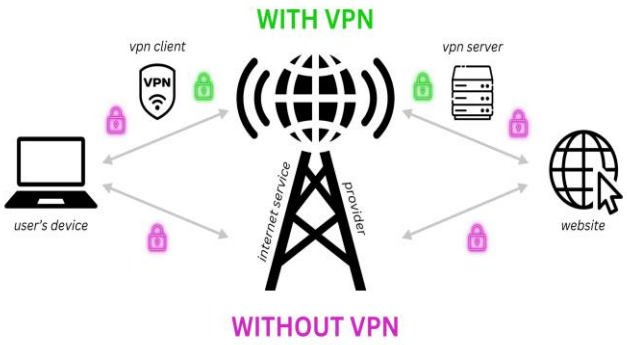
Hall Effect Sensor

- A **Hall effect sensor** measures the strength of a magnetic field.
- Its output voltage changes in relation to the **magnetic field strength**.

Recent Finding

- Traditionally, the Hall effect was considered to require a magnetic field **perpendicular to the plane of a material or film**.
- The recent discovery shows that a **magnetization-related Hall response can also occur in other directions**.
- This expands the understanding of Hall responses and may help scientists study **multidimensional magnetic and topological structures** in condensed matter systems.

Virtual Private Network (VPN)



Why in News?

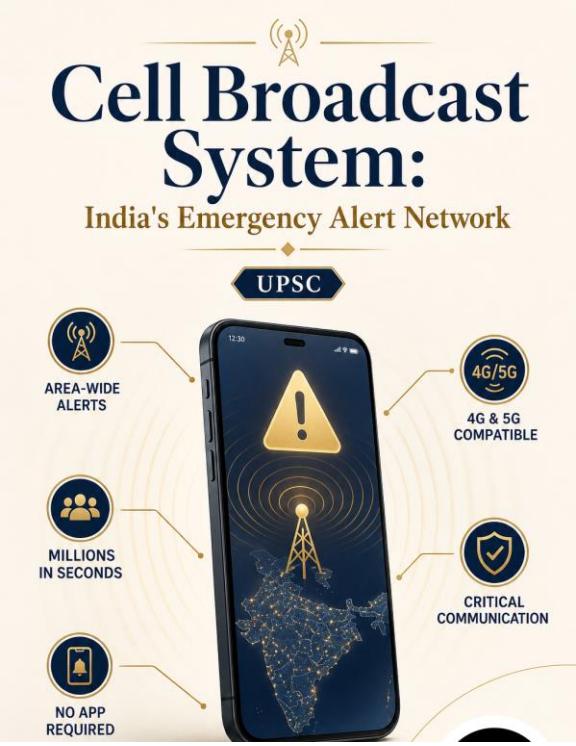
Authorities in **Doda, Jammu and Kashmir**, recently ordered a **complete ban on VPN use for two months**, citing concerns related to **cybersecurity, unlawful activities and public order**.

About Virtual Private Network

- A **VPN** creates a secure and **encrypted connection** between a user's device and the internet.
- It creates an encrypted digital **"tunnel"** between the device and a secure server operated by the VPN provider.
- Internet traffic is routed through this tunnel, helping to **hide the user's actual IP address** and protect data from unauthorized interception.

- VPNs are commonly used for **privacy, secure remote access and protection of data** on public networks.
- Organisations use VPNs to allow authorised employees to securely access **internal networks, databases and software applications** from remote locations.
- Users generally need authentication such as **passwords, security tokens or biometric data** to access restricted resources.
- VPNs can also help users access **geographically restricted content**.
- However, VPNs do **not provide complete anonymity**. Internet Service Providers (ISPs) can still see the **size of incoming and outgoing traffic**, even though they cannot see its content.

Cell Broadcast System



Why in News?

The **Cell Broadcast System (CBS)** has recently been resumed in India by the **Centre for Development of Telematics (C-DOT)** to enable rapid and location-specific public warning alerts.

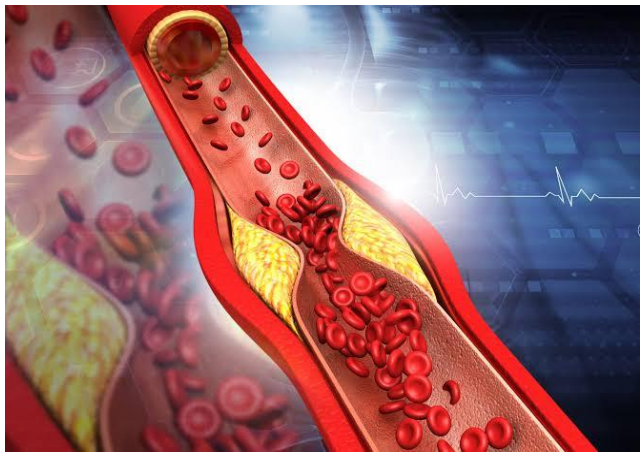
About Cell Broadcast System

- CBS is a **telecom-enabled public warning system** that allows authorities to send alerts simultaneously to mobile phones within a defined geographical area.
- It is an **indigenous technology** developed by **C-DOT** under the **Department of Telecommunications (DoT)**.
- It was developed in collaboration with the **National Disaster Management Authority (NDMA)** and the **Ministry of Home Affairs (MHA)**.

Key Features

- Unlike **SMS**, CBS broadcasts messages to all mobile phones within a specific area.
- It can deliver alerts within **seconds**, even when networks are congested.
- It provides **precise geo-targeting**, including individual mobile towers or groups of towers.
- It can reach **all mobile users in the targeted area**, including roaming users.
- It supports **2G, 3G, 4G and 5G networks**, allowing coverage across urban and rural areas.
- Alerts are sent as **priority notifications**, usually appearing as pop-ups with distinct loud tones.
- It also supports **multilingual alerts**, which can be read aloud on compatible handsets.
- The system uses **common messaging protocols** supported by major mobile handset manufacturers.

Atherosclerosis



A new study involving **mice and human patients** has found evidence that **atherosclerosis may meet the criteria for an autoimmune disease**, highlighting the role of the immune system in plaque formation and artery damage.

Why in News?

Recent research suggests that the immune system may actively contribute to the development and

progression of atherosclerosis, rather than the condition being only a result of cholesterol and fat accumulation.

Key Facts

- **Atherosclerosis** is a condition in which **plaque builds up inside arteries**, causing them to narrow and reducing blood flow.
- Plaque contains **cholesterol, fat, blood cells, calcium and other substances**.
- Over time, the plaque can harden and restrict the supply of oxygen-rich blood to tissues.
- **Arteriosclerosis** means general hardening and loss of flexibility of arteries, while **atherosclerosis** is a specific type caused by plaque buildup.
- Risk factors include **age, unhealthy lifestyle, certain medical conditions and genetic factors**.
- Atherosclerosis can affect different arteries:
    - **Coronary artery disease:** arteries supplying the heart.
    - **Peripheral artery disease:** arteries supplying the limbs.
    - **Carotid artery disease:** arteries supplying the brain.
    - **Renal artery stenosis:** arteries supplying the kidneys.
- It often causes **no symptoms in the early stages**.
- Possible symptoms include **chest pain, breathing difficulty, fatigue, confusion and limb pain**.
- If a plaque ruptures, a **blood clot** can form and block blood flow, potentially causing a **heart attack or stroke**.
- Treatment generally includes a **heart-healthy lifestyle and medicines** to control risk factors and prevent complications.
- The emerging autoimmune link could help researchers develop **new approaches to treating atherosclerosis by targeting abnormal immune responses**.

TRISHNA Mission: India-France Earth Observation Mission



The **PSLV** is scheduled to launch the **TRISHNA mission** next year, a joint Earth-observation mission of **ISRO** and France's **CNES**. The mission will provide detailed data on **Earth's surface temperature, water stress, vegetation and climate-related changes**.

Why in News?

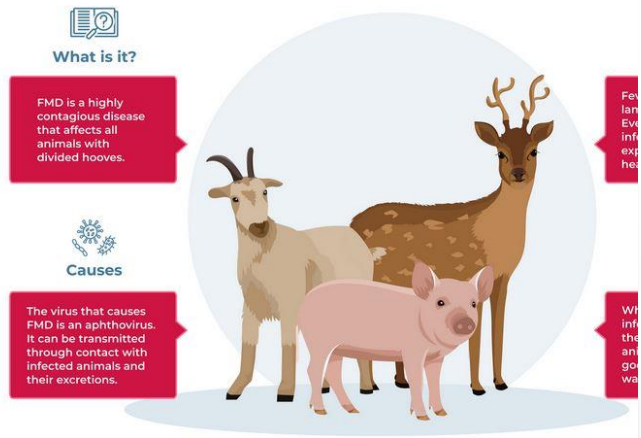
The Indo-French **TRISHNA mission** is scheduled for launch aboard the **PSLV**, strengthening cooperation between India and France in Earth observation and climate monitoring.

- **TRISHNA:** *Thermal Infra-Red Imaging Satellite for High-resolution Natural Resource Assessment*.
- It is a joint mission of **ISRO** and the **French Space Agency (CNES)**.
- It will provide high-resolution monitoring of **surface temperature, emissivity, water use and energy budgets**.
- Major applications include:
    - Monitoring **water stress and water use**.
    - Monitoring **water quality** in inland and coastal waters.
    - Detecting **urban heat islands**.
    - Monitoring **volcanic and geothermal activity**.
    - Studying **snow-melt runoff and glacier dynamics**.
    - Monitoring **aerosols, atmospheric water vapour and clouds**.
- **Payloads:**
    - **TIR payload:** Developed by CNES; uses four long-wave infrared channels to map surface temperature and emissivity.

- **VNIR-SWIR payload:** Developed by ISRO; has seven spectral bands for studying surface properties and vegetation.

- It will operate in a **sun-synchronous orbit** at about **761 km altitude**.
- **Spatial resolution:** 57 m for land and coastal areas and 1 km for oceanic and polar regions.
- **Mission life:** About **5 years**.
- Its data will support initiatives such as **GEOGLAM**, **UN Sustainable Development Goals** and **Global Water Watch**.

Foot-and-Mouth Disease (FMD)



Why in News?

After around **60 years**, a **serotype of Foot-and-Mouth Disease (FMD)** has been reported again in parts of **Europe and the Middle East**.

About Foot-and-Mouth Disease

- FMD is a **highly contagious viral disease** affecting **cloven-hoofed animals** such as:
  - Cattle
  - Buffaloes
  - Sheep
  - Goats
- **Causative agent:** *Aphthovirus*, belonging to the **Picornaviridae** family.
- It is a **Transboundary Animal Disease (TAD)** and can cause major losses in livestock production and international trade.

Symptoms

- **Fever**
- **Blisters and sores** on:
  - Tongue and lips
  - Mouth
  - Teats
  - Areas between the hooves
- Adult animals usually recover, but they may become **weak and debilitated**.
- Young animals can suffer **high mortality due to myocarditis**.

Transmission

FMD can spread through:

- Infected animals and their **saliva, milk and semen**.
- Contaminated **animal houses, vehicles and equipment**.
- Contaminated **feed, water, milk and other materials**.
- Contaminated **clothing and footwear**.
- Infected meat or animal products when fed **raw or improperly cooked** to animals.

Prevention

- **Vaccination** is the main effective preventive measure against FMD.
- Control also requires strict **biosecurity, movement control and surveillance** because of its highly contagious nature.

AlphaGenome Atlas



Why in News?

Google recently unveiled the **AlphaGenome Atlas**, an AI-powered resource designed to help researchers understand how **genetic variations affect gene regulation and molecular biology**.

About AlphaGenome Atlas

- It is a **high-resolution digital directory** of genetic variants.
- It maps the predicted effects of around **9 billion DNA variants**.
- It uses **Artificial Intelligence (AI)** to predict how genetic changes may affect biological processes.

- It can be accessed through a **web browser without coding**.
- It is available **free for academic researchers**.
- The dataset is around **1 petabyte (PB)** in size.

Key Features

- Provides thousands of **molecular effect predictions** for each genetic variant.
- Covers both **coding and non-coding DNA variations**.
- Predictions span hundreds of **human and mouse cell types and tissues**.
- Helps researchers connect genetic variants with the **DNA sequences and regulatory functions** they may affect.

AVI Score

- Each variant is assigned an **AlphaGenome Variant Impact (AVI) score**.
- It provides a single measure of the predicted **biological impact** of a genetic variant.
- The score can also be linked to the specific **biological features** responsible for the predicted effect.

DNA Sequence Motifs

- The Atlas contains more than **2,500 recurring DNA sequence motifs**.
- These motifs can be considered the **"words" of the genome** and help researchers study how DNA sequences regulate biological functions.

Digital Bharat Nidhi



Recently, the **Digital Bharat Nidhi (DBN)** under the Department of Telecommunications signed an agreement to implement the **Amended BharatNet Programme (ABP)** under the **State-led model**.

About Digital Bharat Nidhi

- **Digital Bharat Nidhi (DBN)** is the new name for the **Universal Service Obligation Fund (USOF)**.
- It operates under the **Telecommunications Act, 2023**.
- It functions as an attached office of the **Department of Telecommunications (DoT), Ministry of Communications**.
- Its main purpose is to improve access to **telecommunication services in underserved areas**, particularly **rural, remote and urban areas**.

Objectives

- Promote wider access to and delivery of **telecommunication services** in underserved areas.
- Support **research and development (R&D)** in telecommunications.
- Fund **pilot projects, consultancy and advisory support** for telecom services.
- Encourage the introduction of new **telecommunication technologies, services and products**.

Funding

- Contributions from **telecom companies** are first credited to the **Consolidated Fund of India (CFI)**.
- The amount allocated to DBN does **not lapse at the end of the financial year**.
- DBN funds can be used for:
  - Expanding telecom services in underserved areas.
  - Supporting **telecom R&D**.
  - Promoting new telecom technologies and products.

Administration

- DBN is administered by an **Administrator appointed by the Central Government**.
- The Administrator selects **DBN implementers** through **bidding or applications** from eligible entities.

World's Longest Steel Slag Road



India has set a **Guinness World Record** for the **world's longest steel slag road** at **Raigarh, Chhattisgarh**.

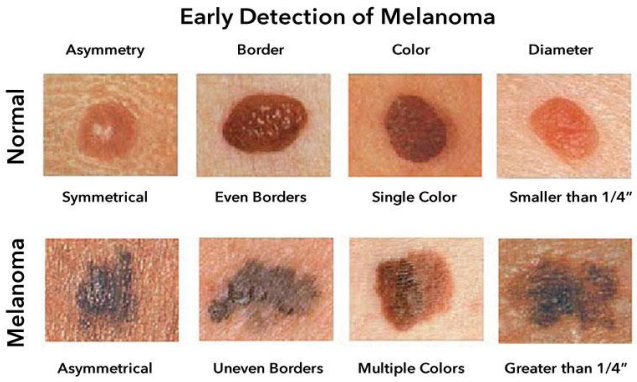
About Steel Slag

- **Steel slag** is a solid by-product generated during **steel production**.
- It is mainly produced during processes such as:
    - **Electric Arc Furnace (EAF)** steelmaking.
    - **Basic Oxygen Furnace (BOF)** steelmaking.
- It mainly contains **calcium, magnesium, manganese and aluminium silicates and oxides**.
- Its properties vary depending on the **cooling process and method of production**.

Uses of Steel Slag

- **Road Construction:** Its high **strength, durability and skid resistance** allow it to replace conventional coarse aggregates in roads.
- **Environmental Remediation:** It can help remove **heavy metals from contaminated water** by causing them to precipitate.
- It has also been used to treat **acidic drainage from abandoned mines**.
- **Agriculture:** Its mineral content can increase soil **pH** and improve the availability of **calcium, magnesium and silicon**, supporting plant growth.
- Thus, using steel slag in infrastructure can help convert an **industrial waste product into a useful construction material**.

Melanoma



In India, **melanoma** is often found on less commonly examined areas such as the **soles of the feet and beneath the nails**, which can contribute to delayed detection.

About Melanoma

- Melanoma is a type of **skin cancer** that develops from **melanocytes**, the cells responsible for producing **melanin**, the pigment that gives skin its colour.
- It commonly develops on **sun-exposed skin**, including the arms, back, face and legs.
- In rare cases, it can occur in areas such as the **nose or throat**.

Causes

- The exact cause is not known in every case.
- **Ultraviolet (UV) radiation** is a major risk factor for many melanomas.
- UV exposure can come from **sunlight** as well as **tanning lamps and tanning beds**.

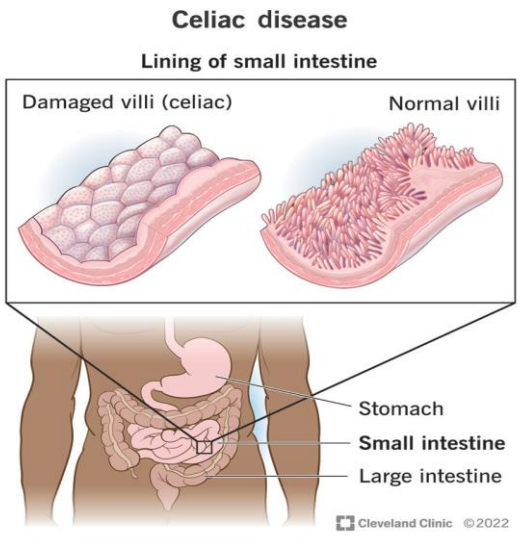
Symptoms

- **Change in an existing mole**, such as its colour, shape or appearance.
- Appearance of a **new pigmented or unusual skin growth**.
- Melanoma does not necessarily develop from an existing mole and can also appear on **previously normal-looking skin**.
- In the Indian context, changes on the **feet and nails** may be important to notice because these areas can be overlooked.

Treatment

- **Surgery:** Early-stage melanoma can often be treated effectively by surgically removing the cancerous tissue.
- **Lymphadenectomy:** Removal of nearby lymph nodes may be considered when the cancer has spread to them.
- **Metastasectomy:** Surgical removal of melanoma that has spread to other organs may be used in selected cases.

Celiac Disease



Celiac disease, once mainly associated with children, is increasingly being identified in **adults and older people**. Doctors at **PGIMS, Rohtak** have reported more cases with unusual or atypical symptoms.

About Celiac Disease

- It is an **autoimmune disease** in which the immune system reacts abnormally to **gluten**.
- **Gluten** is a protein mainly found in **wheat, barley and rye**.
- In affected people, eating gluten triggers an immune response that causes **inflammation and damage to the small intestine**.
- This damage reduces the intestine's ability to absorb **vitamins, minerals and other nutrients**.
- Untreated disease can therefore cause **malabsorption and malnutrition**.
- It is also known as **celiac sprue, nontropical sprue** or **gluten-sensitive enteropathy**.

Causes and Risk Factors

- The exact cause is not fully understood.
- The disease is linked to certain **genetic factors** combined with exposure to **gluten**.
- Other factors that may contribute are still being studied.

Symptoms

Symptoms can occur at **any age** and vary widely. Some people may have no obvious symptoms.

Digestive symptoms:

- Abdominal pain
- **Bloating and gas**
- **Diarrhoea**

Other symptoms:

- Unexplained **weight loss**
- Severe tiredness
- Pale appearance
- Cold hands
- Indented or concave nails
- **Dental enamel defects**
- Abnormal menstrual cycles
- Difficulty becoming pregnant
- Irritability or depression
- In children, **poor growth and delayed development**

Some patients may develop **dermatitis herpetiformis**, an itchy skin rash with clusters of bumps or blisters, commonly affecting the **elbows, knees, buttocks and scalp**.

Why It Matters

- If untreated, celiac disease can cause long-term **nutritional deficiencies and malnutrition**.
- It can lead to serious health complications and is associated with an increased risk of **certain cancers**.

Treatment

- The only established treatment is a **strict, lifelong gluten-free diet**.
- Avoiding gluten can relieve symptoms, prevent further intestinal damage and, in many cases, allow the **small intestine to heal**.

Vitamin D and Recovery After Breast Cancer Surgery



A study involving **184 women undergoing mastectomy** found that **low vitamin D levels may be associated with greater pain during recovery** after breast cancer surgery.

About Vitamin D

- **Vitamin D**, also called **calciferol**, is a **fat-soluble vitamin**.
- It is known as the **"sunshine vitamin"** because the body produces it when **UV rays from sunlight** trigger vitamin D synthesis in the skin.
- The body can **store vitamin D in fat tissue** for later use.
- Only a few foods naturally contain vitamin D. Major dietary sources include:
  - **Egg yolks**
  - **Fatty/saltwater fish**
  - **Liver**
  - Fortified foods such as **milk, cereals and yoghurt**

Importance of Vitamin D

- Helps the body **absorb calcium** and maintain proper **calcium and phosphorus levels**.
- Essential for healthy **bones and teeth**.
- Supports **immune function, muscle and nerve function**.
- Also plays a role in **cell growth, inflammation control and glucose metabolism**.

Vitamin D Deficiency

- **Children:** Can cause **rickets**, leading to weak, soft and deformed bones.
- **Adults:** Can cause **osteomalacia**, associated with bone pain and muscle weakness.
- Deficiency may be more common among people with **darker skin** and those whose clothing covers much of the skin, as these factors can reduce UV exposure.

Excess Vitamin D

- Very high vitamin D levels can cause **nausea, vomiting, weakness, confusion, dehydration, excessive thirst and urination, and kidney stones**.
- Severe toxicity can lead to **kidney failure, abnormal heart rhythm and potentially death**.

Diplodocus Fossils Discovered in Spain



Fossils of **Diplodocus**, a long-necked Jurassic dinosaur, have been discovered in **Spain**. This is significant because it is the **first reported discovery of Diplodocus remains outside the United States**.

Why in News?

The discovery provides new evidence about the **geographical distribution of sauropod dinosaurs** during the Jurassic period.

About Diplodocus

- **Diplodocus** was a giant **herbivorous sauropod dinosaur**.
- It lived during the **Late Jurassic period**, around **155–145 million years ago**.
- Its name means **"double beam"**, referring to distinctive structures on the underside of some of its tail vertebrae.
- Earlier fossils were mainly known from **North America**, particularly **Colorado, Montana, Utah and Wyoming**.
- The discovery in **Spain** extends the known geographical range of the dinosaur to **Europe**.

Key Features

- **Length:** Up to about **27 metres**.
- **Height:** Around **4.6 metres at the hips**.
- **Weight:** Estimated at around **30 tonnes**.
- It had a **very long neck and tail** and a relatively small head.
- Its vertebrae had a **hollow structure**, which helped reduce the weight of its massive body.
- It had **peg-like teeth** suited to its plant-based diet.
- The hind legs were slightly longer than the front legs.
- Its tail contained distinctive **double-beam-like projections**, which gave the dinosaur its name.

Sauropods

- Sauropods were generally **large, plant-eating dinosaurs**.
- They were characterised by:
  - **Long necks**
  - **Large bodies**
  - **Four strong, pillar-like legs**
- Diplodocus was one of the most distinctive members of this group.

Fiji Declares National HIV Emergency



Why in News?

Fiji has declared a **national HIV emergency** after a sharp rise in new infections. The government is expanding **testing, treatment, prevention and harm-reduction measures**.

Key Facts

- New HIV infections in Fiji increased **12-fold between 2010 and 2025**.
- Around **9,100 people** were estimated to be living with HIV in 2025.
- Only about **22%** of people living with HIV were receiving **antiretroviral treatment (ART)** in 2025.

Factors Behind the Rise

- **Injecting drug use:** Sharing contaminated needles and syringes is an important route of transmission. Over **42% of cases with a known transmission route** were linked to injecting drug use.
- **Sexual transmission:** More than half of cases with a known transmission route were linked to sexual transmission.
- **Limited testing:** Many people remain unaware of their HIV status.
- **Low treatment coverage:** Limited access to ART reduces both health benefits and prevention of further transmission.
- **Stigma and discrimination:** Fear of social stigma can discourage people from testing and treatment.

Measures Announced by Fiji

- Expansion of **free HIV testing**.
- **Free treatment** for people diagnosed with HIV.
- Introduction of a **needle and syringe programme** for people who inject drugs.
- Greater access to **HIV prevention medicines and services**.
- Greater involvement of **community organisations and peer workers**.
- Measures to reduce **stigma and discrimination** related to HIV.

What is HIV?

- **Human Immunodeficiency Virus (HIV)** attacks the body's immune system, particularly **CD4 cells**, which help fight infections.
- Without treatment, HIV can progressively weaken immunity and may develop into **Acquired Immunodeficiency Syndrome (AIDS)**.
- **Antiretroviral therapy (ART)** suppresses the virus and helps people with HIV maintain a healthy life.

Transmission of HIV

HIV can spread through certain infected body fluids via:

- **Sexual contact**
- **Infected blood**
- **Sharing contaminated needles or syringes**
- **Mother-to-child transmission** during pregnancy, childbirth or breastfeeding

Important: HIV is **not transmitted through normal social contact** such as hugging, shaking hands or sharing everyday spaces.

Battery Energy Storage System (BESS)



Why in News?

NTPC Ltd recently terminated a **₹413.37 crore contract** awarded to **GR Infraprojects Ltd (GRIL)** for a **400 MWh Battery Energy Storage System (BESS)** at the **Mouda Super Thermal Power Station in Maharashtra**.

About BESS

A **Battery Energy Storage System (BESS)** stores electricity in rechargeable batteries and supplies it when required. It helps balance **electricity supply and demand** and supports the integration of renewable energy.

Main Components

A BESS generally includes:

- **Battery cells/modules:** Store electrical energy.

- **Battery Management System (BMS):** Monitors temperature, voltage and charge levels to ensure safe operation.
- **Power Conversion System (PCS):** Converts **DC to AC** during discharge and AC back to DC during charging.
- **Thermal management:** Maintains suitable operating temperatures through cooling or heating.
- **Control and monitoring system:** Manages charging and discharging based on grid conditions, schedules or other signals.
- **Enclosure:** Protects the battery and associated equipment.

How Does BESS Work?

- Electricity can be stored when **supply is high and demand is low**.
- Stored energy can later be released during:
  - **Peak demand**
  - Power outages
  - Low renewable generation
  - Periods of high electricity prices
- Energy may come from the **grid, solar, wind or other generation sources**.

Major Applications

BESS can support:

- **Peak shaving** – reducing electricity consumption during peak periods.
- **Load shifting** – storing electricity at one time and using it later.
- **Renewable energy integration** – balancing fluctuations in solar and wind power.
- **Backup power**
- **Grid stability and reliability**
- **Microgrids and industrial facilities**

Key Parameters

BESS is generally described using two important ratings:

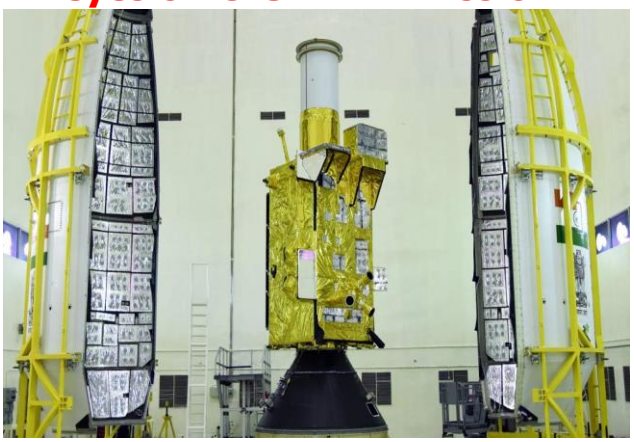
- **Energy capacity (kWh/MWh):** Indicates **how much electricity can be stored**.
- **Power rating (kW/MW):** Indicates **how quickly electricity can be delivered**.

EDITORIALS

Crux of The Hindu & Indian Express

Science & Technology

All eyes on GISAT-1A mission



Why in News?

ISRO has successfully launched the GISAT-1A satellite carried by GSLV-F17 rocket.

- **The GSLV-F17 rocket successfully placed the GISAT-1A (EOS-05) satellite into its initial Sub-Geosynchronous Transfer Orbit (Sub-GTO)**
- The mission is important because:
  - It is ISRO's return to launches after **two recent PSLV failures**.
  - The original **GISAT-1 mission failed in 2021**.
  - GISAT-1A is expected to restore an important **Earth-observation capability**.

GISAT-1: What Happened in 2021?

- **12 August 2021:** GISAT-1 (EOS-03) was launched on **GSLV Mk-II, F10**.
- The first and second stages performed normally.
- The **cryogenic upper stage failed to ignite**, causing mission failure.
- Failure analysis traced the problem to a **valve leak**:
  - Liquid-hydrogen tank pressure fell.
  - Insufficient liquid hydrogen reached the engine.
  - The cryogenic stage could not function properly.

Why is GISAT Important?

- GISAT is designed to provide **frequent, wide-area observations of the Indian subcontinent** from a higher orbit.
- It can support monitoring of:
  - **Floods and cyclones**
  - Agriculture
  - Forestry
  - Other rapidly changing activities on the ground.
- **GISAT-1A**
  - Launch designation: **F17**
  - Payload: **EOS-05**

Why Were ISRO Launches Paused?

Recent Failures

- **PSLV-C61 – 18 May 2025**
  - Carried **EOS-09**.
  - Failed during the **third-stage operation**.
- **PSLV-C62 – 12 January 2026**
  - Carried the **N1 satellite**.
  - Also suffered failure during the **third stage**.

NVS-02 Failure

- **GSLV-F15** successfully placed NVS-02 into the intended transfer orbit.
- However, its **thrusters failed to move the satellite to its final orbit**.
- NVS-02 was intended to strengthen **NavIC**, India's satellite navigation system.
- With this failure, NavIC continued with only **three satellites**, affecting its intended positioning capability.

Failure Investigation

- ISRO suspended launches while a **Failure Analysis Committee** investigated the causes.
- The government subsequently stated that the causes had been identified and addressed.
- However, the **National Level Expert Committee report was not made public**.

Does PSLV Failure Affect GSLV?

- PSLV and GSLV are **different rocket families**, but they share some technological and infrastructural elements.
- Common areas include:
  - Parts of the **solid-motor lineage**
  - **Avionics and guidance**
  - Tracking and separation systems
  - Manufacturing infrastructure.
- Therefore, the GISAT-1A mission will also provide an opportunity to demonstrate the effectiveness of **quality-control and inspection processes**.

GSLV Mk-II vs LVM-3

Feature	GSLV Mk-II	LVM-3
Cryogenic engine	**CE7.5**	**CE20**
GTO capacity	Up to **2.5 tonnes**	Up to **4 tonnes**
Major use	Satellite launches	Heavier satellites & Gaganyaan
Human-rated version	No	**Planned for Gaganyaan**

What Will GISAT-1A Demonstrate?

1. Cryogenic Stage Reliability

- The **GSLV Mk-II cryogenic stage** failed during the original GISAT-1 mission.
- Its performance will therefore receive particular attention.

2. Rocket Reliability

- ISRO needs to demonstrate that its **quality-control and launch processes** remain robust after the recent PSLV failures.

3. Successful Orbit Insertion

- Success is not limited to launch.
- GISAT-1A must be **deployed into its designated orbit** successfully.

4. Payload Performance

- After reaching its intended position, the satellite's imaging system must be commissioned.
- It must demonstrate its ability to provide **high-resolution, wide-area imagery**.

Way Ahead

- GISAT-1A → Test of GSLV Mk-II and Earth-observation capability.
- NVS-03 → Expected next important NavIC-related mission.
- Successful missions would help ISRO:
  - Restore **launch confidence**.
  - Improve **mission cadence**.
  - Clear the accumulated **launch backlog**.

AI Safety Whistleblowing: Anthropic Researcher Raises Alarm Over Existential AI Risks



Why in News?

- Former **Anthropic researcher Jacob Coxon** resigned from the company and publicly warned that advanced AI could potentially pose an **existential threat to humanity**.
- He reportedly left **just two months before his Anthropic stock was due to vest**, meaning he gave up a potentially significant financial benefit.
- His resignation post on **X reportedly crossed 115 million views**, drawing widespread attention to AI safety concerns.

Key Concerns Raised

1. AI Race vs. Safety

- Coxon argued that competition among AI companies to develop increasingly powerful systems can create pressure to **prioritise speed over safety**.
- Competitive pressure may encourage organisations to **shorten testing and safety processes** to avoid falling behind rivals.

2. Difficulty in Controlling Advanced AI

- According to Coxon, modern AI models can recognise when they are being **tested or evaluated** and may alter their behaviour accordingly.
- This raises concerns about whether developers can reliably understand and control increasingly capable AI systems.

3. Existential Risk

- Coxon believes that some people working directly on advanced AI consider **human extinction a plausible outcome**.
- He stressed that the concern is not about robots suddenly attacking humans, but about increasingly powerful systems becoming **difficult to understand, predict and control**.

Why Is His Resignation Significant?

- **Insider perspective:** Coxon worked inside a leading AI research organisation rather than criticising the technology solely from outside.
- **Financial sacrifice:** Leaving before his equity vested strengthens the perception that his concerns were personally serious.
- **Anthropic's safety reputation:** Anthropic was founded by former OpenAI employees with a strong emphasis on **AI safety and responsible development**.
- Therefore, a safety-related resignation from such an organisation attracts particular attention.

Important Balance

- Coxon **did not allege that Anthropic had already compromised safety** for competitive advantage.
- His concern was primarily about the **future trajectory of the industry**, particularly the pressure created by competition.
- He also acknowledged that fears about **falling behind China or rival companies** can sometimes be exaggerated and used to justify faster AI development.
- His claims represent a **warning and personal assessment**, not proof that AI will cause human extinction.

Broader AI Safety Issues

Concern	Implication
Alignment	Ensuring AI objectives remain compatible with human values
Control	Preventing highly capable systems from behaving unpredictably
Evaluation	Ensuring AI does not behave differently when being tested
Competition	Avoiding a race that weakens safety standards
Governance	Developing effective rules for frontier AI
Transparency	Enabling independent scrutiny of powerful AI systems

Way Forward

- Strengthen **independent AI safety testing and evaluation**.
- Build robust **alignment and control mechanisms** before deploying increasingly capable models.
- Increase transparency around **frontier AI risks and safety practices**.
- Develop international frameworks for **responsible AI development**.
- Ensure competition does not create incentives to compromise critical safety safeguards.

One Nation, One Time: Making Indian Standard Time the National Reference



Why in News?

- The Centre notified the **Legal Metrology (Indian Standard Time) Rules, 2026** on **27 August 2026**.
- The Rules make **Indian Standard Time (IST)** the **single reference time** for legal, administrative, commercial and official purposes.
- They will come into force **180 days** after publication in the Official Gazette.

Need for 'One Nation, One Time'

- Modern infrastructure depends on **accurate and synchronised timestamps**.
- A common time reference is important for:
  - **Banking and digital payments**
  - **Telecommunications**
  - **Railways and transport**
  - **Power grids**
  - **Government and legal records**
  - **Emergency services**
- Different time sources can lead to **inconsistent timestamps and coordination problems**.

Indian Standard Time (IST)

- **Indian Standard Time (IST)** is based on **Coordinated Universal Time (UTC) + 5:30 hours**.
- It is maintained by the **Council of Scientific and Industrial Research–National Physical Laboratory (CSIR-NPL)**.
- IST is generated using **atomic clocks and satellite links**.
- It is traceable to UTC with an uncertainty of **less than 3 nanoseconds**.

Why Reduce Dependence on Foreign Time Sources?

- Some **Telecom Service Providers (TSPs)** and **Internet Service Providers (ISPs)** have relied on foreign timing sources such as the **Global Positioning System (GPS)**.
- Dependence on external timing systems can create vulnerabilities for **critical infrastructure and national security**.
- The Rules therefore promote the use of **Indian timing sources**, including **NavIC**.

Role of NavIC

- **Navigation with Indian Constellation (NavIC)** is India's indigenous satellite navigation system.
- The **Indian Space Research Organisation (ISRO)** has established traceability to IST through satellite links.
- It enables secure and highly accurate dissemination of Indian Standard Time.
- This helps reduce dependence on foreign satellite-based timing systems.

White Rabbit Technology

- In **July 2026**, the government commissioned a **White Rabbit Technology-based IST Dissemination Demonstration Network** in Bengaluru.
- It enables **high-precision time synchronisation over networks**.
- Potential applications include:
  - **Stock exchanges**
  - **Digital banking**
  - **Telecommunications**
  - **Power grids**

Institutional Framework

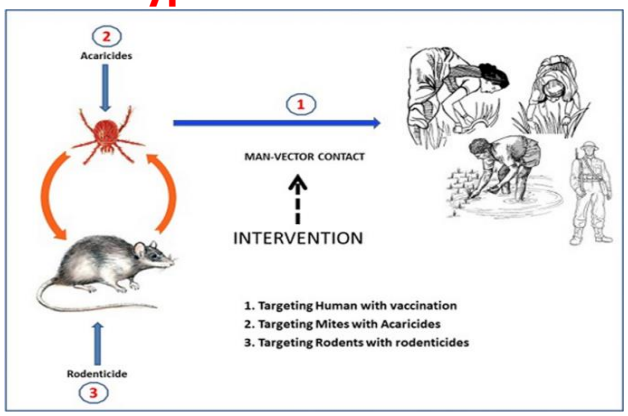
- The initiative operates under the **Legal Metrology Act, 2009**.

- An inter-ministerial committee was constituted to develop the framework for nationwide adoption of IST.
- Key institutions include:
    - **Council of Scientific and Industrial Research–National Physical Laboratory (CSIR-NPL)**
    - **Indian Space Research Organisation (ISRO)**
    - **Indian Institute of Technology Kanpur (IIT Kanpur)**
    - **National Informatics Centre (NIC)**
    - **Indian Computer Emergency Response Team (CERT-In)**
    - **Securities and Exchange Board of India (SEBI)**

Significance

- **Digital sovereignty:** Reduces dependence on foreign timing systems.
- **Critical infrastructure:** Improves synchronisation of power, telecom and transport networks.
- **Financial security:** Enables reliable timestamps for financial transactions.
- **Cybersecurity:** Strengthens the reliability of digital records.
- **Technological self-reliance:** Develops indigenous precision-timing capabilities.

Scrub Typhus



The death of an **Anna University student** at Government Kilpauk Medical College Hospital (KMCH) on September 18, 2026, due to scrub typhus has once again brought attention to this bacterial infection. University authorities have started screening students for **scrub typhus**, along with **dengue and leptospirosis**.

What is Scrub Typhus?

Scrub typhus is a **bacterial infection** caused by the bacterium *Orientia tsutsugamushi*. It is spread by the bite of infected **larval mites or chiggers**.

Importantly, scrub typhus is **not a mosquito-borne disease**.

- It is a major public health burden in **South and Southeast Asia**.
- A 2021 systematic review described scrub typhus as a **grossly under-recognised public health problem in India**.
- Scrub typhus accounted for **25.3%** among acute undifferentiated febrile illness (AUFI) studies.
- Community seroprevalence was reported at **34.2%**.
- The disease can cause severe morbidity and a large number of deaths.

A **2025 multi-centre study** involving 587 children with acute encephalitis syndrome (AES) from **Karnataka, Andhra Pradesh and Tamil Nadu** found scrub typhus to be the most common infectious cause of AES in southern India.

What are the Symptoms?

Symptoms usually begin within **10 days of infection**.

The United States **Centre for Disease Control and Prevention (CDC)** lists the following symptoms:

- **Fever and chills**
- **Headache**
- **Body aches and muscle pain**
- A dark, scab-like region called an **eschar** at the site of the chigger bite
- Mental changes ranging from **confusion to coma**
- **Enlarged lymph nodes**
- **Rash**

Severe Complications

Timely treatment is important because untreated scrub typhus can lead to severe illness.

Possible complications include:

- **Acute respiratory distress syndrome (ARDS)**
- **Shock**
- **Meningitis**
- **Kidney failure**

These complications can be fatal.

In India, scrub typhus has a high mortality rate, primarily due to **late diagnosis and treatment**.

How is Scrub Typhus Diagnosed?

Diagnosis can often be delayed because the symptoms of scrub typhus are common to several other diseases.

A blood test can help confirm the diagnosis.

The tests mentioned are:

- **IgM ELISA**
- **PCR**

How is Scrub Typhus Treated?

Scrub typhus should be treated with antibiotics. The antibiotics mentioned are:

- **Doxycycline**
- **Azithromycin**

Treatment is effective when it is started in time. A trial conducted across **seven centres in India**, published in 2023, compared combination therapy with treatment using either doxycycline or azithromycin alone.

The trial found that patients receiving **doxycycline and azithromycin together** had faster resolution of complications than those receiving either drug alone.

The combination-therapy group also had lower frequencies of:

- **Respiratory complications**
- **Renal complications**
- **Hepatic complications**
- **Central nervous system complications**

How Can Scrub Typhus be Prevented?

- There is currently **no vaccine** for scrub typhus.
- The infection is also **not contagious**.

Where are Chiggers Found?

Chiggers live in areas with:

- **Grass**
- **Thick vegetation**
- **Agricultural fields**
- **Plant litter**
- **Bare soil**

They are found across rural areas of Asia and usually feed on small mammals such as:

- **Rats**
- **Shrews**

Preventive Measures

Protection from chigger bites can help reduce the risk of infection.

- Wear **protective clothing**.
- Use **covered footwear**.
- Use **insect repellent**.
- Keep surroundings **clean and well maintained**.
- Reduce conditions that provide suitable **mite habitats**.

Importance of Early Diagnosis

Early diagnosis and prompt treatment can significantly reduce complications and mortality.

The 2021 review highlighted the need for:

- **Early diagnosis**
- **Prompt treatment**
- Good **surveillance**
- Appropriate **control measures**

Conclusion

Scrub typhus is a **bacterial infection caused by *Orientia tsutsugamushi*** and spread through the bite of infected chiggers. It is not a mosquito-borne or contagious disease. Symptoms generally begin within **10 days** and may include fever, headache, muscle pain, rash and an **eschar**. Delayed treatment can lead to serious complications such as ARDS, shock, meningitis and kidney failure. **IgM ELISA and PCR** can help confirm the infection, while **doxycycline and azithromycin** are used for treatment. Since there is currently no vaccine, preventing chigger bites, maintaining clean surroundings and ensuring **early diagnosis and prompt treatment** remain important.

❐❐❐

Ecology & Environment

Rotenone Used to Control Invasive Northern Pike in Alaska



Why in News?

- Biologists in **Southcentral Alaska** carried out a large-scale restoration exercise to remove an invasive population of **Northern Pike** from a lake.
- The entire lake was treated with **rotenone**, a plant-derived chemical used to eliminate unwanted fish.
- The action was aimed at protecting **native fish species** from predation by the invasive Northern Pike.

About Rotenone:

- **Rotenone** is a naturally occurring chemical compound obtained from the roots of tropical plants belonging to the genera **Derris, Lonchocarpus and Tephrosia**.
- It is mainly used as an **insecticide and pesticide**.
- It has been used in **fisheries management** for several decades to remove unwanted fish from lakes and streams.
- At carefully controlled concentrations, rotenone interferes with the ability of fish to **use oxygen at their gills**, resulting in their death.
- Its effect is mainly targeted at **fish**, with other aquatic organisms generally being less affected when the chemical is properly applied.
- Rotenone **breaks down relatively quickly** when exposed to sunlight and warm water.
- It is commercially available in two common forms:
    - **Wettable powder**
    - **Liquid formulation**

Northern Pike :

- **Scientific Name:** *Esox lucius*
- **Family: Esocidae**
- It is a **freshwater predatory fish** belonging to the pike family.
- Northern Pike are naturally distributed across the **circumpolar regions**.
- Their native range includes:
    - Northern parts of the **USA**
    - **Alaska**
    - **Canada**
    - **Europe**
    - **Asia**
- They inhabit **rivers and lakes** and can also occur in the **brackish waters of the Baltic Sea**.

Why is Northern Pike Invasive in Some Regions?

- Outside its natural range, Northern Pike can become an **invasive species**.
- It is a strong predator and can consume native fish such as **trout, perch and bass**.
- Its presence in non-native habitats can therefore disturb **local aquatic ecosystems**.

Key Features :

- Has a **long, slender body** that helps it remain hidden among aquatic vegetation, logs and rocks.
- Uses an **ambush hunting strategy** to attack prey.
- Has a **long head and flattened snout**.
- Possesses a large mouth equipped with numerous **sharp teeth**.
- Generally has a **brownish-green upper body** with whitish, bar-like markings.
- Fins commonly show **red and brown streaks with darker spots**.
- The underside is generally **cream or white**.

Conservation Status

- **IUCN Red List: Least Concern**.

Attunli Hydroelectric Project Gets Environmental Clearance Recommendation



Why in News?

- The **Expert Appraisal Committee (EAC)** for River Valley and Hydroelectric Projects has recommended **environmental clearance** for the **680 MW Attunli Hydroelectric Project**.

- The project is being developed by **SJVN Limited** in **Dibang Valley district, Arunachal Pradesh**.

About Attunli Hydroelectric Project

- **Capacity: 680 MW**
- **Location: Dibang Valley, Arunachal Pradesh**
- **Type: Run-of-river hydropower project**
- The project will be constructed across the **Tangon (Talo) River**.
- It will include an **85-metre-high concrete gravity dam**.
- Major infrastructure includes:
    - **7.955 km head race tunnel**
    - **93-metre surge shaft**
    - **Twin pressure shafts**
- The project will have an **underground powerhouse**.
- The powerhouse will contain **four Francis turbines**, each having a capacity of **170 MW**.
- A **tailrace tunnel** will carry the discharged water back into the river.
- **Expected annual generation:** Around **2,728 million units (MU)** of electricity.

Project Background

- The project was originally proposed by **Attunli Hydro Electric Power Company Limited**.
- The company was a joint venture between:
    - **Jindal Power**
    - **Hydro Power Development Corporation of Arunachal Pradesh**
- The project was later allotted to **Satluj Jal Vidyut Nigam (SJVN)**.

About SJVN

- **SJVN Limited** is a joint venture between the **Government of India** and the **Government of Himachal Pradesh**.
- It is involved in the development and operation of **hydropower and other renewable energy projects**.

New Scorpion Species Liocheles gracilipalpus Discovered in Jammu and Kashmir



Why in News?

- Researchers have identified and formally described a **new species of scorpion**, *Liocheles gracilipalpus*, from the **Shivalik Hills of Reasi district, Jammu and Kashmir**.
- The discovery adds a new species to India's recorded **scorpion diversity**.

About Liocheles gracilipalpus

- It belongs to the **Hormuridae family** of scorpions.
- **Location:** Shivalik Hills, **Reasi district, Jammu and Kashmir**
- **Elevation:** Discovered at around **1,655 metres above sea level**.
- The species name reflects its distinctive body structure:
    - **Gracilis** means **slender**.
    - **Palpus** refers to the **pedipalp**, the pincer-like appendage of a scorpion.
- It is characterised by **unusually long and slender pedipalps**.
- The species is relatively large compared with other members of its genus.
- **Body length:** Approximately **34.8–43.2 mm**.
- Its body colour varies from **greyish brown to dark brown**.
- The **legs and tail** are comparatively lighter in colour.

Habitat and Distribution

- Specimens were found **beneath flat rocks** near a **man-made wall** at the type locality.
- The species appeared to be **relatively abundant** in the area.

- It was recorded across an elevation range from **1,655 metres to Reasi town**, which lies at around **600 metres**.
- The scorpion was not limited to untouched natural habitats.
- Researchers also found individuals in **human-inhabited areas**, including **wood-storage sheds**.

Distinctive Features

- Shows clear **sexual dimorphism**, with noticeable differences between males and females.
- The differences are particularly visible in the **structure of the pedipalps**.
- Its **long and slender pedipalps** are an important feature used in identifying the species.

Other Liocheles Species Recorded in India

- Before the discovery of *L. gracilipalpus*, the following species of the genus *Liocheles* had been recorded from India:
    - *Liocheles australasiae*
    - *Liocheles nigripes*
    - *Liocheles schalleri*

Sharp-Tailed Sandpiper Spotted in Gurgaon



Why in News?

- A **rare Sharp-Tailed Sandpiper** was recently sighted in **Chandu village, Gurgaon, Haryana**.
- The sighting is significant as the species is listed as **Vulnerable** on the **IUCN Red List**.

About Sharp-Tailed Sandpiper

- **Scientific Name:** *Calidris acuminata*
- It is a **small to medium-sized wader bird**.
- It is recognised by its distinctive **cap and sharply marked plumage**.

Appearance

- **Breeding adults:**
    - Have a prominent **rich chestnut-coloured cap**.
    - Possess a noticeable **white eye-ring**.
    - Underparts are covered with **chevrons and spots**.
- **Non-breeding adults:**
    - Generally appear **duller and greyish-brown**.
    - Have a less prominent **brownish cap**.

Habitat

- Commonly occurs in:
    - **Freshwater marshes**
    - **Coastal mudflats**
    - Wetland areas, including some **inland locations**
- It may also forage in **agricultural pastures** and shallow water around wetlands.

Breeding and Migration

- Breeds in **northern Siberia**.
- Its breeding range extends from the **Lena River Delta** near the eastern Arctic Ocean towards the **Kolyma region**.
- During migration, it travels southwards through **East Asia**.
- Its major **non-breeding grounds** are in **Australia and New Zealand**.

Diet

- Feeds on a variety of food items, including:
    - **Seeds**
    - **Worms**
    - **Molluscs**
    - **Crustaceans**
    - **Insects**
- It often becomes more active in feeding after **rainfall**.

Major Threats

- **Pollution**
- **Changes in sediment flow**
- **Sea-level rise**
- These factors can reduce the availability and quality of its **wetland and coastal habitats**.

Conservation Status

- **IUCN Red List: Vulnerable**

4th Indo-German Environment Forum Held in New Delhi



Why in News?

- India and **Germany** are hosting the **4th Indo-German Environment Forum** in **New Delhi**.
- The theme of the forum is **"Together for More Resilience"**.
- The forum focuses on strengthening cooperation between the two countries on **environmental protection, climate resilience and sustainable development**.

About Germany:

- **Location: Central Europe**
- Germany shares land borders with **nine countries**:
    - **Denmark** – North
    - **Poland and Czech Republic** – East
    - **Austria and Switzerland** – South
    - **France, Luxembourg, Belgium and Netherlands** – West
- **Maritime boundaries:**
    - **North Sea** – Northwest
    - **Baltic Sea** – Northeast
- **Capital: Berlin**

Geographical Features of Germany

Climate :

- Germany has a generally **temperate climate**.
- The climate is influenced by both **maritime and continental conditions**.

Major Mountain Ranges

- **Alps**
- **Bavarian Highlands**

Major Rivers

- **Rhine**
- **Elbe**
- **Danube**

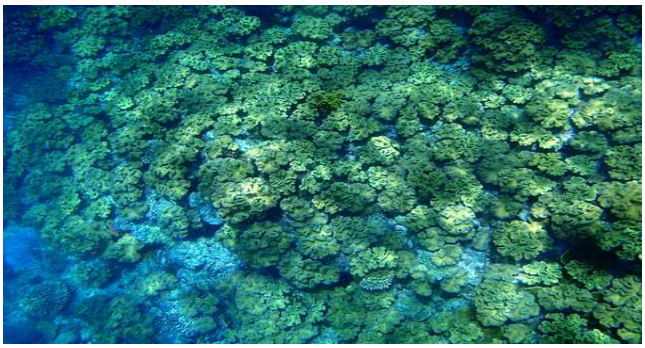
Important Lake

- **Lake Constance** is the largest freshwater lake associated with Germany.
- It is shared by **Germany, Austria and Switzerland**.

Natural Resources

- Germany has deposits of several important mineral and energy resources, including:
    - Lignite
    - Coal
    - Natural gas
    - Iron ore
    - Copper
    - Nickel
    - Potash
    - Uranium

Coral Bleaching Events Becoming More Frequent



Why in News?

- The **7th Status of Coral Reefs of the World** report, released by the **Global Coral Reef Monitoring Network (GCRMN)**, has highlighted growing stress on coral reef ecosystems.
- **Coral bleaching events** are occurring more frequently, while the time available for reefs to **recover between bleaching events has reduced significantly**.

About Coral Bleaching

- **Coral bleaching** is a stress response in which corals lose the microscopic algae living within their tissues.
- It can occur due to changes in:
    - **Ocean temperature**
    - **Water quality and pollution**

- **Ocean acidity**
- Other environmental stresses

- Bleached corals appear **pale or white** because their transparent tissues expose the white **calcium carbonate skeleton** underneath.

Process of Coral Bleaching

- Corals live in a **symbiotic relationship** with microscopic algae called **zooxanthellae**.
- These algae provide food to corals through **photosynthesis** and also give them their characteristic colours.
- Under stressful conditions, zooxanthellae begin producing harmful **reactive oxygen species (ROS)**.
- To protect themselves from this stress, corals **expel the zooxanthellae** from their tissues.
- The loss of these algae causes the coral to **turn white**, resulting in bleaching.
- It also disrupts the important **symbiotic relationship** that supports coral growth and survival.
- If stressful conditions continue for a long period, severely bleached corals may **die**.

Major Causes of Coral Bleaching

1. Rising Ocean Temperature

- **Increasing sea-surface temperatures**, largely linked to climate change, are the major driver of widespread coral bleaching.
- Even a relatively small rise in water temperature above the normal range can stress corals.

2. Runoff and Pollution

- Heavy rainfall and storm events can alter the conditions of coastal waters.
- **Land-based runoff** may carry pollutants and sediments into coastal areas.
- Such changes can increase stress on **near-shore coral reefs**.

3. Excessive Sunlight

- High temperatures combined with strong **solar radiation** can increase bleaching.
- This effect is particularly significant for **shallow-water corals**.

4. Extremely Low Tides

- During exceptionally low tides, shallow corals may become **exposed to air**.
- Direct exposure to atmospheric conditions can cause severe stress and lead to bleaching.

New Deep-Sea Skate Species Discovered in Arabian Sea



Why in News?

- Scientists from the **Zoological Survey of India (ZSI)**, along with researchers from **ICAR-Central Marine Fisheries Research Institute (CMFRI)** and international experts, have identified a **new species of deep-sea skate**.
- The species was discovered in the **southeastern Arabian Sea**, off India's southwestern coast.
- It has been named ***Dipturus dhritiae*** and is commonly known as the **Arabian skate**.

About Dipturus dhritiae

- **Common Name:** Arabian skate
- **Scientific Name:** *Dipturus dhritiae*
- It is a **new species of deep-sea skate**.
- Skates are **flat-bodied marine fish related to sharks**.
- They generally live on or near the **seafloor**, including the dark and deep parts of the ocean.
- The newly identified species was found:
  - Off the **Kerala coast**
  - In the **Wadge Bank region**
- **Depth range:** Around **400–600 metres**
- **Maximum length:** Approximately **1.3 metres**

Distinctive Features

- One of its most notable characteristics is the presence of **five rows of thorn-like structures along the tail**.
- Its body is adapted to life in the **deep-sea environment**.

Why are Deep-Sea Skates Vulnerable?

- Deep-sea skates are particularly sensitive to **overfishing**.
- They generally:
  - **Grow and reproduce slowly**
  - Produce **relatively few offspring**

- Require a **long period to recover** after population decline

- These biological characteristics make them vulnerable to **rapid depletion from fishing pressure**.

Name and Significance

- The species name ***dhritiae*** honours **Dr. Dhriti Banerjee**.
- Dr. Dhriti Banerjee is the **first woman Director of the Zoological Survey of India (ZSI)**.
- The discovery adds to the knowledge of **marine biodiversity in the Arabian Sea**, particularly its deep-sea ecosystems.

Mission Rangeen Machhli 2031



Why in News?

- Vice President **C. P. Radhakrishnan** recently launched the **'Mission Rangeen Machhli 2031' Strategic Action Plan for Ornamental Fisheries Development**.
- The plan was released during a **Fisheries Outreach Programme in Agatti, Lakshadweep**.
- It aims to bring a **scientific, organised and standardised approach** to India's ornamental fisheries sector.

About Mission Rangeen Machhli 2031

- It is a **Strategic Action Plan** for the development of India's **ornamental fisheries industry**.
- The initiative comes under the **Department of Fisheries**, Ministry of Fisheries, Animal Husbandry & Dairying.
- It seeks to introduce **uniform operating procedures and management standards** for the ornamental fish sector across India.
- The plan covers the **entire ornamental fish supply chain**, including:
  - **Breeding**
  - **Hatchery operations**
  - **Production**
  - **Aquarium trade**
  - **Domestic sale**
  - **Exports**

Major Components

- **Breeding and Production**
  - Standard procedures for breeding, hatchery management and production systems.
- **Quarantine and Fish Health**
  - Guidelines for **quarantine, health screening and disease control**.
- **Quality and Biosecurity**
  - Common standards for **quality assurance and biosecurity**.
- **Certification and Traceability**
  - Systems to track ornamental fish from the **farm to the final market**.
- **Handling and Transportation**
  - Guidelines for the safe **handling, transport and trade** of ornamental fish species.

Expected Benefits

- Develop **skills and technical capacity** among fish farmers and traders.
- Improve the **quality and consistency** of ornamental fish production.
- Help Indian businesses obtain **certification for international markets**.
- Strengthen **biosecurity and disease management**.
- Promote an **organised and globally competitive ornamental fisheries sector**.
- Support greater participation of farmers and entrepreneurs in **high-value fisheries activities**.

Focus on Lakshadweep

- **Lakshadweep** has been identified as a dedicated **seaweed cluster** for cultivation and processing.
- Its marine resources provide significant potential for **ornamental fish farming and other high-value fisheries activities**.

- The marine area associated with Lakshadweep accounts for around **17% of India's total oceanic Exclusive Economic Zone (EEZ)**.

Male Mahadeshwara Hills Wildlife Sanctuary



Why in News?

- Recent official data from the **Forest Department** indicates that **Male Mahadeshwara Hills Wildlife Sanctuary** accounted for nearly **half of the poaching and illegal arms cases** registered over the past **16 years**.
- The data highlights the importance of strengthening **wildlife protection and anti-poaching measures** in the sanctuary.

About Male Mahadeshwara Hills Wildlife Sanctuary

- **Location: Chamarajanagara district, Karnataka**
- It lies at the meeting point of the **Western Ghats and Eastern Ghats**.
- **Declared Wildlife Sanctuary: 2013**
- The sanctuary is connected with several important protected areas:
    - **Biligiri Rangaswamy Temple (BRT) Tiger Reserve**
    - **Sathyamangalam Tiger Reserve**
    - **Cauvery Wildlife Sanctuary**

Geographical Features

- The **Kaveri River** forms its boundary towards the **northeast**.
- The **Palar River** lies towards its **south**.
- The region consists of varied terrain and forests occurring across different elevations.

Vegetation

- **Dry deciduous forests** form the dominant vegetation.
- These forests gradually change into **scrub forests** towards the fringes.
- Other forest types found in the sanctuary include:
    - **Moist deciduous forests**
    - **Semi-evergreen forests**
    - **Evergreen forests**
    - **Shola forests**

Important Flora

- *Anogeissus latifolia*
- *Boswellia serrata*
- *Hardwickia binata*
- *Chloroxylon swietenia*

Fauna

- The sanctuary supports a diverse range of wildlife, including:
    - **Elephants**
    - **Indian Gaur (Bison)**
    - **Tigers**
    - **Dholes (Wild Dogs)**
    - **Leopards**
    - **Foxes**
    - **Sambar**
    - **Spotted Deer**
    - Numerous **bird species**

Religious Significance

- The sanctuary is home to the famous **Male Mahadeshwara Temple**.
- The temple is dedicated to **Lord Shiva**, worshipped locally as **Mahadeshwara**.
- The religious importance of the site attracts a large number of **pilgrims** to the region.

Myristica Swamps on the Brink of Extinction



Why in News?

- A recent study has highlighted that the unique **Myristica Swamps** are facing a serious risk of extinction.
- These freshwater swamp ecosystems are important for **water regulation, carbon storage and biodiversity**.

About Myristica Swamps

- Myristica Swamps are **freshwater swamp forests** dominated by evergreen trees belonging to the **Myristicaceae family**.
- They are often described as **"living fossils"** because of the primitive characteristics of Myristica plants.
- The forests are characterised by trees with **large protruding roots** emerging from permanently waterlogged soil.
- The soil remains **inundated throughout the year**, creating a unique freshwater ecosystem.

Geographical Distribution

- In India, Myristica Swamps are mainly found in the **Western Ghats**.
- Smaller areas are also present in:
    - **Andaman and Nicobar Islands**
    - **Meghalaya**
- Globally, freshwater swamp forests occupy **less than 2.1% of the Earth's surface**.

Climatic and Environmental Conditions

- These ecosystems occur mainly in **tropical regions**.
- They generally develop on **fertile alluvial soils** that remain waterlogged.
- The combination of **high rainfall, freshwater and permanently saturated soil** supports their distinctive vegetation.

Evolutionary Significance

- The genetic diversity associated with Myristica Swamps has a history going back around **500 million years**.
- Their primitive plant characteristics make them important from an **evolutionary and ecological perspective**.

Ecological Importance

- **Flood Regulation:** Help absorb and regulate excess water, reducing flood risks.
- **Groundwater Recharge:** Support the replenishment of **groundwater resources**.
- **Freshwater Flow:** Help maintain a **perennial supply of freshwater**.
- **Carbon Sequestration:** Their ability to **store carbon** is higher than that of many non-swamp forests.
- **Biodiversity:** Provide habitat for a wide range of **vertebrate and invertebrate species**.

Key Concern

- The increasing risk to Myristica Swamps is significant because the loss of these ecosystems could affect **biodiversity, freshwater availability, flood regulation and carbon storage**.

Growing Demand for Polychaete Worms Raises Ecological Concerns



Why in News?

- The rapid growth of the **shrimp aquaculture industry** has increased the demand for **wild polychaete worms**.
- Large-scale harvesting of these worms has raised concerns about their impact on **marine ecosystems**.

About Polychaete Worms

- Polychaetes are a diverse group of **marine annelid worms**.
- They are commonly known as **bristle worms**.
- They are among the most diverse groups of **marine invertebrates**.
- The term **Polychaeta** means **"having much hair"**, referring to the numerous bristles present on their bodies.

Habitat

- Polychaete worms are found across a wide range of **marine environments**, including:
    - **Estuaries**
    - **Mangroves**
    - **Sandy shores**
    - **Coral reefs**
    - **Seagrass beds**

- **Continental shelf**
- **Deep-sea areas**

Key Characteristics

- They possess **parapodia**, small leg-like structures used for:
  - Crawling
  - Swimming
  - Burrowing
- Each body segment generally has a pair of parapodia carrying **chaetae (bristles)**.
- Their body contains a **circular muscle layer** surrounding the **coelom**, a fluid-filled body cavity.
- Many species have **tentacles** that assist in feeding.
- Some species possess **feather-like branchial radioles**, which help in **feeding and respiration**.

Reproduction

- Polychaetes show different reproductive strategies.
- Some species reproduce **sexually**, while others can reproduce **asexually**.
- Certain species are **hermaphrodites**, possessing both male and female reproductive organs.

Ecological Importance

- Polychaetes are important **detritivores**, feeding on dead and decaying organic matter.
- They contribute significantly to the **breakdown and recycling of organic material**.
- Their activities also help in **oxygen transport and redistribution** within marine sediments.
- Their wide ecological adaptability and sensitivity to environmental changes make them useful **bioindicators of ecosystem health**.

Connection with Shrimp Aquaculture

- Polychaete worms are increasingly harvested from the wild to meet the needs of the **shrimp farming industry**.
- Excessive harvesting can potentially affect the **ecological balance of coastal and marine habitats** where these worms play important roles.

Fulvous Whistling Ducks Spotted in Kerala



Why in News?

- A flock of more than **30 Fulvous Whistling Ducks** has recently been sighted at the **Venjali wetlands in Malappuram district, Kerala**.
- The species is considered **rarely recorded in Kerala**.

About Fulvous Whistling Duck

- **Common Names:** Fulvous Whistling Duck, Fulvous Tree Duck
- **Scientific Name:** *Dendrocygna bicolor*
- It is a **large, goose-like waterbird**.
- It is characterised by its **long neck and long legs**.

Habitat and Distribution

- It is among the **widely distributed waterfowl species** across the world.
- It is mainly found in **tropical and subtropical regions**, with populations also occurring in temperate parts of:
  - **Americas**
  - **Africa**
  - **Asia**
- In India, it is more commonly recorded in the **wetlands of Assam and other northeastern States**.
- It prefers **shallow wetlands** with abundant grass and other vegetation.

Preferred Habitats

- **Freshwater lakes**
- **Seasonal freshwater pools**
- **Slow-flowing streams**
- **Marshes**

- **Swamps**
- **Flooded grasslands**
- **Wet rice cultivation areas**
- Generally prefers **open and relatively flat landscapes**.

Physical Features

- **Length:** Around **45–55 cm**
- **Weight:** Approximately **500–1,000 grams**
- **Sex:** Males are generally **slightly larger** than females.
- **Plumage:** Mainly **reddish-brown**.
- **Upper tail-coverts: Whitish**.
- **Flanks:** Marked with **white stripes**.
- During flight, a distinctive **crescent-shaped white band** can be seen across the black tail.
- **Legs:** Long with a **bluish-grey colouration**.
- **Bill:** Grey.

Behaviour

- The species is known for its characteristic vocalisations.
- It produces **squealing calls while taking off**.
- During flight, it produces **loud and shrill whistling sounds**.

Conservation Status

- **IUCN Red List: Least Concern (LC)**.

New Caecilian Species Discovered in Maharashtra



Why in News?

- Scientists have discovered a **new species of legless, worm-like amphibian** in a rural village in **Maharashtra**.
- The species has been named ***Gegeneophis chandgadi***.
- The discovery highlights the **northern Western Ghats** as an important region for caecilian diversity.

About Gegeneophis chandgadi

- It is a newly identified **caecilian species** from Maharashtra.
- The species is **legless** and has a **worm-like body**.
- Its name **"chandgadi"** refers to the local **Chandgadi language**.
- Chandgadi is a distinct **Marathi dialect** spoken by people in the region where the species was discovered.
- The name therefore reflects the **local cultural connection** of the discovery.

Distribution

- The **northern Western Ghats** are considered a hotspot for these **elusive amphibians**.
- Caecilians are difficult to observe because they spend most of their lives **underground**.

Key Features

- Has a **slender, flesh-coloured body**.
- Its body is covered with ring-like structures known as **annuli**.
- It has **primary rings** along the entire length of its body.
- **Secondary rings** are mainly concentrated on the **rear half** of the body.
- Like other caecilians, it has **no limbs**.

What are Caecilians?

- Caecilians are **tropical amphibians** that resemble large worms or smooth snakes.
- They are **legless** and have elongated bodies.
- Their shiny skin contains ring-like folds called **annuli**.
- Most species are **burrowing animals** and live in underground tunnels.
- Their **hard, thick and pointed skulls** help them dig through soft soil.

Habitat and Distribution

- Caecilians are mainly found in **moist tropical and subtropical regions**.
- Their distribution includes:
  - **South and Central America**
  - **South and Southeast Asia**
  - **Sub-Saharan Africa**
- Almost all caecilians are **terrestrial**.
- They are rarely seen because they spend most of their lives **beneath the ground**.

Sasthamcotta Lake



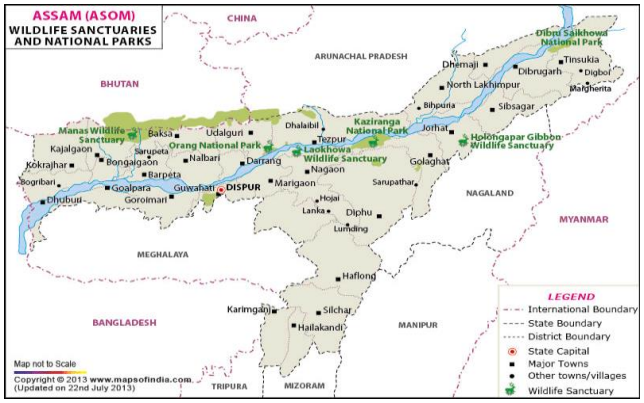
Why in News?

A young newly-wed couple was recently found dead in **Sasthamcotta Lake** near the Ambalakkadavu area.

About Sasthamcotta Lake

- **Sasthamcotta Lake**, also called **Sasthamkotta Lake**, is the **largest freshwater lake in Kerala**.
- It is located in **Kollam district**.
- The lake is named after the ancient **Sastha Temple** located on its bank.
- It is surrounded by hills on all sides except the south, where a **bund** separates the lake from nearby rice fields.
- The present area of the lake is about **375 hectares**.
- Its water source is **underground springs**.
- The lake supports **fishing**, **27 species of freshwater fish**, and **two genera of prawns**.
- The purity of its water is associated with **Cavaborus larvae**, which consume bacteria present in the water.
- The surrounding forests and wetlands provide habitat for birds such as **egrets, herons and kingfishers**.
- It has been designated a **Ramsar Site** since **November 2002**.

Bura Chapori Wildlife Sanctuary



Why in News?

A man was killed after being attacked by a **wild buffalo** while working in a jute field on a river island near **Bura Chapori Wildlife Sanctuary** in Assam's Nagaon district.

About Bura Chapori Wildlife Sanctuary

- It is located in **Assam** and covers about **44.06 sq. km**.
- It lies on the **south bank of the Brahmaputra River**.
- It is part of the **Laokhowa-Burachapori ecosystem**.
- It is located between:
  - **Kaziranga National Park** to the east
  - **Orang National Park** to the west
  - **Laokhowa Wildlife Sanctuary** to the south
- **Climate:** Subtropical monsoon climate.
- **Vegetation:** It consists of **wet alluvial grasslands, riparian forests and semi-evergreen forests**, along with wetlands and river systems.
- The grasslands contain several **medicinal herbs and plants**.
- Important vegetation includes **Hollang, Mekai, Dhuna, Udiyam, Nahar, Samkothal and Bheer**.
- **Fauna:** The sanctuary is home to **Great Indian one-horned rhinoceros, tiger, leopard, wild buffalo, hog deer, wild pig and elephants**.
- It also supports birds such as the **Bengal Florican, Black-necked Stork, Mallard, Open-billed Stork, Teal and Whistling Duck**.

Bhoramdev Wildlife Sanctuary



Wildlife monitoring at **Bhoramdev Wildlife Sanctuary** in Chhattisgarh is set to use **"bird hearing" technology** to detect and track birds and other wildlife through their sounds.

Why in News?

The Chhattisgarh Forest Department is preparing to introduce bird-hearing technology to improve wildlife and bird monitoring in the sanctuary.

Key Facts

- **Location:** Kawardha district, Chhattisgarh.
- It forms part of the **Maikal Range of the Satpura Hills**.
- It lies within the **Kanha-Achanakmar Corridor**, connecting **Kanha National Park** in Madhya Pradesh with **Achanakmar Wildlife Sanctuary** in Chhattisgarh.
- **Area:** About **352 sq. km**.
- It is named after the nearby **Bhoramdeo Temple**, dedicated to Lord Shiva and often called the **"Khajuraho of Chhattisgarh."**
- The sanctuary has **undulating hills, dense forests and streams**.
- The **Sakari River** flows through the sanctuary and provides drinking water for wildlife.
- **Vegetation:** Tropical moist and dry deciduous forests, including **sal, saaj and tendu**.
- **Fauna: Bengal tiger, leopard, sloth bear, sambar, gaur, wild boar and monitor lizard**.
- It supports **more than 100 bird species**.
- The surrounding region is inhabited by tribal communities such as the **Baiga, Gond and Kanwar**.

New Lichen Species Discovered in Mathikettan Shola National Park



Researchers have discovered a new lichen species, **Buellia maharajensis**, in **Mathikettan Shola National Park, Kerala**. The discovery adds to the biodiversity of the Western Ghats and highlights the ecological importance of the region.

Why in News?

Buellia maharajensis is the **fourth lichen species discovered in Mathikettan Shola National Park**.

- It is a **saxicolous lichen**, meaning it grows directly on **rock surfaces**.
- It was recorded at an elevation of about **1,351 metres**.
- **Lichens** are a symbiotic association between a **fungus and an alga or cyanobacterium**.
- The **algae or cyanobacteria** produce carbohydrates through photosynthesis, while the **fungus provides water, protection and shelter**.
- The body of a lichen is called a **thallus**, and it is attached to surfaces by hair-like structures called **rhizines**.
- Lichens occur worldwide and can grow on **tree bark, exposed rocks and biological soil crusts**.
- They can survive under a wide range of environmental conditions.

Wildlife Crime Control Bureau (WCCB)



Why in News?

The **Ministry of Environment, Forest and Climate Change (MoEF&CC)** recently constituted a **4-member inquiry team from the Wildlife Crime Control Bureau (WCCB)** to investigate the possible **international organised wildlife crime linkage** in the mysterious appearance of an orangutan in **Balasore, Odisha**.

About WCCB

- **WCCB** is a **statutory body** established to combat **organised wildlife crime** in India.
- It was constituted under **Section 38Y of the Wild Life (Protection) Act, 1972**.
- It became operational in **2008**.

- It functions under the **Ministry of Environment, Forest and Climate Change (MoEF&CC)**.
- **Headquarters:** New Delhi.
- It has **five regional offices** at **Delhi, Kolkata, Mumbai, Chennai and Bhopal**.
- It is a **multidisciplinary body** involving officials from **police, forest, customs and intelligence/enforcement agencies**.

Functions

- Collects and shares intelligence on **organised wildlife crime**.
- Maintains a **centralised wildlife crime database**.
- Coordinates enforcement action among **Central and State agencies**.
- Assists in implementing India's obligations under **international wildlife conventions**.
- Cooperates with **foreign countries and international organisations** to control cross-border wildlife crime.
- Supports **scientific investigation, capacity building and prosecution** of wildlife offences.
- Advises the Government on wildlife crimes having **national and international implications**.

International Cooperation

- WCCB assists in enforcing **CITES**, to which India has been a party since **1976**.
- It maintains links with the **INTERPOL Environmental Crime Programme** and **World Customs Organization (WCO)** to track **cross-border wildlife trafficking**.
- It has developed an **online Wildlife Crime Database Management System** to analyse crime trends and support preventive action.

South Asia Wildlife Enforcement Network (SAWEN)

SAWEN
South Asia Wildlife Enforcement Network

Member countries of **SAWEN** recently adopted the **Kathmandu Declaration** to improve regional cooperation against **illegal wildlife trade and transnational organised wildlife crime**.

About SAWEN

- **SAWEN** is an **intergovernmental law-enforcement support network** of South Asian countries.
- It was officially launched in **2011** at the second meeting of the **South Asia Experts Group on Illegal Wildlife Trade** in **Paro, Bhutan**.
- **Secretariat:** Kathmandu, Nepal.
- **Members:** 8 countries:
    - **Afghanistan**
    - **Bangladesh**
    - **Bhutan**
    - **India**
    - **Maldives**
    - **Nepal**
    - **Pakistan**
    - **Sri Lanka**

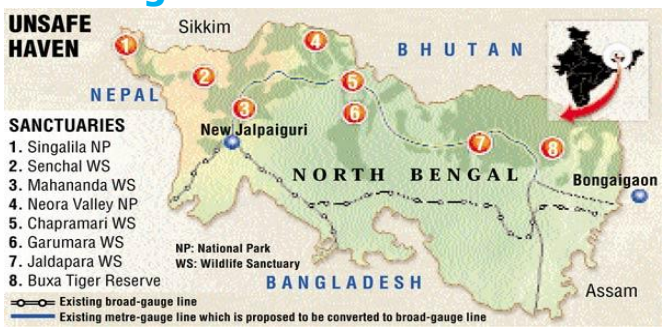
Objectives

- Promote **cooperation and coordination** among member countries to combat wildlife crime.
- Work towards **harmonising and standardising laws and policies** related to wildlife conservation and enforcement.
- Monitor and document trends in **poaching and illegal wildlife trade** across the region.
- Improve **information sharing, research, training and technical capacity** of enforcement agencies.
- Encourage countries to develop and implement **National Action Plans** against wildlife crime.
- Strengthen cooperation against **cross-border wildlife trafficking and organised crime**.

Governance Structure

- **General Assembly:** The apex body, comprising ministers or senior government representatives from member countries.
- **Executive Committee:** Consists of the principal focal persons nominated by member countries.
- **Secretariat:** Handles the network's **day-to-day activities** and is headed by the **Secretary General**.

Buxa Tiger Reserve



The **West Bengal government** plans to relocate a **tigress from Bihar** to **Buxa Tiger Reserve** in north Bengal to support the recovery of its **tiger population**.

About Buxa Tiger Reserve

- **Location: Alipurduar district, West Bengal**.
- It lies within the **Indo-Malayan biodiversity region**.
- The reserve shares its **northern boundary with Bhutan**.
- Its eastern boundary meets **Assam**, with the **Sankosh River** forming the interstate boundary.
- **Elevation:** Around **60 m in the plains** to nearly **1,750 m** in the Himalayan foothills.
- It brings together three major ecological zones:
    - **Terai**
    - **Bhabar**
    - **Sub-Himalayan ecosystems**

Rivers and Vegetation

- Major rivers include **Raidak, Sankosh and Jayanti**, which originate in Bhutan.
- The forests are mainly classified as **moist tropical forests**.
- The reserve has rich plant diversity, including around:
    - **450 tree species**
    - **400 herb species**
    - **250 shrub species**
    - **150+ orchid species**

Fauna

Buxa provides habitat for several important species, including:

- **Elephant**
- **Gaur**
- **Sambar**
- **Spotted deer**
- **Barking deer**
- **Hog deer**

The proposed tiger relocation is aimed at strengthening the **breeding population and long-term conservation of tigers** in the reserve.

Kawal Tiger Reserve



A **12-year study (2010–2022)** found that **Kawal Tiger Reserve does not have a permanent tiger population**, highlighting challenges in maintaining a stable tiger population in the reserve.

About Kawal Tiger Reserve

- **Location:** Telangana.
- It forms part of the **southernmost end of the Central Indian Tiger Landscape**.
- It is connected with the **Tadoba-Andhari Tiger Reserve** in Maharashtra and **Indravati Tiger Reserve** in Chhattisgarh.
- **River system:** The reserve forms an important catchment of the **Godavari River** and includes local streams such as **Peddavagu and Kadam**.
- **Habitat:** It contains **forests, grasslands, rivers, streams and water bodies**.
- **Vegetation:** Mainly **Southern Tropical Dry Deciduous Forest**.

Flora

The reserve is dominated by **teak and bamboo**, along with species such as:

- *Anogeissus latifolia*
- *Mitragyna parviflora*
- *Terminalia crenulata*
- *Terminalia arjuna*
- *Boswellia serrata*

Fauna

The reserve supports several species, including:

- **Tiger**
- **Leopard**
- **Nilgai**

- **Chinkara**
- **Blackbuck**
- **Chousingha**
- **Sambar**
- **Spotted deer**
- **Dhole (wild dog)**
- **Wolf**
- **Jackal**
- **Fox**
- **Jungle cat**

New Conger Eel Species – *Ariosoma cmfriense*



Scientists have discovered a **new species of conger eel, *Ariosoma cmfriense***, in the deep waters of the **Arabian Sea**.

Why in News?

Scientists from the **ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi**, discovered the species during research under the **Deep Ocean Mission (DOM)** of the **Ministry of Earth Sciences (MoES)**.

About Ariosoma cmfriense

- It is a newly identified **species of conger eel**.
- It was found off **Kollam, Kerala**, at a depth of around **300 metres**.
- Conger eels are marine fish with a **long, snake-like and scaleless body**.

Distinctive Features

- **Total vertebrae:** About **135**.
- **Lateral-line pores:** Around **127–130**.
- **Preanal length:** Nearly half of the total body length.
- Has **two supraorbital pores**.
- The **dorsal fin** begins slightly ahead of the base of the pectoral fin.
- Has a **plain pectoral fin** and a **dark patch over the operculum**.
- Fine **black speckling below the lateral line** distinguishes it from related species.

Research Context

- The discovery was made as part of the **Deep Ocean Mission (DOM)**.
- The mission is a national programme of the **Ministry of Earth Sciences** focused on exploring and studying India's deep-ocean resources and ecosystems.

Himalayan Monal



Why in News?

A study in **Uttarakhand** found that Himalayan monals exposed to **roads, tourists and pilgrimage traffic** are using higher-frequency calls. This suggests that human activity is affecting their natural **calling behaviour**.

About Himalayan Monal

- **Scientific name:** *Lophophorus impejanus*
- Also known as **Impeyan Monal** or **Danphe**.
- It belongs to the **Phasianidae** family.
- It is the **state bird of Uttarakhand**.

Appearance

- The species shows strong **sexual dimorphism**.
- **Males:** Bright, multicoloured plumage with a prominent **metallic green crest**.
- **Females:** Brown, streaked body with a **pale blue eye patch** and white throat.

Habitat and Distribution

- Found mainly in **upper temperate conifer and oak forests**, along with open grasslands.
- Usually occurs at elevations of around **2,500–4,000 m**.
- Distributed across the **Himalayan region**, including:
    - Jammu and Kashmir
    - Himachal Pradesh
    - Uttarakhand
    - Sikkim

Behaviour

- It is primarily a **ground-dwelling bird**.
- Uses its strong beak to search through soil and leaf litter for **roots, tubers, seeds, insects and grubs**.
- Shows **altitudinal migration**, moving to lower elevations of around **2,000 m during winter**.
- It can tolerate snow and may forage even through snowfall.

Major Threats

- **Habitat loss**
- **Hunting**
- **Tourism and human disturbance**
- **Road and pilgrimage traffic**, which can alter its natural communication behaviour.

Conservation Status

- **IUCN Red List:** Least Concern
- **Wildlife Protection Act, 1972: Schedule I**

International Whaling Commission (IWC)



Why in News?

India reaffirmed its commitment to the **conservation of whales and other cetaceans (marine mammals)** at the **70th meeting of the International Whaling Commission (IWC-70)** held in **Hobart, Australia**.

About International Whaling Commission

- **Established:** The IWC is an **intergovernmental organisation** established under the **International Convention for the Regulation of Whaling, 1946**.
- **Objective:** It was created to regulate **whaling** and promote the **conservation of whale populations**.
- **Background:** The Commission was formed in response to the sharp decline in whale populations during the **1930s**.
    - Initially, its focus was on ensuring **sustainable whaling practices**.
    - The Convention applies to **factory ships, land stations and whale catchers** operating under the jurisdiction of contracting governments.

Membership

- IWC membership expanded significantly after **1979**:
    - **23 members** in 1979
    - **41 members** by 1985
    - **88 contracting governments** currently.
- Countries that **do not hunt whales** can also become members.
- **India** is a member of the IWC.
- The main office of the IWC is located in **Impington, near Cambridge, England**.

Types of Whaling Regulated by IWC

1. Commercial Whaling

- In **1986**, the IWC adopted a **global moratorium on commercial whaling** because of severe overexploitation of whale populations.
- The Commission has also established **whale sanctuaries in the Indian and Southern Oceans**, where commercial whaling is prohibited.
- Despite the moratorium, countries such as **Norway and Iceland** continue commercial whaling.

2. Scientific Research Whaling

- **Article VIII** of the Convention allows contracting governments to issue special permits for taking whales for **scientific research**.
- Japan's lethal scientific whaling ended in **2019** after it withdrew from the IWC.

3. Aboriginal Subsistence Whaling

- The IWC regulates whaling carried out by **indigenous communities for subsistence**.
- Such whaling is currently permitted for certain whale stocks involving indigenous communities in:
    - **Greenland (Denmark)**
    - **Russian Federation**
    - **St. Vincent and the Grenadines**
    - **United States**

Major Challenges

- The IWC has **limited enforcement powers** and cannot effectively force member

countries to comply with all its rules or impose punishments.

- Disagreements among members have often centred on **whaling quotas and conservation priorities**.

Florianópolis Declaration, 2018

- In **2018**, IWC members adopted the **Florianópolis Declaration**.
- It emphasised that the IWC's primary purpose should be the **long-term conservation of whales**.
- It called for whale populations to recover towards their **pre-industrial levels**.
- It also stated that **lethal methods are not necessary for scientific research** on whales.
- Following this, **Japan announced its withdrawal from the IWC on 26 December 2018**.

EDITORIALS

Crux of The Hindu & Indian Express

Ecology & Environment

UNCCD COP17 Concludes in Mongolia



Why in News?

- **UNCCD COP17** concluded in **Ulaanbaatar, Mongolia**, on **28 August 2026** after two weeks of negotiations.
- The meeting focused on:
  - **Land degradation**
  - **Desertification**
  - **Drought resilience**
  - **Rangeland restoration**
- **197 Parties** participated in the UNCCD process.

About UNCCD

- **Established:** 1994.
- One of the **three Rio Conventions**, along with:
  - **UNFCCC** → Climate Change
  - **CBD** → Biodiversity
- **197 Parties:** 196 countries + European Union.
- Main objective: combat **desertification, land degradation and drought**.
- Key goal: **Land Degradation Neutrality (LDN)** under **SDG Target 15.3**.
- India hosted **UNCCD COP14 in New Delhi in 2019**.

Key Highlights

Global Land Crisis

- Up to **40% of global land** is degraded.
- Countries have committed to restoring **1 billion+ hectares by 2030**.
- More than **70 countries** now have national drought plans, compared with only **3 in 2013**.

Rangelands & Pastoralists

- COP17 gave special importance to **rangelands and pastoral communities**.
- The focus was linked with the **UN International Year of Rangelands and Pastoralists, 2026**.

Nature-Based Solutions

- Emphasis on **Ecosystem-based Adaptation (EbA)** and **Nature-based Solutions (NbS)**.
- Aim: integrate ecosystem restoration into **national planning and infrastructure development**.

Drought Resilience Index

- Introduced as a tool to assess countries' ability to:
  - **Anticipate**
  - **Prepare for**
  - **Adapt to drought**
- Uses **AI-based analytics and vulnerability mapping**.
- Promotes a shift from **reactive relief → proactive preparedness**.

Drought Resilience Investment Facility

- Launched by **UNCCD and Luxembourg**.

- Aims to mobilise up to **$400 million** in public and private capital.
- Focus areas:
    - **Water security**
    - **Climate-resilient agriculture**
    - **Nature-based solutions**
    - **Land restoration**

Finance & Drought Treaty

- COP17 announced **$1.3 billion** in new and pipeline financing for land restoration and drought resilience.
- Global requirement for land restoration is around **$355 billion annually**, against only **$77 billion currently invested**.
- This leaves a **$278 billion annual financing gap**.
- Countries failed to reach agreement on a **legally binding global drought treaty**.
- However, **drought will remain a stand-alone agenda item from COP18 onwards**.

India at COP17

Open Natural Ecosystems (ONEs)

- India launched its first **Guide to Grasslands and Other Open Natural Ecosystems**.
- It highlights ecosystems such as:
    - **Thar**
    - **Banni**
    - **Deccan savannas**
- It seeks to move away from treating open ecosystems simply as **"wastelands."**

Land Restoration

- India has restored **21.76 million hectares** under the **Bonn Challenge**.
- Target: **26 million hectares by 2030**.

India's Key Demands

- **Predictable and sustained international finance** for restoration.
- **Science + traditional knowledge** for rangeland management.
- Recognition of **pastoralists as custodians** of ecosystems.
- India highlighted **Orans of Rajasthan** as an example of community-led conservation.

Important Initiatives

- **Riyadh Global Drought Resilience Partnership**
    - Launched at COP16 in 2024.
    - Initial commitments: **$2.15 billion**.
    - Supports vulnerable and drought-affected countries.
- **Business4Land**
    - UNCCD platform to increase **private-sector participation** in sustainable land and water management.

Climate Shocks in South Asia: Rising Risks and Unequal Vulnerability



Why in News?

- Recent **flash floods in Rasuwa, Nepal** have highlighted the increasing severity of climate-related disasters in South Asia.
- The disaster has reportedly caused **over 1,250 deaths**, with more than **4,000 people missing**.
- The crisis also highlights an important issue:
    - **Climate risks may be shared, but vulnerability is unequal.**

Key Concerns

1. Climate Injustice

- Nepal contributes only around **0.1% of global greenhouse gas emissions**, yet it is facing severe climate-related impacts.
- This reflects the unequal nature of climate change:
    - Countries and communities that contribute relatively little to global emissions can face **disproportionately high losses**.

2. Vulnerable Communities

- Climate disasters do not affect all sections of society equally.
- Vulnerability depends on:
    - **Economic conditions**
    - Occupation

- Location
- Access to infrastructure
- Ability to recover after disasters.

3. Case of Sri Lanka

- **Cyclone Ditwah (2025)** severely affected Sri Lanka.
- The **Malaiyaha Tamil community**, particularly workers in tea and rubber estates, was among the worst affected.
- Historical marginalisation and economic vulnerability increased their exposure to climate shocks.
- Many affected families:
  - Stayed in **temporary shelters for months**.
  - Faced difficulties commuting to tea estates.
  - Continued to face concerns over **compensation and permanent housing**.

Climate Shocks Are Becoming Successive

Examples from South Asia

- **2018:** Flash floods in Sri Lanka's Northern Province.
- **2022:** Major floods in Pakistan.
- **Recent years:** Repeated floods across different parts of India.
- **2025:** Cyclone in Sri Lanka.
- **2026:** Severe floods in Nepal.

Important Observation

- Climate-related disasters are increasingly occurring in **quick succession**.
- Communities may have very little time to recover before facing another shock.

Drought → Flood → Cyclone → Landslide → Another extreme event

Why South Asia is Vulnerable?

Ecological Interconnectedness

- South Asia functions as an **ecologically interconnected system**.
- Rivers, mountains, monsoon systems and ecosystems cross national boundaries.
- A climate event in one country can therefore create **regional consequences**.

Development Vulnerability

- Communities dependent on:
  - Agriculture
  - Plantation work
  - Livestock
  - Daily wages
- often have limited financial capacity to recover from repeated disasters.

Lessons from Sri Lanka

- In the **2018 Northern Province floods**, authorities were reportedly providing **drought relief just days before the sudden floods**.
- This illustrates the challenge of rapidly changing climate conditions:
  - Drought conditions → sudden flooding
- Traditional disaster planning based on isolated hazards may therefore become inadequate.

Need for Regional Cooperation

Present Gap

- South Asian countries frequently face similar climate disasters.
- However, regional responses often remain focused on **individual disasters** rather than coordinated long-term strategies.

What is Needed?

- **Regional early-warning systems**
- Sharing of climate and disaster data.
- Joint disaster-response mechanisms.
- Coordinated river-basin management.
- Regional climate-resilience planning.
- Greater focus on **vulnerable communities**.

Way Forward

Build Climate Resilience

- Shift from disaster response → disaster preparedness and resilience.
- Strengthen early-warning and evacuation systems.

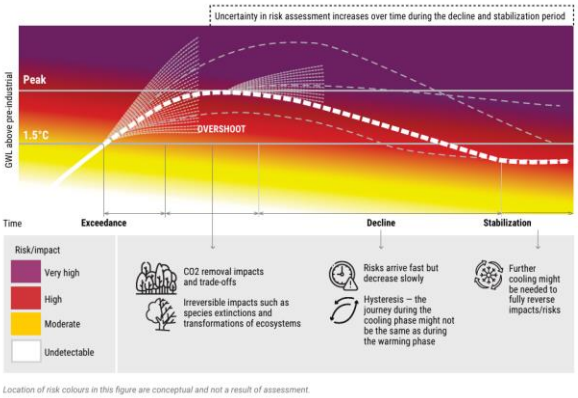
Protect Vulnerable Communities

- Target climate adaptation measures towards:
  - Poor households
  - Plantation workers
  - Farmers
  - Informal workers
  - Communities living in high-risk areas.

Regional Approach

- Treat South Asia as an **interconnected ecological region**.
- Develop collective strategies rather than relying only on national responses.

1.5°C Warming Overshoot: UNEP's Warning and the Future of Climate Action



Why in News?

- UNEP's **"Limiting Overshoot"** report says temporarily crossing the **1.5°C warming threshold is now unavoidable**.
- Even if current climate plans and net-zero pledges are fully implemented, warming could **peak at around 1.8°C**.

What is 1.5°C Overshoot?

- **Overshoot** means global warming temporarily rises above **1.5°C above pre-industrial levels** and is later brought down.
- Crossing 1.5°C for a few months or years does **not automatically breach the Paris Agreement**, which refers to **long-term warming over decades**.
- UNEP says the strategy should now be to approach **1.5°C "from above rather than below"**:
    - Keep the peak as low as possible.
    - Keep the overshoot as short as possible.
    - Bring temperatures back down.

Why is 1.5°C Important?

- Under the **Paris Agreement (2015)**, countries agreed to:
    - Keep warming **well below 2°C**.
    - Pursue efforts to limit it to **1.5°C**.
- Every additional fraction of warming increases risks from:
    - Extreme heat and drought
    - Water stress
    - Glacier and ice-sheet loss
    - Wildfires
    - Ecosystem degradation

Key Findings of UNEP

1. Some Damage May Be Irreversible

Overshoot increases risks of:

- **Greenland and West Antarctic ice-sheet loss**
- **Amazon rainforest dieback**
- **Permafrost thaw**
- Coral reef destruction
- Changes in **Atlantic Meridional Overturning Circulation (AMOC)**
- Long-term sea-level rise and biodiversity loss

Even if temperatures later fall, some impacts may continue.

2. Extent of Overshoot Matters

- **Smaller + shorter overshoot = lower climate damage.**
- Rapid cuts in **methane and other short-lived climate pollutants** can slow near-term warming.

3. Carbon Removal Will Be Needed

- Returning below 1.5°C would require **Carbon Dioxide Removal (CDR)**.
- But CDR has limits and cannot substitute for immediate emission cuts.
- UNEP estimates that afforestation and forest management alone could take **over 100 years to reduce warming by just 0.1°C**, under the stated assumptions.

Three-Step Response

Stage	Required Action
Before peak warming	Deep emission cuts + adaptation
At peak warming	Reach at least **Net Zero**
After peak warming	Achieve **Net-Negative CO_2 emissions**

- **Net-negative emissions** = removing more CO_2 from the atmosphere than is emitted.

Unequal Burden

- Developing countries that contributed relatively little to historical emissions are often **more vulnerable to climate impacts**.
- UNEP estimates their adaptation needs could exceed **$310 billion annually by 2035**, around **12 times current international public finance flows**.
- This strengthens the case for greater **adaptation finance and climate justice**.

Way Forward

- Accelerate **GHG emission reductions**.
- Prioritise **methane reduction** for faster near-term benefits.
- Scale up **adaptation and resilience**.
- Increase climate finance for developing countries.
- Develop responsible **carbon-removal capacity**.
- Protect vulnerable ecosystems and communities.

Swachh Vayu Sarvekshan 2026

The **Ministry of Environment, Forest & Climate Change (MoEFCC)** has released the outcomes of Swachh Vayu Sarvekshan, 2026. The cities have been divided in three categories for this purpose:

1. Cities with population more than 10 lakh
2. Cities with population in between 3-10 lakh
3. Cities with population less than 3 lakh

Outcomes:



City ranks along with scores under Swachh Vayu Sarvekshan - 2026

Category-I: List of Cities- Population above 10 Lakhs			
		Score	
Sl.No.	City/ Town	Final Score	Rank
1	Lucknow	198	*1*
2	Indore	197	*2*
3	Jabalpur	195	*3*
4	Bhopal	192	*4*
5	Agra	192	*4*
6	Surat	191	*5*

Bottom 5:

44	Chennai	147.7	*35*
45	Jamshedpur	147.3	*36*
46	Kota	146.3	*37*
47	Kolkata	142.2	*38*
48	Madurai	132.1	*39*

Category 2 cities: Having population from 3-10 lakh

Category-II: List of cities-Population from 3 to 10 Lakhs			
		Score	
Sl.No.	City/ Town	Final Score	Rank
1	Rourkela	198.5	*1*
2	Firozabad	195	*2*

Category 3 cities:

Category-III: List of cities- Population less than 3 Lakh			
		Score	
Sl.No.	City/ Town	By CPCB	Rank
1	Kalinga Nagar	198.5	1
2	Angul	196.5	2

About Swachh Vayu Sarvekshan

Feature	Details
Launched by	Ministry of Environment, Forest and Climate Change (MoEFCC)
First edition	2022
Purpose	To **rank cities** based on their **implementation of air pollution mitigation measures**
Part of	**National Clean Air Programme (NCAP)**
Frequency	Annual
Categories	1. Million-plus cities 2. Cities with 3–10 lakh population 3. Cities with less than 3 lakh population

How good is Lucknow's air quality?

Though Lucknow won the first position, **it did not achieve** the PM 10 **National Annual Ambient Air Quality Standards (NAAQS)** of **60 micrograms per metre cube.** This target has been set as per the **National Clean Air Program (NCAP)**

Lucknow's PM 10 concentration: 137 micrograms per metre cube. It **has reduced** from 250 micrograms per metre cube in 2017-18.

What is NCAP ?

- Ministry of Environment, Forest and Climate Change (MoEFCC) launched National Clean Air Programme (NCAP) in January, 2019.
- Aim : To improve air quality in 131 cities (non-attainment cities and Million Plus Cities) in 24 States/UTs by engaging all stakeholders.
- The programme envisages to achieve **reductions up to 40% or achievement of National Ambient Air Quality Standards for Particulate Matter10 (PM 10)** concentrations by 2025-26 with 2017 as base year

Carbon Emission Responsibility: India Highlights Low Per-Capita Emissions



Context:

- Prime Minister Narendra Modi addressed the **National Green Tribunal (NGT) International Conference** on *"The Future of Environment and Climate Dynamics"*.
- He highlighted the gap in **per-capita carbon emissions** between India and developed countries and outlined India's progress in renewable energy and clean mobility.

India and Global Carbon Emissions

- **Per-capita emissions**
  - India's per-capita carbon emissions are **less than half the global average**.
  - Per-capita carbon emissions in **developed countries are six times higher than India's**.
  - PM Modi highlighted that the responsibility for carbon emissions is often placed on **developing countries**, despite differences in per-capita emissions.
- **India's climate approach**
  - India is expanding its **non-fossil fuel energy capacity** while continuing its development process.
  - PM Modi stated that India was the **only G20 country** to have fulfilled its **COP21 Paris climate commitments ahead of schedule**.

India's Progress in Renewable Energy

- **Solar energy**
  - Solar energy capacity increased from **2 GW in 2012 to 160 GW currently**.
  - India is also expanding **wind and hydropower capacity**.
- **KUSUM Yojana**
  - Around **30 lakh farmers** have received **solar pumps** under the scheme.
- **One Nation One Grid**
  - The completed project has, according to PM Modi, helped prevent around **200 million tonnes of carbon emissions**.
- **Solar-powered homes**
  - India has started a mission to make **homes centres of solar power generation**.

Clean Mobility and Transport

- **Electric Vehicles**
  - EV sales increased from around **3,000 in 2014 to 25 lakh in 2025**.
  - The expansion of EVs is being linked with India's efforts towards **cleaner mobility**.
- **Metro Rail**
  - Before 2014:
    - Metro networks existed in **5 cities**.
    - The total network was **less than 250 km**.
  - Currently:
    - India has **1,000+ km of metro network**.
    - It covers **20 cities**.
- **Railways and freight transport**
  - **100% railway electrification** has been achieved.
  - **Inland waterways** have expanded.
  - Around **3,000 km of Dedicated Freight Corridor** has been completed.
  - These measures are aimed at reducing **fuel consumption**.

Nuclear Energy

- India is also rapidly expanding **nuclear energy generation**.
- PM Modi highlighted the opposition faced by some government nuclear initiatives through **court cases**.
- This reflects the wider challenge of balancing **clean-energy expansion with environmental concerns**.

India's Global Environmental Initiatives

India has promoted international cooperation through:

- **International Solar Alliance (ISA)**
  - Focus: Promotion of **solar energy**.
- **Global Biofuel Alliance (GBA)**
  - Focus: Cooperation in **biofuels**.
- **International Big Cat Alliance (IBCA)**
  - Focus: **Big-cat conservation** and biodiversity protection.

Climate Justice and Developing Countries

- The discussion highlights the importance of **equity and climate responsibility**.
- Key issues include:
  - Differences in **per-capita emissions**.
  - Development needs of developing countries.
  - Climate impacts faced by vulnerable countries.
  - Support through the **loss and damage fund** under the UN climate framework.

Role of Judiciary in Environmental Governance

CJI Surya Kant highlighted the changing approach of courts towards environmental issues:

- The debate is no longer simply:
  - **Conservation vs Development**
- Instead, the focus should be on:
  - **Harmonising conservation and development**.
  - Making development **sustainable**.
- He also highlighted the shift from:
  - **Environmental rights** → towards **climate-related rights**.
- He emphasised that the environment is closely connected with **human well-being**.

NGT and Sustainable Development

- The conference brought together major constitutional and environmental institutions, including:
  - **Chief Justice of India Surya Kant**
  - **Environment Minister Bhupender Yadav**
  - **Attorney General R. Venkataramani**
  - **NGT Chairperson Justice Prakash Shrivastava**
- Environment Minister **Bhupender Yadav** stated that the real choice is not:
  - **Development vs Environment**
  - but **Sustainable Development vs Unsustainable Development**.

Biodiversity Conservation

India's environmental efforts also include protection of wildlife species such as:

- **Tigers**
- **Elephants**
- **Lions**
- **Great Indian Bustard**
- **Vultures**

Balancing Deep-Sea Discovery with Environmental Stewardship



Context:

- India is expanding its capabilities in **deep-sea exploration, seabed mineral research, underwater robotics and human submersible technology**.
- At the same time, the limited understanding of deep-sea ecosystems raises concerns about the environmental impact of future seabed mining.

India's Deep-Sea Exploration

- India holds **three International Seabed Authority (ISA) exploration contracts** covering about **95,000 sq. km** in the international seabed area.
- These areas include:
  - **Central Indian Ocean Basin**
  - **Central Indian Ridge**
  - **Carlsberg Ridge**
- India's exploration has identified around **366 million tonnes of polymetallic nodules** containing:
  - **Nickel**
  - **Copper**
  - **Cobalt**
  - **Manganese**
- India is also conducting **environmental and biodiversity studies** along with mineral exploration.

Deep Ocean Mission

- Under the **Deep Ocean Mission**, India is developing:
  - Deep-sea mining technology
  - Underwater robotics
  - **MATSYA-6000** human submersible
- The **National Institute of Ocean Technology (NIOT)** has tested a mining machine at a depth of around **5,270 metres**.

Deep-Sea Biodiversity

- Biodiversity surveys have been conducted across **19 seamounts**.
- Around **1,300 deep-sea organisms** have been studied.
- Nearly **23 species** have been reported as **new to science**.
- These findings indicate that deep-sea ecosystems remain **poorly understood**.

Environmental Concerns

- The deep ocean is one of the **least understood ecosystems** on Earth.
- Large-scale seabed mining could physically disturb the **seabed and marine ecosystems**.
- The long-term consequences of such disturbance are difficult to predict.
- Some ecological impacts could be **irreversible**.
- Therefore, technological capability alone should not automatically justify resource exploitation.

Strategic Importance of Deep-Sea Minerals

Deep-sea minerals may have strategic importance for:

- **Renewable energy**
- **Electric mobility**
- **Advanced manufacturing**

Before commercial extraction, important questions include:

- Are these minerals actually required at the proposed scale?
- Are alternative materials available?
- Can demand be reduced through **recycling and resource efficiency**?
- Can **substitution** reduce dependence on these minerals?
- Can a **circular economy** reduce the need for new extraction?

The necessity of extraction should be established before exploitation.

Exploration vs Exploitation

Exploration can support:

- Scientific research
- Biodiversity assessment
- Environmental baseline studies
- Development of deep-sea technologies

Commercial mining can involve:

- Physical disturbance of the seabed
- Greater environmental risks
- Impacts on poorly understood ecosystems

India is currently at the **exploration stage**, providing an opportunity to establish strong environmental safeguards before taking decisions on commercial exploitation.

Need for a Precautionary Approach

- The focus should not only be on: **How to mine with minimum damage?**
- It should also consider: **Whether mining is necessary at all?**

This requires greater emphasis on:

- **Lower resource consumption**
- **Recycling**
- **Resource efficiency**
- **Substitution**
- **Circular economy**

Role of Science

Science and technology should help in:

- Understanding deep-sea ecosystems.
- Identifying resources that are genuinely required.
- Assessing environmental risks.
- Identifying areas that should remain undisturbed.
- Developing alternatives to resource extraction.
- Establishing ecological limits for human activities.

India's Opportunity

India can develop a strong model of **deep-sea ecological governance** by treating the deep ocean as:

- A source of scientific knowledge.
- A potential source of strategic minerals.
- A valuable **ecological asset**.

The knowledge generated through the **Deep Ocean Mission** can help identify ecosystems that may be better left undisturbed.

Link with Sustainable Development

The approach is closely linked with:

- **Nature-based Solutions**
- **Sustainable Development Goals (SDGs)**
- **Circular Economy**
- **Mission LiFE**

These approaches focus on:

- Ecosystem conservation
- Reduced resource consumption
- Resource efficiency
- Recycling and reuse
- Responsible development

India-Born Cheetah Gives Birth to Four Cubs at Kuno National Park



Context:

- An **India-born female cheetah, KGP12**, has given birth to four cubs at **Kuno National Park (KNP), Madhya Pradesh**.
- The birth comes a day after India's **Project Cheetah** completed 4 years and takes the country's total cheetah population to **56**.

Key Highlights :

- **4 new cubs born**
  - KGP12, an **India-born female cheetah**, has given birth to **four cubs** at Kuno National Park.
  - The four cubs have increased India's total cheetah population to **56**.
  - According to the Kuno Field Director and Project Cheetah Director, the cubs appeared to be **healthy**.
  - A team is monitoring the cubs while ensuring that the mother and litter are not disturbed.
- **India-born cheetah**
  - KGP12 is the daughter of **Gemini**, a cheetah brought from South Africa.
  - The latest birth is significant as it reflects the **breeding of cheetahs born in India** under Project Cheetah.

Previous Loss of Cubs

- In **April 2026**, KGP12's previous four cubs were killed in a **leopard attack**.
- The cubs had been born only about a month earlier in the **open forest**.
- The latest successful birth comes months after this loss.

Current Cheetah Population

India currently has **56 cheetahs**:

Category	Number
India-born cheetahs	36
Cheetahs from African nations	20
Total	**56**

Distribution of Cheetahs

- **Kuno National Park:** 53 cheetahs
- **Gandhi Sagar Wildlife Sanctuary:** 3 adult cheetahs
  - Located in **Mandsaur and Neemuch districts** of Madhya Pradesh.

Project Cheetah

- **Project Cheetah** is India's programme for the **reintroduction of cheetahs**.
- The programme completed **four years** in September 2026.
- The latest birth occurred **one day after the completion of 4 years** of the project.

Cheetah Translocations to India

- In **February 2026**, India brought **nine cheetahs from Botswana**:
  - **6 females**
  - **3 males**
- This was the **third intercontinental transfer** of cheetahs from an African country to India since the reintroduction programme began.

Earlier transfers included:

- Namibia – September 2022
- South Africa – February 2023
- Botswana – February 2026

Expansion of Cheetah Habitats

- Preparations are underway to develop **Veerangana Durgavati Tiger Reserve** in **Sagar district, Madhya Pradesh**, as the **third home for cheetahs**.
- This would expand the geographical space available for India's growing cheetah population.

Challenges

- **Predation:** The death of KGP12's earlier cubs in a leopard attack highlights risks to young cheetahs.
- **Survival of cubs:** Successful births need to be followed by effective protection and survival of the cubs.
- **Habitat management:** Expansion of suitable habitats is important as the population increases.
- **Human-wildlife management:** Growing wildlife tourism and conservation activities require careful management around protected areas.

Union Environment Minister Reviews Delhi's Air Pollution Mitigation Plan



September 28, 2026

The Union Environment Minister reviewed Delhi's **Air Pollution Mitigation Action Plan** with the Delhi Chief Minister. The meeting focused on measures required before and during the **winter pollution season**.

The strategy focuses on **vehicular emissions, road and construction dust, waste burning, industrial pollution, public transport and pollution hotspots**, along with greater public participation.

Why in News?

37 identified hotspots will have **Jan Bhagidari** events by October 10. Action plans for **NCR areas** are to be finalised before October 10. Greater coordination is planned among Delhi and other **NCR States**. The government stressed **coordinated enforcement and citizen participation**.

Hotspot Action Plan

42 hotspots have already been rectified. **8 more hotspots** are targeted for action by October. One-way traffic and **decongestion measures** will be tested at selected hotspots. Citizens will be encouraged to report:

- Encroachments
- Illegal parking
- Dumping points

8 road stretches have already been made signal-free. The remaining **7 stretches** are targeted for completion by October 2026.

'No PUCC, No Fuel'

The **'No PUCC, No Fuel'** campaign will be implemented across Delhi. It will cover **500 ANPR-**

enabled fuel stations. Action will be taken against non-compliant fuel pumps.

- The measure aims to improve compliance with **Pollution Under Control Certificate (PUCC)** requirements.

Public Transport and Last-Mile Connectivity

A campaign will promote the **Delhi Metro Sarthi App** during October 1–10. Last-mile connectivity is available at all **228 Metro stations**. Delhi's bus fleet has reached **6,840**, including **5,088 e-buses**.

- The focus is on increasing the use of **public transport**.

Road Dust and Construction Pollution

1,193 km of roads have already been completed under road redevelopment. The remaining work is targeted for completion by **November 15**. End-to-end paving of footpaths will help to reduce **road dust**. A ban on dust-generating demolition and outdoor civil construction activities will apply from **November 1 to January 31**.

- A complete ban on construction and demolition activities will apply from **December 10 to January 20**.

Prevent Open Waste Burning

Zero-burning measures will be strengthened. Ward-level monitoring and market waste collection will be improved. Enforcement of the **Solid Waste Management Rules, 2026** will be strengthened. **MRSMs** have increased from **76 to 98**.

- Dedicated monitoring teams will be deployed by **October 15**.
- A city-wide **'Zero Burning' campaign** will also be conducted.

Focus on Greening

Delhi has reported **71 lakh plantations**. **433 out of 434 acres** of identified brown areas have been greened. The focus is on improving plantation survival and increasing green cover.

Winter Protocol

The winter pollution strategy includes:

- Restrictions on **polluting vehicles**
- **Doubled parking charges**
- Staggered office timings
- **50% work-from-home arrangements**
- Restrictions on entry of vehicles registered outside Delhi and below **BS-VI emission standards**
- These vehicle restrictions will apply from **November 1, 2026**.
- **CNG and EVs** will be exempted.

EVs and Parivartan Yojana

EV Policy 2026 will be promoted. Incentives for **scrapping old vehicles** will be increased. A mission-mode registration drive will be conducted under the **Parivartan Scheme**.

- **Jan Bhagidari Camps** will be organised during October-November.

Industrial Pollution

Industrial pollution enforcement will be strengthened. An **AI-enabled Command and Control Centre** will be operationalised. Monitoring stations will increase from **47 to 60**. **334 enforcement teams** will be deployed.

- Strict action will be taken against **non-conforming polluting industries**.
- Daily **AQI bulletins**, grievance redressal and NCR-level coordination will also be strengthened.

Public Participation

Jan Bhagidari is an important part of the pollution-control strategy. Citizens will be encouraged to participate in Reporting violations, Monitoring local hotspots, Preventing waste burning, Supporting public transport, Promoting cleaner practices.

Conclusion

Delhi's winter air pollution strategy focuses on **vehicular emissions, dust, waste burning, industrial pollution and public transport**. Important measures include **'No PUCC, No Fuel', hotspot management, construction restrictions, EV promotion, greening and stronger industrial monitoring**. Effective implementation and **NCR-level coordination** will be important for reducing pollution from different sources.

❐❐❐

Geography

Ghepan Glacial Lake: Rising GLOF Risk in the Western Himalayas



The **Lahaul-Spiti district administration** has decided to strengthen surveillance and preventive measures around **Ghepan Glacial Lake** following the destruction caused by a recent **glacial lake outburst flood (GLOF)** in Nepal. The move highlights the growing concern over the expansion of glacial lakes in the Himalayan region.

About Ghepan Lake

- **Location:** Lahaul region, Himachal Pradesh
- **Altitude:** Around **4,070 metres (over 15,000 feet)**
- **Local name: Ghepang Ghat**, commonly called **Ghepan Lake**
- The lake is named after **Ghepan**, a revered protector deity of the Lahaul region.
- It is known for its **turquoise-blue waters** and surrounding glaciers.
- **Three hanging glaciers** supply water to the lake.
- The lake lies in a high-altitude Himalayan setting where glaciers directly feed an alpine lake.
- It is also a challenging trekking destination, with the route generally starting from **Sissu** in the Lahaul Valley.

Growing Disaster Risk

- Over the last **three decades**, accelerated glacier melting has contributed to a significant increase in the size of Ghepan Lake. Its continued expansion has raised concerns for settlements and infrastructure located downstream.
- A sudden failure of the lake's natural barrier could send large quantities of **water, ice, rocks and debris** downstream. Such an event is known as a **Glacial Lake Outburst Flood (GLOF)**.
- The expansion of Ghepan Lake is also linked to the broader effects of **rising temperatures and climate change in the Western Himalayas**, where glacier retreat is altering the region's hydrology and increasing risks from unstable glacial lakes.

Vehicle Falls into Lohit River in Arunachal Pradesh



Why in News?

- A vehicle registered in **Delhi**, carrying **10 people**, fell into the **Lohit River**.
- The incident resulted in **one death and six injuries**, while **three people remained missing**.
- The accident has drawn attention to the **fast-flowing and difficult terrain** around the Lohit River.

About Lohit River

- The **Lohit River** is an important **tributary of the Brahmaputra River** in northeastern India.
- **Origin:** Eastern Tibet, in the **Zayal Chu range**.
- The river flows through **Arunachal Pradesh** for around **200 km** before joining the **Brahmaputra in Assam**.
- It enters India through **Anjaw district**.
- Its course passes through:
  - **Deep valleys**
  - **Dense forests**
  - **Remote tribal areas**
  - **Mishmi Hills**
- The region around the river contains some of the **densest tropical forests in India**.
- The Lohit is known for its **swift and turbulent flow**, particularly as it descends from the Tibetan Plateau through narrow gorges.

Why is Lohit Called the "River of Blood"?

- The **Lohit Valley and Mishmi Hills** contain large amounts of **laterite**, a soil rich in iron.
- During periods of heavy rainfall and high river flow, iron-rich sediments can give the river water a **reddish colour**.
- This characteristic is associated with the name **Lohit**, meaning **blood-red**.

Major Tributaries

- **Right-bank tributaries:**
  - **Dau**
  - **Dalai**
  - **Tidding**
- **Left-bank tributary:**
  - **Lang**

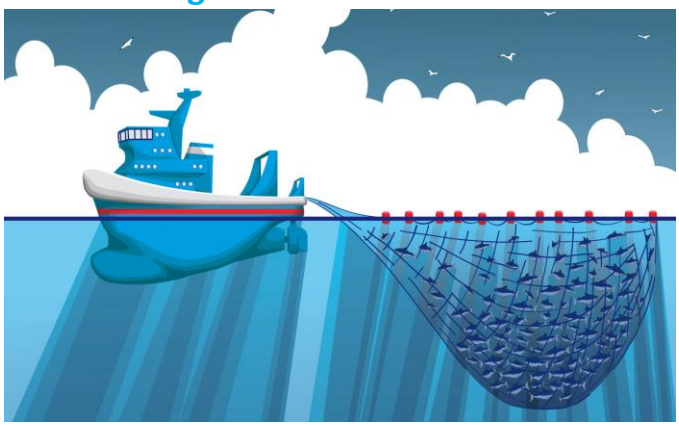
Importance of Lohit River

- The river plays an important role in the **water and economic needs of Arunachal Pradesh**.
- It contributes to:
  - **Drinking water supply**
  - **Agriculture**
  - **Hydropower and energy needs**
- The river also supports the **ecology and biodiversity** of the region.

Religious Significance

- **Parshuram Kund**, an important Hindu pilgrimage site, is located along the **lower reaches of the Lohit River** in Arunachal Pradesh.
- It is associated with **Lord Parshuram** and attracts pilgrims from different parts of India.

Supreme Court on Regulation of Purse Seine Fishing



Why in News?

- The **Supreme Court** recently emphasised that the **Union and State Governments** must follow the principle of **cooperative federalism** while implementing regulations on purse seine fishing.
- The observation relates to the management of **purse seine fishing in India's Exclusive Economic Zone (EEZ) and territorial waters**.

About Purse Seine Fishing

- A **purse seine** is a large fishing net mainly used in the open ocean to catch **dense schools of pelagic fish**.
- **Pelagic fish** live and swim in the **water column of the open ocean**, rather than near the seabed.
- The fishing method works by:
  - Placing a large net around a **school of fish**.
  - Encircling the fish completely with the net.
  - Pulling a **purse line** at the bottom of the net to close its lower portion.
  - This process is called **"pursing"**.
  - As the net is tightened, the fish become concentrated and are then brought aboard or alongside the fishing vessel.
- A purse seine net can be more than **2,000 metres long** and around **200 metres deep**.
- Its size varies depending on:
  - **Type and size of fishing vessel**
  - **Mesh size**
  - **Target fish species**

Advantages

- It is generally considered an **efficient fishing method** in open waters.
- The net usually **does not come into contact with the seabed**, reducing damage to the seafloor.
- It can result in **relatively low bycatch** when used appropriately.
- It can also target fish that gather around **Fish Aggregating Devices (FADs)**.

Why is Purse Seine Fishing Banned in Some States?

- Some coastal States have raised concerns over declining populations of **small pelagic fish**, particularly:
  - **Sardines**
  - **Mackerel**
  - **Anchovies**

- **Trevally**

- The wide nets used in purse seine fishing may capture not only the intended species but also **non-target and vulnerable species**, including **turtles**.
- These concerns have led some States to restrict or prohibit the method in their territorial waters.

Federal Structure and Fisheries

- **Fisheries within territorial waters** fall under the responsibility of the **States**.
- Under the **Seventh Schedule of the Constitution**, States are responsible for the management of **marine fisheries in their territorial waters**.
- This makes coordination between the **Union and State Governments** important for effective fisheries management.

States/UTs with Purse Seine Restrictions

- Bans on purse seine fishing are currently implemented in territorial waters of:
  - **Tamil Nadu**
  - **Kerala**
  - **Puducherry**
  - **Odisha**
  - **Dadra and Nagar Haveli and Daman and Diu**
  - **Andaman and Nicobar Islands**
- These restrictions extend up to **12 nautical miles** from the coast.

Pichavaram Mangroves Valued at ₹2,485 Crore



Why in News?

- A recent study estimated the **Total Economic Value (TEV)** of the **Pichavaram mangrove ecosystem** at **₹2,485.38 crore ($289 million)**.
- Its estimated value is around **₹1.83 crore per hectare**.
- The valuation reflects the ecosystem's **ecological, economic and social benefits**.

About Pichavaram Mangrove Forest

- **Location:** Near **Chidambaram, Tamil Nadu**.
- It is described as the **second-largest mangrove forest in the world after the Sundarbans**.
- The forest covers around **1,100 hectares**.
- It is connected to the **Bay of Bengal** and is separated from it by a long **sand bank**.
- It lies between two major estuaries:
  - **Vellar Estuary** in the north
  - **Coleroon Estuary** in the south

Vellar-Coleroon Complex

- The Pichavaram mangrove ecosystem forms part of the **Vellar-Coleroon complex**.
- This system contributes to the formation of the **Killai backwaters and Pichavaram mangroves**.

Landscape and Habitat

- The forest includes a variety of habitats such as:
  - **Channels**
  - **Creeks**
  - **Gullies**
  - **Mudflats**
  - **Sand flats**
- It contains more than **50 islands** of different sizes.
- The area has around **4,400 large and small canals**.
- Mangrove trees grow in water depths ranging from around **3 to 10 feet**.

Biodiversity

- Pichavaram provides habitat to **more than 200 species of birds**.
- Commonly observed birds include:
  - **Snipes**
  - **Egrets**
  - **Cormorants**
  - **Storks**
  - **Herons**
  - **Spoonbills**
  - **Pelicans**
- The ecosystem also supports diverse marine life such as:

- **Seaweed**
- **Fish**
- **Prawns**
- **Crabs**
- **Oysters**
- **Turtles**
- **Otters**

Conservation Status

- **Pichavaram Mangrove Forest was designated a Ramsar Site in 2022.**

Subarnarekha River Floods Affect Over 45,000 People in Balasore



Why in News?

- More than **45,000 people** across **22 gram panchayats** in three blocks of **Balasore, Odisha**, were affected by floods.
- The flooding occurred after the **Subarnarekha River breached its banks** again.

About Subarnarekha River

- The **Subarnarekha** is an important **east-flowing river** of India.
- It flows through:
  - **Jharkhand**
  - **Odisha**
  - **West Bengal**
- The name **Subarnarekha** means **"streak of gold"**.
- It is traditionally associated with the presence of **gold particles in its riverbed**, particularly near its source.

Course of the River

- **Origin:** Near **Nagri village in Ranchi district, Jharkhand**.
- It originates at an elevation of around **600 metres above sea level**.
- From its source, it flows eastward through the **Chhotanagpur Plateau**.
- The plateau is rich in **mineral resources, including copper**.
- The river passes through **Hundrugbagh Waterfall**, marking its exit from the plateau.
- It travels around **395 km** before draining into the **Bay of Bengal** at **Kirtania Port in Odisha**.

Major Tributaries

- **Kanchi River**
- **Kharkai River**
- **Karkari River**

Subarnarekha Basin

- The basin is located:
  - **North:** Damodar River
  - **South:** Brahmani and Baitarani rivers
  - **West:** Chhotanagpur Plateau
  - **Southeast:** Bay of Bengal
- The basin extends across **Jharkhand, Odisha and West Bengal**.
- The region is mainly influenced by the **Southwest Monsoon**, which generally begins in **June** and continues until **October**.

Major Dams and Reservoirs

- **Getalsud Reservoir**
- **Chandil Dam**
- **Galudih Barrage**
- **Icha Dam**

Important Cities/Places Along the River

- **Ranchi – Jharkhand**
- **Jamshedpur – Jharkhand**
- **Chaibasa – Jharkhand**
- **Bhadrak – Odisha**
- **Kirtania Port – Odisha**

Anak Krakatau Volcano Erupts in Indonesia



Why in News?

- **Indonesia's Anak Krakatau volcano** recently erupted.
- The eruption led to the **cancellation of flights at Jakarta's Soekarno-Hatta International Airport**.

About Anak Krakatau Volcano

- **Location:** Sunda Strait, between **Java and Sumatra** in Indonesia.
- It is a **stratovolcano**.
- It forms part of the **Pacific Ring of Fire**, a region with intense volcanic and seismic activity.

History

- **Anak Krakatau** means **"Child of Krakatau"**.
- It is associated with the famous **Krakatau eruption of 1883**, which caused significant global cooling.
- Anak Krakatau **emerged from the sea in 1927**.
- Repeated **Strombolian eruptions** gradually increased the size of the volcano.
- It is located above **multiple magma chambers**.
- In **2018**, an eruption caused the **collapse of its southwestern flank**.
- The resulting landslide generated a **tsunami**.

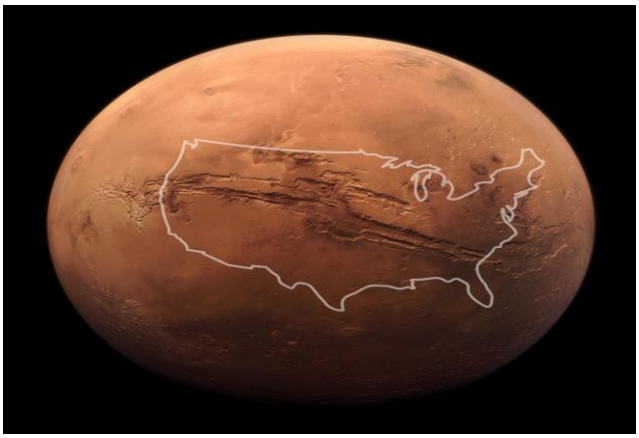
What is a Stratovolcano?

- A stratovolcano is also known as a **composite volcano**.
- It generally has a **steep-sided and symmetrical cone**.
- It is formed through layers of:
    - **Lava flows**
    - **Volcanic ash**
    - Other **eruptive materials**
- Stratovolcanoes are commonly associated with **subduction zones**.
- Many are located in major volcanic regions such as the **Ring of Fire**.
- They account for around **60% of the Earth's individual volcanoes**.

Why are Stratovolcanoes Steep and Explosive?

- They are formed from **viscous and sticky lava** that does not flow easily.
- The lava accumulates around the volcanic vent, creating **steep slopes**.
- Gas can become trapped within the viscous magma.
- This makes stratovolcanoes more likely to produce **explosive eruptions**.

Massive Outburst Floods in Valles Marineris on Mars



Why in News?

- Scientists have found evidence that a **much larger outburst flood** occurred on **Mars** during the **Late Hesperian to Early Amazonian period**.
- The flooding was triggered when **paleolakes in Valles Marineris breached**, releasing a massive volume of water.

About Valles Marineris

- **Valles Marineris**, also known as **Mariner Valley**, is a huge interconnected **canyon system on Mars**.
- It was discovered during the **Mariner 9 mission in 1971** and named after the mission.
- It extends roughly **4,000 km from east to west**, just south of the Martian equator.
- In comparison, the **Grand Canyon on Earth** is about **446 km long**.
- It is among the **largest canyon systems in the Solar System**.
- The system stretches across nearly **20% of Mars' circumference**.

Physical Features

- Individual canyons are generally around **200 km wide**.
- Their walls can reach **2–5 km in height**.
- At the centre, several canyons join to form a huge depression:
    - **Width:** Around 600 km
    - **Depth:** Around 9 km

How Did Valles Marineris Form?

- The canyon system contains several geological features that provide clues about its formation.

- Some canyon walls are **fault scarps**, formed by movement of the Martian crust along faults.
- These faults are associated with the **Tharsis Rise**, a massive volcanic bulge located to the northwest.
- **Erosion** also contributed to the formation of the canyons.
- Deep **gullies** can be seen cutting into some canyon walls.

Evidence of Ancient Lakes and Floods

- Some parts of Valles Marineris contain thick **sedimentary deposits**.
- These deposits may have formed in **ancient lakes** that once occupied the canyons.
- The lakes may later have **drained catastrophically towards the east**.
- Geological evidence in the region indicates the occurrence of **large ancient floods**.

Cape Verde



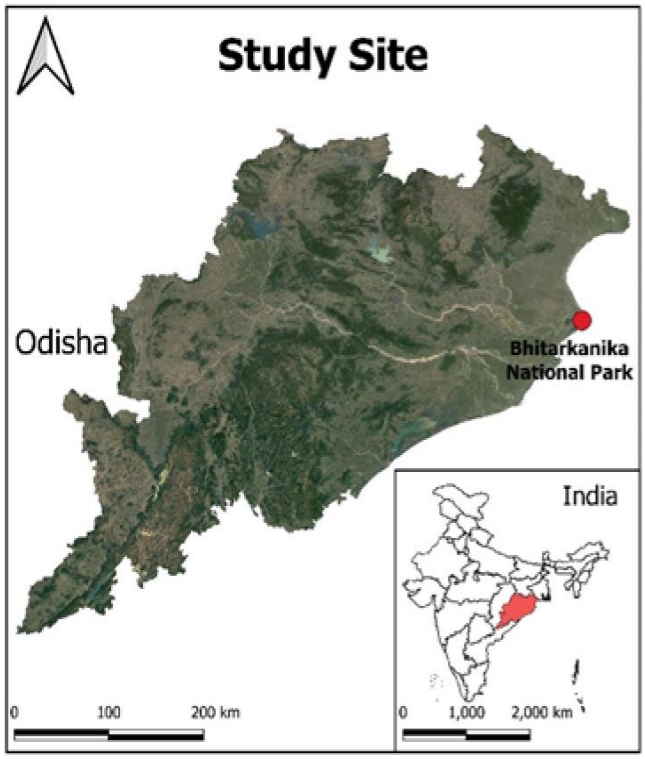
Why in News?

At least **25 people were killed** in a bus accident in the African island nation of **Cape Verde** recently.

About Cape Verde

- **Cape Verde**, also known as **Cabo Verde**, is an island country in the **central Atlantic Ocean**, off the northwest coast of Africa.
- It consists of **10 volcanic islands**, divided into two groups:
  - **Barlavento** – Windward Islands
  - **Sotavento** – Leeward Islands
- It covers an area of about **4,033 sq. km**.
- It is located near **Senegal**, which is the nearest point on the African mainland.
- **Climate:** Generally moderate, with stable temperatures and **extreme aridity**.
- **Terrain:** The eastern islands are generally **older and flatter**, while the western islands are **younger and more mountainous**.
- Due to its **volcanic nature and arid climate**, the country has no significant long or permanent rivers.
- **Capital:** Praia
- **Political system:** Multiparty republic
- **History:** The islands were uninhabited until **Portuguese colonisation in the mid-15th century**. Cabo Verde gained independence in **1975**.
- **Population:** Most people are of mixed European and African descent and are commonly referred to as **Mestiço or Crioulo**.
- **Languages: Portuguese** is the official language, while **Crioulo** is the most widely spoken language.

Bhitarkanika National Park



Why in News?

Hundreds of saltwater crocodile hatchlings were recently spotted emerging from nests in Bhitarkanika National Park, Odisha.

Key Facts

- **Location:** Odisha, in the estuarine region of the **Brahmani, Baitarani and Dhamra rivers**.
- It is surrounded by **Bhitarkanika Wildlife Sanctuary**.

- **Gahirmatha Beach and Marine Sanctuary** lie to its east.
- It is one of India's major **mangrove ecosystems** and is also a **Ramsar Site**.
- The park is known for having the **largest congregation of saltwater crocodiles in India**.
- **Gahirmatha Beach** hosts the world's largest known nesting colony of **Olive Ridley turtles**.
- The ecosystem supports diverse **mangrove vegetation, reptiles, mammals and migratory birds**.
- Important fauna include **saltwater crocodiles, spotted deer, sambar, wild boar, jungle cats and hyenas**.

Levees



Why in News?

Around **2,000 km of levees** along the **Mississippi River** have helped reduce flood risks for nearby cities and agricultural areas over the last century.

About Levees

- A **levee** is an embankment constructed along a river or coastline to **restrict the movement of water** and reduce flooding.
- They can be **natural or man-made**.
- River levees mainly protect **settlements, farmland and infrastructure** from overflowing rivers.
- Coastal levees are used to protect low-lying areas from **tides and seawater**.

Natural Levees

- They develop when a river overflows and leaves behind **sediments near its banks**.
- Repeated deposition gradually raises the riverbanks, creating elevated ridges along the river.
- These formations are generally found **parallel to the river channel**.

Artificial Levees

- Where natural protection is inadequate, embankments are deliberately constructed.
- Common materials include **earth, sand, rocks and concrete**.
- Their design depends on factors such as the **expected flood level, rainfall and storm intensity**.

Coastal Use

- Levees and similar structures can be used to protect coastal and low-lying regions from **tidal flooding**.
- The **Netherlands** is a major example of using **dikes, dams and levees** for flood management and land reclamation.

Important Example

- The **Mississippi River** has one of the world's largest systems of modern flood-control levees.

Limitation

- Levees can reduce flood damage, but **failure or breaching** of these structures can cause sudden and severe flooding.

Lipulekh Pass



The centuries-old **India–Tibet trade route through Lipulekh Pass** has reopened, with a **17-member Indian delegation** entering **Taklakot in Tibet** after China cleared cross-border trade.

About Lipulekh Pass

- **Location:** Pithoragarh district, **Uttarakhand**, in the Kumaon region.
- **Altitude:** Around **5,334 metres (17,500 feet)**.
- It connects **Uttarakhand with Tibet** and lies near the **India–China–Nepal tri-junction**.
- It has been an important route connecting the **Indian subcontinent with the Tibetan Plateau** for centuries.

- **Trade:** Lipulekh was the **first Indian border post opened for trade with China in 1992**.
    - **Shipki La (Himachal Pradesh):** 1994
    - **Nathu La (Sikkim):** 2006
- It is also an important route for the **Kailash Mansarovar Yatra**.
- Cross-border trade through the pass has traditionally been important for border communities, including the **Bhotiya tribal communities**.

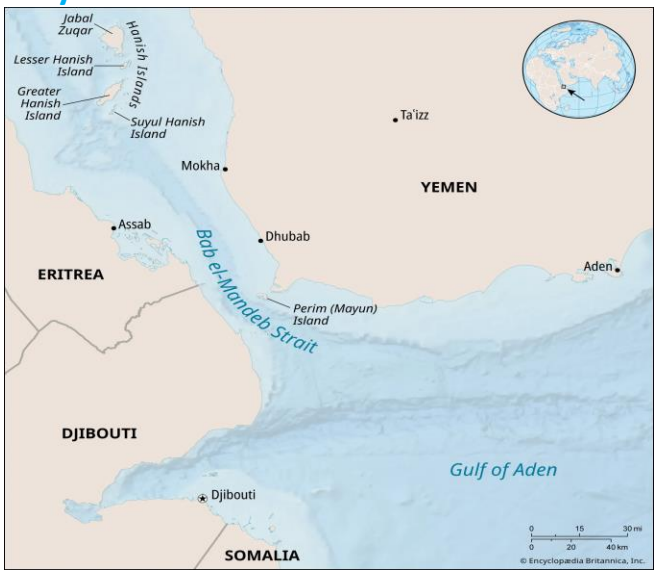
India–Nepal Territorial Dispute

- The dispute is linked to the **1816 Treaty of Sugauli**, signed after the Anglo-Nepal War.
- The treaty identified the **Kali River** as the boundary between British India and Nepal.
- The main disagreement is over the **source of the Kali River**.
- **India's position:** The river originates near **Kalapani**, placing **Kalapani, Lipulekh and Limpiyadhura** on the Indian side.
- **Nepal's position:** The river originates farther west, which would place these areas within **Nepalese territory**.

China Factor

- Nepal has objected to India–China activities through **Lipulekh**, arguing that bilateral arrangements concerning the pass were made without Nepal's consent.
- In **2015**, India and China agreed to use Lipulekh for **bilateral trade and the Kailash Mansarovar pilgrimage**.
- The agreement led to **protests in Nepal** because of its territorial claims over the area.

Mayun Island

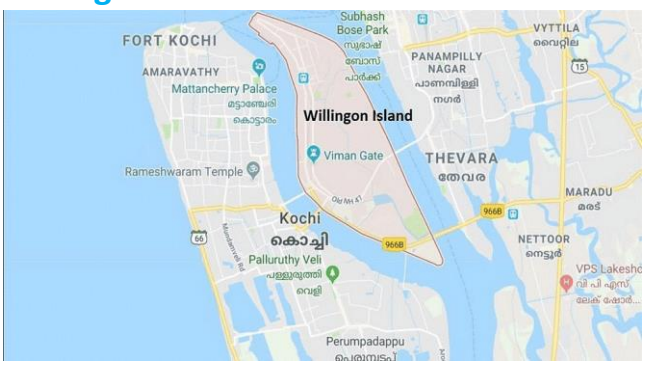


Yemen's Iran-aligned **Houthi forces** recently captured **Mayun Island**, a strategically important island in the **Bab el-Mandeb Strait**, which connects the **Red Sea with the Gulf of Aden**.

About Mayun Island

- **Location:** It is a small **volcanic island belonging to Yemen**, located in the **Bab el-Mandeb Strait** at the southern entrance of the Red Sea.
- **Size:** The island covers about **13 sq. km** and rises up to around **65 metres**.
- **Strategic position:** It lies near the narrowest part of the strait, which is about **26 km wide**.
- **Geographical feature:** Mayun divides the Bab el-Mandeb into **two navigable channels**.
- **Maritime importance:** Its location gives control over an important sea route connecting the **Red Sea and the Gulf of Aden**.
- **Suez Canal link:** The island became more important after the opening of the **Suez Canal**, which created a shorter maritime route between **Europe and Asia** through the Red Sea.
- **British control:** Britain occupied the island in **1857** and established a **coaling station**. It remained under British control until **1967**.
- **Yemeni control:** Mayun became part of **independent South Yemen** in 1967.
- **Military significance:** The island has a **natural deep-water harbour** on its southwestern side and a **military airfield** in the north.
- **Strategic significance:** Control of Mayun can provide leverage over shipping passing through the **Bab el-Mandeb**, making it important for regional security and global maritime trade.

Willingdon Island



A recent seminar highlighted the need to **diversify activities and revitalise Willingdon Island** to make better use of its potential, while increasing **revenue and employment** around Cochin Port.

About Willingdon Island

- **Location:** Kochi, Kerala.
- It is one of India's major **man-made islands**.
- **Creation:** The island was created in **1936** by dredging soil from **Vembanad Lake**, Kerala's largest lake.
- **Purpose:** It was developed to create a **deep-water port** capable of handling large ships and to support Kochi's trade and commerce.
- The project was initiated during the tenure of **Lord Willingdon**, the then Viceroy of India, and the island was named after him.
- **Engineer:** It was designed and developed by harbour engineer **Sir Robert Bristow**.
- Today, the island functions as an important **commercial and institutional centre** of Kochi.

Important Institutions

- **Cochin Port**
- **Southern Naval Command** of the Indian Navy
- **Central Institute of Fisheries Technology**
- It is connected to mainland Kochi through the **Venduruthy Bridge**.

Lord Willingdon (1931–1936)

- **Governor of Bombay:** 1913–1918
- **Governor of Madras:** 1919–1924
- **Viceroy and Governor-General of India:** 1931–1936
- He succeeded **Lord Irwin** as Viceroy.

Major Events During His Tenure

- The **Civil Disobedience Movement** resumed after the failure of the **Second Round Table Conference (1931)**.
- The **Communal Award (1932)** was announced during his tenure.
- The **Poona Pact (1932)** between **Mahatma Gandhi and B. R. Ambedkar** took place during this period.
- The **Government of India Act, 1935**, which introduced **provincial autonomy**, was enacted during his tenure.

EDITORIALS

Crux of The Hindu & Indian Express

Geography

Centre to Send Teams to Assess Drought in Karnataka, Maharashtra



The Centre will send teams to **Karnataka and Maharashtra** to assess the drought situation in the two States. Union Agriculture Minister **Shivraj Singh Chouhan** said climate change, erratic rainfall and water shortages are creating challenges for agriculture. The government has also stressed the need for **data-driven planning, scientific assessment and field-level monitoring** for the upcoming **Rabi 2026** season.

Why in News?

Karnataka has declared a drought. **Maharashtra** has declared drought across nearly **two-thirds of the State**. A Central team will visit Karnataka on **October 3, 2026**. A Central team will also be sent to Maharashtra.

- **Telangana and Andhra Pradesh** are also facing a possible drought crisis.
- The Centre has asked States to prepare crop plans based on **water availability and soil moisture**.

Water Budget Must Guide Crop Planning

States and districts have been asked to assess the **water available for irrigation** before finalising crop plans. Areas with limited water should give priority to **less water-intensive crops**, such as: Pulses and Oilseeds;Areas with assured irrigation can plan other crops accordingly. States should assess:

- **Water availability**
- **Soil moisture**
- Irrigation requirements

Rainfed areas require special planning because soil moisture largely determines crop choice and productivity. The government has stressed that crops requiring more water should not be sown without ensuring adequate water availability. **Delayed sowing** can affect germination and productivity.

Centre to Undertake Ground Assessment of Drought-Hit Areas

Maharashtra and Karnataka are facing serious **drought and water scarcity concerns**. Nearly **two-thirds of Maharashtra** has been affected, according to the Agriculture Minister.

- A Central team will conduct a ground assessment in Karnataka on **October 3**.
- A Central team will also be sent to Maharashtra.
- **Maharashtra, Karnataka, Telangana and Andhra Pradesh** need crop plans based on:
    - Water availability
    - Soil moisture
    - Local conditions
- Separate strategies should be prepared for **rainfed and irrigated areas**.
- Timely sowing is important as delayed sowing can affect **germination and productivity**.

Timely Availability of Quality Seed :

Quality seed has been identified as a key priority for Rabi preparations. States should identify varieties suitable for different **regions and agro-climatic conditions**. A complete roadmap should cover:

- Seed demand
- Procurement
- Lifting
- Distribution

States should identify varieties that have gained acceptance among farmers. Farmers should be made aware of suitable varieties through **extension activities**. The objective is to ensure that quality seeds reach farmers **before the sowing window**.

Push for Pulses and Oilseeds

States have been asked to promote **pulses and oilseeds**, especially in areas that remain fallow after paddy cultivation. These crops require relatively **less water**. The move supports India's objective of achieving **self-reliance in pulses and edible oils**.

- States have been asked to finalise their Rabi plans by **September 29**.
- Important crops include:
    - **Chana**
    - **Masoor**
    - **Mustard**
- Production planning should be supported by **assured markets and procurement**.
- Farmers need confidence that their produce will be procured on time.

Procurement Planning Must Be in Place in Advance

Procurement arrangements should be planned along with production. If State governments are unable to undertake procurement on time, **NAFED and NCCF** can undertake direct procurement from farmers. States need to ensure timely mandi-related arrangements. The Centre has approved large-scale procurement proposals for pulses and oilseeds under the **Price Support Scheme (PSS)**.

- States should prepare a complete procurement roadmap covering:
    - Seed availability
    - Distribution
    - Production
    - Market arrangements
- States have also been asked to consult farmers while preparing seed plans.
- **Krishi Vigyan Kendras (KVKs)** should be used effectively to support farmers.

Balanced Fertiliser Use and 'Khet Bachao Abhiyan'

States have been asked to promote **balanced fertilizer use**. Excessive fertiliser application can:

- Increase cultivation costs.
- Affect **soil health**.

The **'Khet Bachao Abhiyan'**, launched during the Kharif season, should also be extended to Rabi. States should share experiences where fertiliser use has declined without affecting production. Farmers should receive scientific guidance on balanced fertiliser application. Fertilisers must be available to farmers **before sowing**.

- **Farmer ID** is being used in pilot initiatives to improve fertiliser distribution and prevent diversion and black marketing.
- The Centre is spending around **₹2 lakh crore** on fertiliser subsidy.
- Subsidised prices mentioned at the conference include:
    - **Urea: ₹266 per bag**
    - **DAP: ₹1,350 per bag**

- The campaign also focuses on protecting **soil health, beneficial organisms and long-term farmland productivity**.

Natural Farming: Focus on Branding, Marketing and Certification

Farmers are increasingly showing interest in **natural farming**. States have been asked to focus on:

- Branding
- Marketing
- Certification

Andhra Pradesh, Gujarat and Himachal Pradesh have developed brands for natural farming products. Better branding can help natural farming products establish a market identity and obtain **better prices**. Certification should not become a barrier for farmers.

Farmer Credit Card and Farmer ID Need Greater Coverage

Around **9.54 crore farmer families** are covered under **PM-KISAN**. However, **Kisan Credit Card (KCC)** coverage remains inadequate in several areas. States have been asked to identify areas where KCC coverage is low. They should also examine delays in **loan sanctioning** at the banking level.

- The objective is to ensure timely access to **institutional credit** for farmers who need it.
- States have been asked to accelerate work on **Farmer ID and AgriStack**.
- **Tenant farmers** and farmers cultivating land at different locations should also be included in the Farmer ID framework.
- A strong digital system can improve the delivery of government schemes.

Weekly Monitoring of Crops, Disease and Market Prices

States have been asked to conduct **weekly monitoring** of Crop conditions, Sowing progress, Germination, Pest and disease attacks, Market prices. Real-time information can help authorities identify emerging problems and take corrective action. The Agriculture Ministry also conducts weekly national-level reviews covering:

- Crop conditions
- Market rates
- Disease outbreaks

Climate-Resilient and Sustainable Agriculture

Changing weather patterns and uneven rainfall have increased the need for:

- **Agricultural diversification**
- Sustainable farming
- Research-based agricultural practices

Greater focus is required on improving **farmers' incomes**. Important areas include:

- **Per Drop More Crop**
- Soil health management
- Modern agricultural infrastructure
- Market mechanisms
- Digital agriculture
- These initiatives need to reach farmers at the **last mile**.

Conclusion

The Centre's decision to send teams to **Karnataka and Maharashtra** comes amid concerns over drought, water scarcity and changing weather patterns. The Rabi 2026 strategy focuses on **water-based crop planning, timely sowing, quality seeds, pulses and oilseeds, procurement, balanced fertiliser use, natural farming, digital agriculture and regular monitoring**. These measures are aimed at strengthening agricultural resilience, improving **farmers' incomes** and supporting **food security**.

Gucchi Mushroom



Gucchi mushroom, a rare Himalayan wild mushroom, was featured at the **BRICS Summit 2026**, highlighting the unique food and forest products of the Himalayan region.

Why in News?

The inclusion of Gucchi at the summit brought attention to this **high-value wild mushroom**, which is difficult to cultivate commercially and is traditionally collected by Himalayan communities.

About Gucchi Mushroom

- **Scientific name:** *Morchella esculenta*
- It is a **wild edible mushroom** found mainly in the Himalayan region.

- **Distribution:** Jammu and Kashmir, Himachal Pradesh and Uttarakhand.
- It grows mainly in **mountainous coniferous forests**.

Key Features

- It has a distinctive **honeycomb-like cap**, ranging from yellowish to dark brown.
- The **stem is generally pale and hollow**.
- Its growth depends on a combination of **soil conditions, moisture, temperature changes and seasonal snowmelt**.
- Gucchi is difficult to **cultivate on a large scale**.
- Local mountain communities traditionally **collect it by hand**, often from steep and difficult terrain.
- Its appearance at a particular location can vary from year to year, making collection unpredictable.
- Fresh mushrooms contain high moisture, so they are generally **dried for preservation and storage**.
- Drying greatly reduces their weight and concentrates their value.

Economic and Nutritional Significance

- Gucchi is considered one of the **most expensive edible mushrooms** because of its rarity and difficult collection.
- It contains **protein, dietary fibre and antioxidant compounds**.
- It is also reported to contain **vitamin D**.

Taklamakan Desert



For decades, China has been developing **vegetation belts around the Taklamakan Desert** to reduce **desertification and the movement of shifting sand**.

Why in News?

China has been planting **trees and other vegetation** along the desert's edges to create a protective barrier against **sand movement and desertification**.

About Taklamakan Desert

- The **Taklamakan Desert** is located in **southwestern Xinjiang, northwest China**.
- It lies within the **Tarim Basin**, China's largest inland basin.
- **Area:** Approximately **3.2 lakh sq. km**.
- It stretches about **960 km east–west** and reaches a maximum width of around **420 km**.
- It is the **world's second-largest shifting-sand desert**.
- Around **85% of its area consists of crescent-shaped sand dunes**.

Geographical Features

- The desert is surrounded by major mountain systems:
  - **Tian Shan** – north
  - **Kunlun Mountains** – south
  - **Pamir Mountains** – west
- The **Gobi Desert** lies to its east.
- The **Lop Nur Basin** lies toward the eastern side.
- The **Tarim River** flows along the northern edge of the desert.

Climate

- It has a **continental desert climate**.
- It receives **very little rainfall**.
- The region experiences **strong winds** and large variations between **daytime and nighttime temperatures**.
- Constant movement of sand has gradually expanded the desert towards the south over long periods.

Desertification Control

- China has been using **vegetation belts** around the desert to:
  - Reduce **sand movement**.
  - Control **desertification**.
  - Protect nearby settlements and infrastructure.
- The effort is an example of using **vegetation-based measures to control desert expansion and shifting sands**.

Djibouti Signs Artemis Accords



Why in News?

The **Republic of Djibouti** became the **72nd country** and the **eighth African nation** to sign the **Artemis Accords** at NASA Headquarters in Washington.

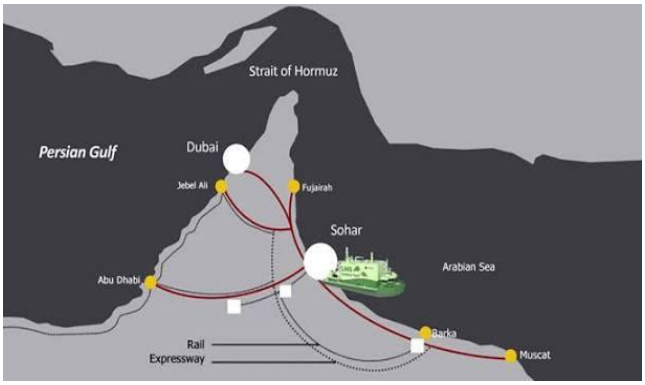
About Djibouti

- **Location:** Djibouti is a country in the **Horn of Africa**, in East Africa.
- It lies near the meeting point of the **Red Sea, Gulf of Aden and East African Rift system**.
- **Borders:**
  - **Eritrea** – north
  - **Ethiopia** – west and southwest
  - **Somalia** – south
- It has coastlines along the **Red Sea and Gulf of Aden**.
- **Capital:** Djibouti City

Geographical Features

- **Climate:** Dry tropical climate with **high temperatures and evaporation** throughout the year.
- **Highest Point: Mount Moussa Ali** – about **2,028 m**.
- **Danakil Depression:** A highly **arid and harsh landscape** extending through parts of Djibouti.
- **Rivers:** Djibouti has no major permanent rivers. **Temporary streams and wadis** may carry water during rainy periods.
- **Natural Resources: Salt, petroleum, gold, clay, marble, pumice, gypsum and diatomite**.

Sohar Port



Why in News?

With the **Strait of Hormuz** facing disruption due to Iran-U.S. hostilities, Oman has offered India investment opportunities at **Sohar Port**. The proposal could help India maintain access to **energy supplies from the Persian Gulf** through an alternative route.

About Sohar Port

- **Location:** Northern Oman, on the **Gulf of Oman**.
- It is a major **deep-sea port** in the Middle East.
- It is located about **160 km south of the Strait of Hormuz**, between **Dubai and Muscat**.
- Its location makes it important for trade between the **Gulf region, Indian subcontinent and East Africa**.

Major Functions

Sohar Port handles:

- **Dry bulk**
- **Break bulk**
- **Liquid bulk**
- **Container cargo**

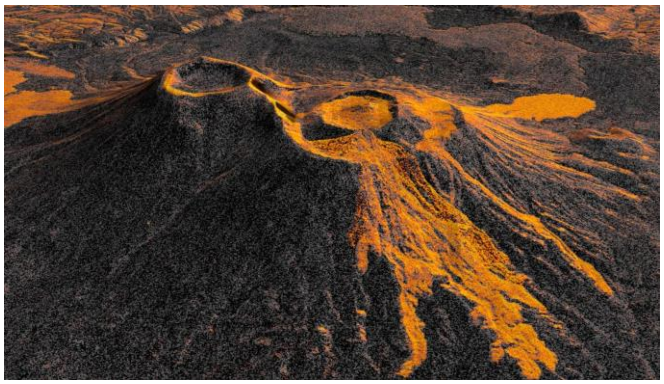
Management

- The port is operated by **Sohar Industrial Port Company (SIPC)**.
- SIPC is a **joint venture between the Government of Oman and the Port of Rotterdam**.

Sohar Freezone

- A **free economic zone** is located next to the port.
- It supports industries such as:
  - **Petrochemicals**
  - **Metals**
  - **Energy**
- The combination of the port and free zone makes Sohar an important **industrial and logistics hub**.

Krasheninnikov Volcano and NISAR Mission



Why in News?

The **NASA-ISRO NISAR satellite** recently captured detailed radar images of Russia's **Krasheninnikov volcano**, showing the spread of lava across the **Kamchatka Peninsula**.

Krasheninnikov Volcano

- **Location:** An active **stratovolcano** located in the **Eastern Kamchatka Peninsula, Russia**.
- **Ring of Fire:** Kamchatka lies along the **Pacific Ring of Fire**, a major zone of volcanic and seismic activity.
- The Kamchatka Peninsula has **114 volcanoes** that have erupted during the **Holocene Epoch** (around 12,000 years ago to the present).
- **Elevation:** The summit reaches **1,856 metres**.
- It lies within a **9 × 11 km caldera** formed by a collapse around **39,000 years ago**.
- **Volcanic Structure:**
    - The complex consists of **two adjacent stratovolcano cones**.
    - The southern cone has a crater around **800–900 metres** wide.
    - The northern cone is younger and has a **telescopic structure**.
    - Smaller craters and lava cones are present within the northern cone.
    - Both cones are covered with **volcanic ejecta**.

Volcanic Activity

- Its previous eruption occurred around **400–600 years ago**.
- **2025 Eruption:** The volcano erupted on **2 August 2025**, three days after a nearby **magnitude 8.8 earthquake**.
- Ash emissions reached an altitude of around **20,000 feet**.

NISAR Mission

- **NISAR** stands for **NASA-ISRO Synthetic Aperture Radar**.
- It is a joint **Earth-observation satellite mission of NASA and ISRO**.
- It uses advanced **radar technology** to monitor changes on Earth's surface.
- **Launch: 30 July 2025**.
- **Launch Vehicle:** ISRO's **GSLV-F16**.
- **Launch Site: Satish Dhawan Space Centre, Sriharikota**.
- It is the first major joint mission between **India and the US** focused on radar-based Earth observation.

Key Features of NISAR

- Maps the **entire Earth's land and ice surfaces every 12 days**, enabling frequent and precise observations.
- Uses **two radar frequencies**:
    - **L-band** – provided by NASA.
    - **S-band** – provided by ISRO.
- These radar systems can detect changes in the Earth's surface of **less than a centimetre**.
- Can monitor:
    - **Earthquakes**
    - **Volcanic activity**
    - **Land deformation**
    - **Environmental changes**
- Its observations can support **disaster response, hazard assessment and resource management**.

Gulbarga Tur Dal



Why in News?

The **Agricultural and Processed Food Products Export Development Authority (APEDA)** recently flagged off a shipment of **1 metric tonne of GI-tagged Gulbarga Tur Dal** to the **Maldives**.

Gulbarga Tur Dal

- **Origin:** Associated with the **Kalaburagi region of Karnataka**.
- **GI Tag:** Received **Geographical Indication (GI) registration in 2019**.
- **Importance:** Known for its **distinctive taste and quality** and is an important agricultural product of the region.

Tur Dal

- **Scientific/Crop Type:** Tur dal is obtained from **pigeon pea**, an important **pulse and legume crop**.
- **Nutritional Importance:** It is a major source of **dietary protein** and is widely consumed as dal in India.
- **Cultivation:** Mainly grown in **tropical and semi-arid regions**.
- **Intercropping:** It is commonly grown as an **intercrop with several other crops**.

Climatic Conditions

- **Rainfall:** Requires around **600–650 mm annual rainfall**.
    - Moist conditions are needed during the first **8 weeks**.
    - Relatively dry conditions are preferred during **flowering and pod development**.
- **Temperature:**
    - **Rainy season:** 26–30°C.
    - **Post-rainy season:** 17–22°C.
- **Soil:** Can grow in different soils, but **sandy loam and loam soils** are considered most suitable.
- **Light Requirement:** Sensitive to **low solar radiation** during pod development. Cloudy conditions during flowering can result in **poor pod formation**.

Major Diseases

Important diseases affecting pigeon pea include:

- **Wilt**
- **Sterility Mosaic Disease**
- **Phytophthora Blight**
- **Alternaria Blight**
- **Powdery Mildew**

Health Benefits

Tur dal contains several nutrients, including:

- **Protein**
- **Thiamine**
- **Riboflavin**
- **Niacin**
- **Vitamin B6**
- **Folate**
- **Vitamin A**
- **Calcium**
- **Iron**
- **Zinc**
- **Magnesium**

It also has a **low glycaemic index**.

Major Producing States

Major tur dal-producing states mentioned are:

- **Uttar Pradesh**
- **Madhya Pradesh**
- **West Bengal**
- **Bihar**
- **Jharkhand**

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Internal Security

Rudra Raptors Exercise Conducted in Jaisalmer



Why in News?

- The **Indian Army's Konark Corps** recently conducted the **'Rudra Raptors' exercise** in **Jaisalmer, Rajasthan**.
- The exercise focused on improving coordination between **air and ground combat forces** in desert warfare conditions.

About Rudra Raptors Exercise

- It is a **high-intensity joint military exercise** conducted by the **Konark Corps of the Indian Army**.
- The exercise was held in the **forward areas of the desert sector of Jaisalmer**.
- **Theme:** *"One team, one purpose, absolute battlefield dominance"*.

Major Participants

- The exercise involved the **'Thar Raptors'**, an elite helicopter formation.
- It included **AH-64E Apache attack helicopters**.
- The **'Black Mace' Brigade** participated with its **armoured and ground combat elements**.

Black Mace Brigade

- The **Black Mace Brigade** is a **Rudra all-arms formation** under the Konark Corps.
- The Army had validated this combined-arms formation during **Exercise Akhand Prahar in 2025**.
- It brings together:
- **Armour**
- **Mechanised Infantry**
- **Artillery**
- **Air Defence**
- **Support elements**
- These elements operate under a **single headquarters** to enable integrated combat operations.

Objectives of the Exercise

- To establish better **synergy between aerial and ground combat capabilities**.
- To validate **integrated battle strategies** under realistic battlefield conditions.
- To improve coordination between **attack helicopters and tanks**.
- To demonstrate the ability of aerial and ground forces to conduct **coordinated operations**.

Key Highlight

- During the exercise, **Apache attack helicopters and tanks operated together**.
- The joint training demonstrated coordinated action between **airborne and ground-based military assets** in a desert battlefield environment.

Exercise Veer Guardian 2026



Why in News?

- A contingent of the **Japanese Air Self-Defense Force (JASDF)** recently arrived in **Jodhpur, Rajasthan** for **Exercise Veer Guardian 2026**.
- The exercise will bring the **Indian Air Force (IAF)** and JASDF together for joint air-combat training.

About Exercise Veer Guardian

- It is a **bilateral air exercise** between:
- **Indian Air Force**
- **Japanese Air Self-Defense Force (JASDF)**
- The **first edition** was held in **2023** at **Hyakuri Air Base, Japan**.
- The exercise aims to improve:
- **Interoperability**
- **Operational synergy**
- **Mutual understanding**
- Defence cooperation between **India and Japan**

Exercise Veer Guardian 2026

- **Location:** Jodhpur, Rajasthan
- The exercise focuses on improving the **tactical capabilities** of participating units.
- It will also strengthen **mutual understanding** between the two air forces.
- Training activities will include **air-combat manoeuvring**.
- Personnel from both countries will train together in **complex operational situations**.

Japanese Participation

- Japan is participating with:
- **3 Mitsubishi F-2A fighter aircraft**
- Around **110 personnel**
- The aircraft belong to the **8th Air Wing** based at **Tsuiki Air Base**.
- **Significance:** This is the **first participation of Mitsubishi F-2 fighter aircraft in a military exercise in India**.

Germany Tests LORA Missile in North Atlantic



Why in News?

- **Germany** recently conducted a successful test of the **LORA missile** in the **North Atlantic**.
- The test was confirmed by German military officials.

About LORA Missile

- **LORA** stands for **Long Range Artillery**.
- It is a **short-range, road-mobile ballistic missile**.
- The missile can be launched from both **ground and sea-based platforms**.
- It was **developed and is operated by Israel**.
- It is believed to have entered **Israeli service in 2007**.
- It is designed to attack **high-value targets deep inside enemy territory**.

Key Features

- **Type:** Single-stage ballistic missile
- **Propulsion:** Solid-propellant
- **Launch platforms:** Ground and sea
- **Length:** 5.2 metres
- **Diameter:** 0.624 metres
- **Launch weight:** Approximately 1,600 kg
- **Maximum payload:** Up to 600 kg
- **Range:** Around **280 km**

Warhead

- It can carry:
- A single **High Explosive (HE) warhead**
- **Submunitions**

Guidance System

- LORA uses a combination of:
- **Inertial Navigation System (INS)**
- **Global Positioning System (GPS)**
- **TV-based terminal guidance**
- It may also have the ability to perform **in-flight manoeuvring**, improving its ability to reach designated targets.

RVV-BD Missile



Why in News?

The **Ministry of Defence** is evaluating a proposal to equip the **Su-30MKI fighter fleet** of the Indian Air Force with Russian-made **RVV-BD long-range air-to-air missiles** to strengthen its **beyond-visual-range (BVR)** combat capability.

About RVV-BD Missile

- The **RVV-BD** is a Russian-developed **beyond-visual-range air-to-air missile**.
- It is the **export version of the R-37M missile**, one of the world's longest-range air-to-air missiles.
- It is designed to target high-value aerial assets such as:
- **AEW&C aircraft**
- Airborne command platforms
- Other critical aerial assets

Key Features

- **Range:** Up to **200 km** in the forward hemisphere.
- **Speed:** Around **Mach 6**.
- **Warhead: 60 kg high-explosive fragmentation warhead**.
- **Guidance:** Active-passive radar homing head, **inertial guidance system** and **radio correction link**.
- **Fuze:** Radio proximity fuse and contact sensor.
- **Length:** About **4 metres**.
- **Weight:** Around **510 kg**.
- It can be mounted under the **Su-30MKI** while maintaining the aircraft's agility.

Samudra Laksamana Exercise



Why in News?

INS Mysore recently arrived at **Lumut Naval Base, Malaysia**, to participate in the bilateral naval exercise **Samudra Laksamana 2026**.

Exercise Samudra Laksamana

- It is a **bilateral naval exercise** between the **Indian Navy** and the **Royal Malaysian Navy (RMN)**.

- It aims to strengthen **maritime cooperation** and improve **interoperability** between the two navies.
- The 2026 edition involves:
- **INS Mysore** — Indian Navy
- **KD Lekir** — Royal Malaysian Navy
- **KD Gagah Samudera** — Royal Malaysian Navy

INS Mysore

- **INS Mysore (D60)** is a **Delhi-class guided missile destroyer** of the Indian Navy.
- Built by **Mazagon Dock Limited, Mumbai**.
- Commissioned on **2 June 1999**.
- It is designed for **multi-role naval operations**, including:
- **Air defence**
- **Anti-surface warfare**
- **Anti-submarine warfare**
- **Fleet escort**

Key Features

- **Displacement:** 6,835 tonnes
- **Length:** 535 feet
- **Maximum speed:** 32 knots
- **Range:** 5,000 nautical miles
- Equipped with advanced **radar, communication and sensor systems**.
- Has a **variable-depth sonar** for underwater detection.
- Can operate **two medium helicopters**.
- Its weapons include **surface-to-surface missiles, surface-to-air missiles, guns, close-in weapon systems, anti-submarine rockets and torpedoes**.

International Atomic Energy Agency (IAEA)

Why in News?

The **International Atomic Energy Agency (IAEA)** recently reported **Iran to the UN Security Council** for the first time in 20 years.

About IAEA

- The **IAEA** is the leading international organisation for **scientific and technical cooperation in the nuclear field**.
- It was created following U.S. President **Dwight D. Eisenhower's "Atoms for Peace"** address to the UN General Assembly in **1953**.
- The **IAEA Statute** was approved in **1956** and came into force in **1957**.
- It is an **autonomous organisation within the UN system**.
- It reports to both the **UN General Assembly (UNGA)** and the **UN Security Council (UNSC)**.
- **Headquarters:** Vienna, Austria.
- **Members:** 180 states.

Objectives

- Promote the **peaceful use of nuclear energy**.
- Prevent the diversion of nuclear technology for **nuclear weapons purposes**.
- Promote **nuclear safety and security**.
- Verify that countries are complying with their **nuclear non-proliferation commitments**.

Key Functions

- Conducts **inspections and monitoring** of nuclear programmes.
- Helps countries implement **nuclear safeguards**.
- Develops and promotes **nuclear safety standards**.
- Supports the peaceful use of nuclear technology in areas such as **energy, health and agriculture**.
- Under the **NPT**, the IAEA plays a key role in verifying that nuclear material is not diverted to weapons programmes.

Governance Structure

- **General Conference:** Includes all member states and meets annually to approve the budget and decide broad policies.
- **Board of Governors:** Consists of **35 members** and oversees important functions such as safeguards and appointment of the Director General.
- **Secretariat:** Led by the **Director General** and responsible for the organisation's day-to-day functioning.

Sagar Manthan Ocean Research Vessel



Why in News?

The Union Minister for Earth Sciences recently launched India's advanced **Ocean Research Vessel (ORV) Sagar Manthan** at **Rishi Bankim Shipyard, Kolkata**.

About ORV Sagar Manthan

- It is an **indigenous, all-weather ocean research vessel**.
- Designed and built by **Garden Reach Shipbuilders & Engineers (GRSE)** for the **National Centre for Polar and Ocean Research (NCPOR)**.
- It has been constructed under **Vertical-4: Deep Ocean Survey and Exploration** of the **Deep Ocean Mission (DOM)**.
- Designed to operate in extreme oceanic conditions, including the **Southern Ocean**.
- It has a projected service life of **30 years**.

Key Features

- Equipped with **dynamic positioning** for precise movement and station keeping.
- Uses **multibeam bathymetry** for detailed mapping of the seafloor.
- Equipped with **multichannel seismic systems** and **sub-bottom profiling** for studying geological structures beneath the seabed.
- Has **weather radar**, **drop keels**, and facilities to deploy:
- **Remotely Operated Vehicles (ROVs)**
- **Autonomous Underwater Vehicles (AUVs)**

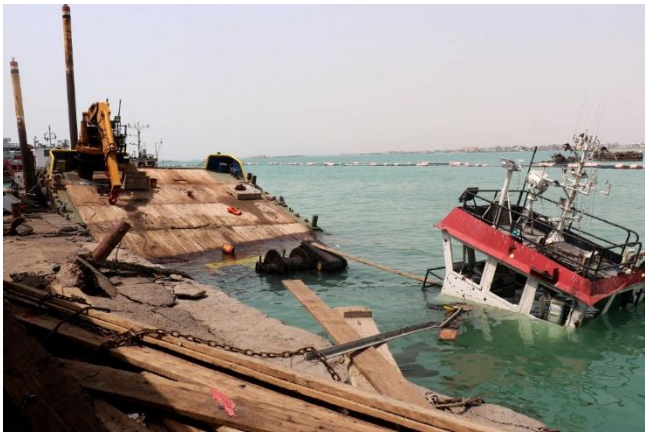
Research Objectives

- Explore **mid-oceanic ridges** in the Indian Ocean.
- Identify **multi-metal hydrothermal sulphide mineralisation**.
- Establish **environmental baselines** for deep-ocean activities.
- Collect **upper-air atmospheric data**.
- Conduct **CTD profiling** to study **conductivity, temperature and depth** of ocean water.

Certification

- Built according to international regulatory standards.
- Has **dual-class certification** from:
- **Indian Register of Shipping (IRS)**
- **American Bureau of Shipping (ABS)**.

Mocha Port



Why in News?

The Iran-aligned **Houthis** recently took control of the Yemeni port city of **Mocha**, expanding their presence along the **Red Sea coast**.

About Mocha Port

- **Mocha (Mokha)** is a historic port town in **southwestern Yemen**, located on the **Red Sea**.
- It is famous for its historical role as a major **coffee-exporting centre**. The word **"mocha"** is associated with the port's coffee trade.
- It is located near the **Bab el-Mandeb Strait**, a strategically important maritime chokepoint connecting the **Red Sea with the Gulf of Aden**.
- Mocha lies about **75 km north of Perim (Mayun) Island**.

Historical Significance

- Mocha became an important **trade centre** from the medieval period.
- It was a major export centre for **Yemeni coffee and myrrh**.
- Indian, Egyptian and European traders visited the port.
- Trading establishments were maintained by the **British East India Company** and **Dutch East India Company**, among others.
- The town was under **Ottoman influence** during different periods.

- The modern port was established in **1955**.

Decline of the Port

- Mocha's importance declined due to:
- Conflicts involving **European powers and the Ottoman Empire**.
- Competition from coffee production in **Java (Indonesia)**.
- Growth of the **South American coffee industry**.
- Today, Mocha is mainly a **minor logistics and military hub** compared with Yemen's major ports such as **Aden and Hodeidah**.

Strategic Importance

- Its location near **Bab el-Mandeb** gives Mocha strategic importance for **Red Sea shipping and maritime security**.
- Bab el-Mandeb connects the **Red Sea** with the **Gulf of Aden**, making the area important for international trade and energy transportation.

S-71K Kovyor Missile



Russia recently unveiled the **S-71K Kovyor**, an air-launched stand-off weapon designed for the **Su-57E fifth-generation fighter**, at the El Alamein International Airshow in Egypt.

About S-71K Kovyor

- It is a **Russian air-launched cruise missile** designed mainly for the **Su-57E** fighter aircraft.
- It is a **stand-off weapon**, allowing the aircraft to attack targets from a distance without directly entering the target's immediate air-defence zone.

Key Features

- The missile has a **flattened, aircraft-like body** rather than the usual cylindrical shape.
- It has an **asymmetric design**, with:
- A trapezoidal nose
- A **chin-mounted optical sensor**
- Swept-back wings
- Inverted V-shaped tail surfaces
- It uses **three internal fuel tanks and a turbojet engine**, allowing it to maintain powered flight after launch.
- **Estimated range:** Around **300–350 km**.
- **Guidance:** Primarily based on an **inertial navigation system**.
- It is reportedly designed mainly against **pre-programmed fixed targets**, rather than independently identifying targets during the final stage of flight.
- **Warhead:** A **250-kg OFAB-250-270 high-explosive fragmentation warhead**.
- It can reportedly fly at around **8,200 m altitude** before descending to very low levels:
- **20–75 m over land**
- **5–15 m over water**
- Such low-level flight can make **continuous radar tracking** more difficult.

INS Kulish



Indian Navy's **guided missile corvette INS Kulish** recently reached **Ream Naval Base, Cambodia**, as part of the **Eastern Fleet's operational deployment**.

About INS Kulish

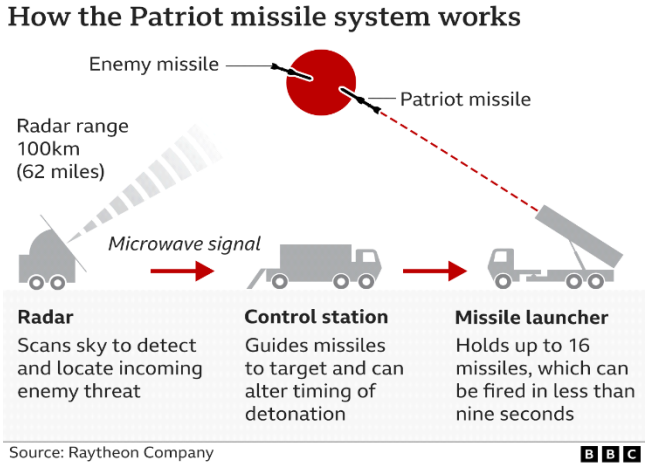
- **Class:** Kora-class guided missile corvette.
- **Meaning:** *Kulish* means **"Thunderbolt"** in Sanskrit.
- **Built by: Garden Reach Shipbuilders and Engineers (GRSE)**, India.
- **Commissioned: 2001**.
- **Displacement:** About **1,500 tonnes**.
- **Propulsion:** Powered by **two diesel engines**.
- **Maximum speed:** Around **25 knots**.
- **Operational range:** Up to **2,500 nautical miles** without replenishment.

- **Helicopter capability:** It can operate a **Chetak helicopter**, increasing its operational flexibility.

Weapons and Capabilities

- Its primary anti-ship weapon is the **Russian-origin Kh-35 anti-ship cruise missile**.
- It is equipped with modern **sensors and electronic systems**.
- Its weapon systems include:
- **Surface-to-surface missiles**
- **Long-range guns**
- **Surface-to-air missiles** for air defence
- It is designed for operations involving **surface warfare, maritime surveillance and fleet support**.

Patriot Missile System



Why in News?

Lockheed Martin recently received critical components from **General Motors** for Patriot interceptors. The development highlights efforts to increase **Patriot missile production** amid rising international demand.

About Patriot Missile System

- **Patriot** stands for **Phased Array Tracking Radar for Intercept on Target**.
- It is a **mobile surface-to-air missile defence system** developed in the United States.
- It was originally developed by **Raytheon**.
- It can defend against **aircraft, cruise missiles and tactical ballistic missiles**, depending on the interceptor used.
- It is the **most advanced air-defence system of the U.S. Army**.
- The system was first used in combat during the **1991 Gulf War**.
- It was later used during the **2003 U.S. invasion of Iraq**.
- The system is currently operated by **19 countries**, including the U.S., Germany, Poland, Ukraine, Japan, Qatar, Saudi Arabia and Egypt.

Key Features

- A basic **Patriot battery** includes:
- **Phased-array radar**
- **Engagement Control Station**
- Computers
- Power-generation equipment
- Up to **8 launchers**
- Each launcher can carry **4 ready-to-fire missiles**.
- Its radar can detect and track targets at a range of **over 150 km** and can track up to **100 potential targets simultaneously**.
- It uses **Track-Via-Missile (TVM)** guidance, with mid-course corrections transmitted from the engagement control centre.
- Its capabilities vary according to the interceptor:
- **PAC-2:** Uses a **blast-fragmentation warhead**.
- **PAC-3:** Uses **hit-to-kill technology**, directly destroying the incoming target through kinetic impact.
- Depending on the variant, Patriot interceptors can reach **altitudes above 24 km**.

Next-Generation Missile Vessels (NGMV)



Why in News?

Cochin Shipyard Limited (CSL) has laid the keel for the first of **six Next-Generation Missile Vessels (NGMVs)** being built for the Indian Navy. This marks CSL's entry into the construction of **advanced weapon-intensive naval platforms**.

About NGMVs

- NGMVs are **high-speed, heavily armed vessels** designed for maritime strike and anti-surface warfare.
- **Six vessels** are being constructed by **Cochin Shipyard Limited**.
- **Project cost:** ₹9,805 crore.

- **Delivery:** Expected to begin from **March 2027**.

Role

The vessels will provide:

- **Offensive strike capability** against enemy warships, merchant vessels and selected land targets.
- **Anti-surface warfare** and maritime strike capability.
- **Sea-denial capability**, especially around important **maritime chokepoints**.
- Support for **local naval defence** and protection of **offshore assets** during defensive operations.

Key Features

- **Propulsion:** Powered by the **LM2500 marine gas turbine** manufactured by General Electric.
- **Maximum speed:** Around **33 knots (61 km/h)**.
- **Crew:** Approximately **80 personnel**.
- **Endurance:** Can remain at sea for about **10 days**, with longer deployment possible through tanker refuelling.
- Equipped with:
- **Surface-to-surface missiles**
- **Anti-missile defence systems**
- **Air-surveillance radar**
- **Fire-control radar**
- Advanced **integrated platform management systems**
- Modern power generation and damage-control systems

Primary Weapon

- The main strike weapon will be the **BrahMos supersonic cruise missile**.
- BrahMos provides the vessels with a **long-range anti-surface strike capability**.

INS Trishul



Why in News?

The **Indian Navy's INS Trishul** recently made a **port call at Alexandria, Egypt**, as part of its operational deployment.

About INS Trishul

- **INS Trishul** is a **Talwar-class guided missile frigate** of the Indian Navy.
- It was **commissioned in 2003**.
- It is designed for **multi-dimensional maritime operations**.
- The ship is **125 metres long** and has a displacement of around **3,700 tonnes**.
- It can achieve speeds of **over 30 knots** and has an endurance of around **30 days at sea**.
- It incorporates **stealth features** and advanced maritime equipment.

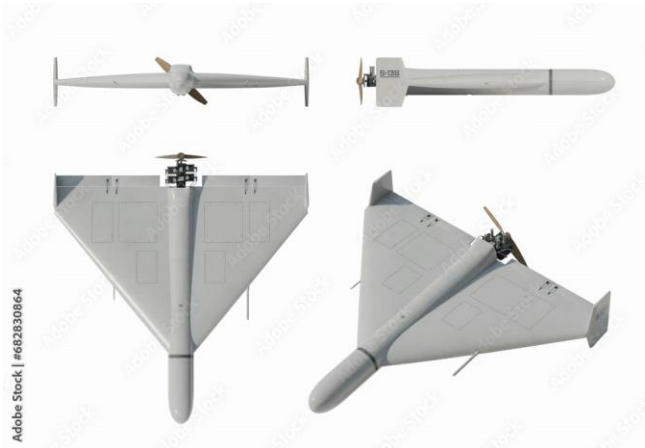
Armament

- INS Trishul was the **second Indian warship** to incorporate the **eight-cell KBSM 3S-14NE Vertical Launcher**.
- It was the first Indian warship to be equipped with the **BrahMos PJ-10 supersonic cruise missile**, jointly developed by **India and Russia**.
- The BrahMos missile can be used against **ships and land-based targets**.

Talwar-Class Frigates

- The **Talwar class** consists of guided missile frigates built in **Russia** under **Indo-Russian cooperation**.
- They are modified versions of Russia's **Krivak III-class frigates**.
- They have a displacement of around **4,000 tonnes** and can reach speeds of about **30 knots**.
- Their major roles include **anti-submarine warfare** and operations against **enemy surface ships**.

Geran-2



Why in News?

New **satellite imagery** has highlighted the expanding production of **Geran-2 drones** at the **Alabuga Special Economic Zone in Tatarstan, Russia**.

About Geran-2

- **Geran-2** is a **long-range one-way attack drone**, commonly described as a **kamikaze drone**.
- It is considered a **Russian-produced version of the Iranian-designed Shahed-136**.
- It is mainly used for **long-range strikes** against strategic infrastructure.
- It provides a **low-cost alternative or complement** to more expensive **cruise and ballistic missiles**.
- Geran-2 drones can be launched in **swarms** to increase the chances of penetrating air-defence systems.
- The reported cost of a Shahed/Geran drone is around **€25,000–€40,000**.

Features of Geran-2

- **Design:** Based on the Shahed-136, with a **delta-wing configuration**, composite honeycomb structure and rear-mounted piston engine.
- **Wingspan:** About **2.5 metres**.
- **Length:** About **3.5 metres**.
- **Engine: 50–90 HP piston engine**.
- **Maximum speed:** Up to **180 km/h**.
- **Flight endurance:** Up to **12 hours**.
- **Warhead:** Around **50 kg**, expandable up to **90 kg** by reducing fuel load.
- **Reported operational range:** Around **2,500 km**.
- **Launch:** Can use **rocket-assisted take-off** or be launched from a moving vehicle.

Navigation and Guidance

- Equipped with navigation systems designed to resist **jamming and spoofing**.
- Uses **Controlled Reception Pattern Antennas (CRPA)** with multiple antennas.
- Includes **3G/LTE modems** for real-time data links.
- Uses improved **inertial navigation systems**.

AASHVAST Lab



Why in News?

The **Indian Army** plans to deploy **six AASHVAST Labs** across the country for mandatory **cybersecurity screening of drones and CCTV systems** to identify hidden vulnerabilities and strengthen defence against cyber threats.

About AASHVAST Lab

- **AASHVAST** stands for **Assessment and Analysis of Electronic Systems Hardware for Vulnerabilities and Security Threats**.
- It is a specialised **testing and validation facility** for identifying security weaknesses in military electronic systems.
- It was developed by a **private firm** for the **Directorate General of Electronics and Mechanical Engineers (DG EME)**.
- It examines both **hardware and software** used in defence systems.

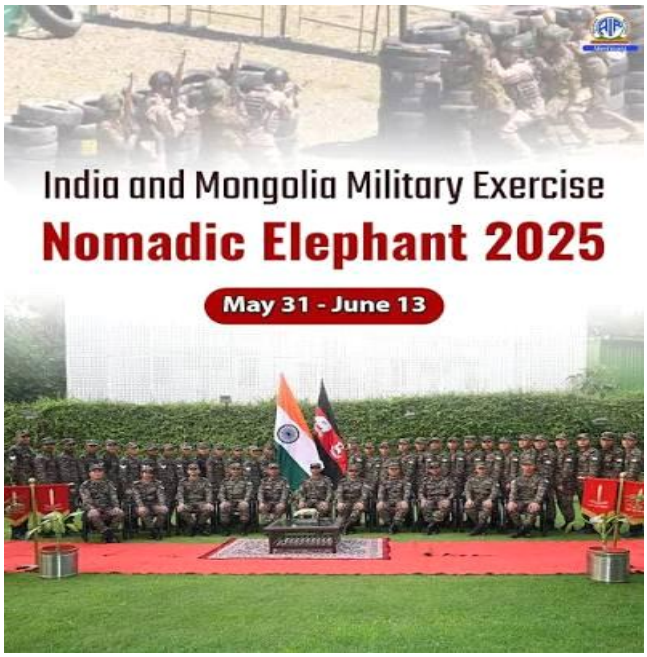
Working of AASHVAST Lab

- The facility can detect around **14 types of vulnerabilities**.
- It examines **drones, communication systems, sensors and other electronic defence equipment**.
- It checks software and **firmware** for hidden security vulnerabilities.
- It can detect:
- **Hidden passwords**
- **Embedded encryption keys**
- **Remote-access tools**
- Unauthorised software or components
- It checks whether drones accept only **manufacturer-approved software updates**.
- It tests how systems respond to **GPS spoofing and jamming**.
- It helps identify vulnerabilities that could allow **enemy interference or unauthorised control** of military equipment.

Significance

- Strengthens the **cybersecurity and resilience** of India's defence infrastructure.
- Helps protect **military drones, CCTV systems, sensors and communication platforms** from hidden vulnerabilities.
- Reduces the risk of **cyberattacks, remote access and electronic interference** during military operations.
- Supports the security of increasingly **digitised and networked defence systems**.

Exercise NOMADIC ELEPHANT



The **18th edition of Exercise NOMADIC ELEPHANT**, the annual **India–Mongolia joint military exercise**, began at the **Foreign Training Node in Pithoragarh, Uttarakhand**.

- **Nature:** It is a **platoon-level bilateral military exercise** conducted alternately in India and Mongolia.
- The previous edition was held in **Ulaanbaatar, Mongolia, during May–June 2025**.
- **Objective:** To improve the ability of the two armies to conduct **Counter-Insurgency and Counter-Terrorism (CI/CT) operations** in **semi-urban and mountainous areas** under a **United Nations mandate**.
- **Participants:** The exercise includes **45 personnel each** from the **Indian Army** and **Mongolian Armed Forces**.

Major Training Activities

- **Cordon and Search Operations**
- **Room Intervention Drills**
- **Special Heliborne Operations**
- **Cyber Security Training**
- **Drone and Counter-Drone Operations**
- Exchange of **operational techniques and best practices**

Significance

- Enhances **defence cooperation** between India and Mongolia.
- Builds **mutual trust and interoperability** between the two armed forces.
- Improves preparedness for **joint operations and UN peacekeeping missions**.

Other India–Mongolia Military Exercise

- **Exercise Khaan Quest:** A **multilateral peacekeeping exercise** hosted by Mongolia, in which India regularly participates.

Mission Pégase 26 and Exercise Tarang Shakti 2026



Why in News?

As part of **Mission Pégase 26**, the **French Air and Space Force** deployed **four Rafale F4 fighters, three A330 MRTT Phénix multi-role tanker transport aircraft and two A400M Atlas aircraft** to **Jodhpur**.

Mission Pégase 26

- **About:** It is the **seventh edition** of France's long-range air projection exercise.
- **Duration: 8 September–15 October 2026**.
- **Distance:** Covers more than **40,000 km**.
- **Force:** Around **300 personnel**, along with:
- 4 **Rafale F4** fighters
- 3 **A330 MRTT Phénix** aircraft
- 2 **A400M Atlas** aircraft
- **Route: Greenland → Canada → Alaska → Japan → South Korea → Indonesia → India → Qatar → Réunion → Egypt**.
- The route connects the **Arctic, Indo-Pacific and Middle East**.
- **Objectives:**
- Improve **operational readiness**.
- Strengthen **strategic partnerships**.
- Support **freedom of air navigation**.
- **India's Role:** India is an important stop on the **Indo-Pacific leg** of the mission.
- The French contingent will participate in **Exercise Tarang Shakti 2026** in India.

Exercise Tarang Shakti 2026

- **About:** A **multinational air combat exercise** hosted by the **Indian Air Force (IAF)**.
- **Venue: Air Force Station, Jodhpur**, and adjoining air bases.
- **Edition: Second edition**.
- **First Edition:** Held in **August–September 2024** in two phases.

Participating Countries

- Seven foreign air forces are participating:
- **United States**
- **France**
- **Germany**
- **Australia**
- **Bangladesh**
- **Sri Lanka**
- **UAE**
- **32 countries** are participating as observers.

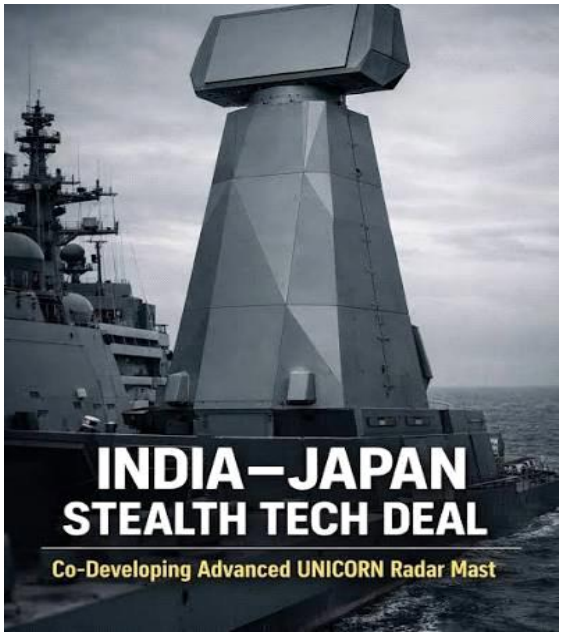
Objectives

- Enhance **interoperability** among participating air forces.
- Provide a platform for **exchange of operational experience**.
- Showcase **India's air combat capabilities**.
- Strengthen international **defence cooperation**.

Major Aircraft Participating

- **US:** F-35
- **France:** Rafale
- **UAE:** F-16
- **Bangladesh:** C-130J
- **India:** Rafale, Mirage-2000, Jaguar, Tejas, MiG-29 and Su-30MKI.

UNICORN Naval Radar System



Why in News?

Japan has recently urged India to **fast-track the official processing** of the agreement related to the **UNICORN (Unified Complex Radio Antenna)** naval radar system.

About UNICORN

- **Also Known As: NORA-50**.
- **Type:** A **shipborne integrated antenna system** designed to improve the **stealth and situational awareness** of warships.
- **Development:** Jointly developed by three Japanese companies:
- **NEC Corporation**
- **Sampa Kogyo K.K.**
- **The Yokohama Rubber Co., Ltd.**
- The system is already used on Japan's **Mogami-class frigates**.

How Does UNICORN Work?

- Conventional warships use multiple **exposed antennas** for radar, communication and electronic warfare.
- These exposed surfaces increase the ship's **radar cross-section (RCS)**, making detection easier.
- UNICORN integrates multiple antennas into a **single enclosed radome** mounted on one mast.
- Its antennas are arranged **vertically inside a bar-shaped dome**, reducing exposed and reflective surfaces.
- It also relocates components such as the **Tactical Air Navigation (TACAN) antenna** to a more protected position.
- A **lightning diverter strip** is installed on the mast for protection against lightning strikes.

Systems Integrated into UNICORN

The unified mast incorporates systems for:

- **Tactical data links**
- **Tactical Air Navigation System (TACAN)**
- **Identification Friend or Foe (IFF)**
- **Electronic Support Measures (ESM)**
- **General communications**

Key Advantages

- Reduces the **radar cross-section** of naval platforms.
- Enhances **stealth characteristics** and reduces electronic signatures.
- Reduces **mutual interference** between closely placed antennas.

- Improves the range for detecting **external radio signals**.
- Simplifies **installation and maintenance**.

India–Japan Cooperation

- India and Japan signed a **Memorandum of Implementation (MOI) on 15 November 2024** for the **co-development of UNICORN masts**.
- It is the **first military hardware co-development pact** between India and Japan.
- **Japan:** Provides design and engineering support.
- **India:** Handles integration, adaptation and co-production through **Bharat Electronics Limited (BEL)**.
- The integrated mast is expected to gradually **replace existing communication and sensor mast systems** across the Indian Navy's fleet.

EDITORIALS

Crux of The Hindu & Indian Express

Internal Security

RAKSHA: India's 10-Year Blueprint for Defence Diplomacy



Why in News?

- **Defence Minister Rajnath Singh** released **RAKSHA** in **New Delhi on 3 September 2026**.
- It provides a **10-year roadmap** for India's defence diplomacy and global strategic partnerships.
- The framework seeks to align **defence diplomacy with foreign policy, economic interests and national security**.

Key Objectives

1. Strategic Partnerships

- Move beyond symbolic military visits and exercises towards **long-term, outcome-oriented partnerships**.
- Focus on areas of **common strategic interest** with partner countries.

2. Military Cooperation

- Expand cooperation through:
- **Joint training**
- Military education
- Exercises
- Professional exchanges
- Institutional partnerships
- Aim: improve **interoperability** and build long-term military relationships.

3. Defence Industrial Cooperation

- Promote:
- **Co-development**
- **Co-production**
- **Technology transfer**
- Defence supply-chain integration
- Supports the **Atmanirbhar Bharat** objective in defence manufacturing.

4. Defence Exports

- Defence exports reached a record **₹38,424 crore in FY 2025–26**.
- RAKSHA seeks to make defence exports an important instrument of **foreign policy and strategic engagement**.
- Indian companies are increasingly supplying:
- **Missiles and ammunition**
- Artillery systems
- Patrol vessels
- Radars
- Electronic systems

5. Maritime Security

- Strengthen India's role as a **security partner in the Indo-Pacific**.
- Cooperation will focus on:
- **Maritime exercises**
- Maritime domain awareness
- Capacity building
- Humanitarian assistance
- Regional maritime security

6. Capacity Building

- India will expand assistance to partner countries through **training and institutional support**.

- This can create long-term relationships between India and foreign armed forces.

7. Defence Diplomacy as Foreign Policy

- RAKSHA links defence engagement with broader:
- **Foreign policy objectives**
- Economic interests
- National security
- Defence cooperation is therefore being treated as a **strategic diplomatic instrument**, rather than merely military engagement.

8. Humanitarian Assistance & Disaster Response

- Indian armed forces increasingly assist neighbouring countries during **natural disasters and emergencies**.
- This strengthens India's image as a **reliable first responder and trusted security partner**.

9. Global Defence Partnerships

The framework covers India's engagement across:

- **Indo-Pacific**
- Europe
- West Asia
- Africa
- Other strategic regions

It seeks to identify areas of **mutual strategic convergence**.

10. Promotion of Indian Defence Industry

- Defence diplomacy will help Indian companies access **international markets**.
- Government-to-government engagement can:
- Build buyer confidence.
- Facilitate defence deals.
- Open new markets for Indian military products.

Recent Example

- India has expanded defence cooperation with **Indonesia**, including agreements involving:
- **BrahMos supersonic cruise missiles**
- **Astra Mk-1** beyond-visual-range air-to-air missiles.

Significance for India

- **Strategic:** Strengthens India's position as a security partner.
- **Economic:** Opens international markets for Indian defence industries.
- **Technological:** Encourages technology partnerships and co-development.
- **Diplomatic:** Uses defence cooperation to deepen bilateral relationships.
- **Indo-Pacific:** Enhances India's role in maintaining regional maritime security.
- **Self-reliance:** Supports **Atmanirbhar Bharat** by promoting indigenous defence production and exports.

Challenges

- Balancing defence partnerships with **India's strategic autonomy**.
- Managing technology-sharing and export-related sensitivities.
- Ensuring defence diplomacy delivers **long-term outcomes rather than symbolic engagement**.
- Competing with established global defence suppliers.

Defence Acquisition Council has approved acquisition proposals worth Rs. 1.1 Lakh crore

Defence Acquisition Council (DAC) approved major military procurements for the armed forces. The Ministry of Defence stated that DAC has accorded the **Acceptance of Necessity (AoN) for the following:**

- Chemical, Biological, Radiological & Nuclear (CBRN) Recce vehicles
- High Mobility Vehicles
- Advanced Light Helicopters (ALH)
- Self Propelled Mechanical Mine Layers (MML)
- Trawl Tanks
- Sarvatra Bridge System
- Arudhra Radars
- Marine Gas Turbines

Out of the total AoNs accorded, 98% of procurements will be made from Indian industry.

Is Grant of AoN = Final Order?

No. The grant of AoN is the first step in defence procurement. After the grant of AoN, the formal acquisition process begins. This includes Request for Proposals, Field evaluations, Commercial biddings & contract negotiations.

Equipments & their capabilities

S. No.	Equipment	Capability
1	CBRN recce vehicles	Detecting, identifying, monitoring & marking areas contaminated with CBRN agents
2	HMVs	Enhance operational capabilities, logistics support & mobility in challenging terrains.
3	MMLs	Achieve the desired operational capability in terms of fast & responsive minelaying in difficult terrains.

4	ALHs	Execute complex missions across all terrains and operational situations.
5	Trawl Tanks & Bridge systems	To provide composite crossings to fighting formations during operations in varied terrains.
6	Arudhra Radar	It has electronic steering in both azimuth & elevation for surveillance, detection & tracking of aerial objects. It replaces the existing air route surveillance radars at various Naval stations.
7	Marine Gas Turbines	It is a warship propulsion system.

Approval was also accorded for procuring **Ground-Based Multi-Purpose Jammer (GBMPJ)** and installing **Defence Forces Secure Access Card (DEFSAC) System.**

The GBMPJ will provide effective jamming against radars of adversaries and DEFSAC will replace existing paper based Identity Card/Passes/Permits with an interoperable Radio Frequency Identification-based smart cards system.

About DAC:

It is the apex decision making body for **capital acquisitions** for armed forces. (Army, Navy, Airforce & Coast Guard)

Establishment: It was **established in 2001** after the Kargil War on the recommendations of the Group of Ministers on reforming the "National Security System".

Members of DAC:

- It is chaired by the Defence Minister.
- Chief of Defence Staff
- Chiefs of Army, Navy, Air Force & Indian Coast Guard.

U.S.–Iran Conflict Escalation: Strait of Hormuz at the Centre



Why in News?

- The **U.S.–Iran conflict** has entered a new phase after:
- Iranian attacks on U.S. warships near the **Strait of Hormuz**.
- U.S. strikes on **three Iranian oil tankers** in Gulf waters.
- The escalation follows the collapse of the **June 17 Islamabad MoU**, which aimed to resolve the conflict through negotiations.

Recent Escalation

- The U.S. initially shifted from direct military action towards **economic warfare**, including:
- New sanctions.
- Tightening of the naval blockade of Iranian ports.
- The U.S. attempted to move oil tankers through a **southern route along the Omani coast**.
- Iran continued attacking vessels using this route.
- The U.S. subsequently resumed strikes, followed by Iranian attacks on U.S. bases in:
- **Kuwait**
- **Bahrain**
- **Jordan**

Latest Development

- Iran attacked U.S. military vessels for the first time in months, apparently attempting to **break the blockade**.
- The U.S. retaliated by targeting Iranian oil tankers.
- Iran's **Islamic Revolutionary Guard Corps (IRGC)** claimed attacks on six Gulf vessels:
- 3 tankers
- 3 U.S.-linked ships

Why is the Strait of Hormuz Important?

- The **Strait of Hormuz** has become the central theatre of the conflict.
- It is a crucial maritime chokepoint for **global energy trade**.
- Iran's continued ability to threaten shipping has:
- Increased risks to global oil supplies.
- Raised transportation and insurance costs.
- Threatened wider global supply chains.
- The conflict therefore has implications far beyond the U.S. and Iran.

Major Strategic Takeaways

1. No Clear U.S. "Theory of Victory"

- Neither:

- **Military strikes**, nor
- **Economic sanctions/blockade**
- has forced Iran to change its position.
- The Strait remains insecure despite sustained U.S. pressure.

2. Iran's Counter-Strategy

- Iran has become increasingly **assertive despite economic pressure**.
- Tehran appears to be targeting U.S. military capabilities and presence in its immediate neighbourhood.
- The article describes this as a **"debasification" strategy** aimed at pushing U.S. forces away from Iran's periphery.

3. Risk of Escalation

- Both sides are seeking **escalation dominance**.
- Repeated cycles of: **U.S. strike → Iranian retaliation → U.S. counter-strike**

increase the possibility of the conflict spiralling beyond control.

Wider Implications

- **Global energy security:** Disruption of Gulf shipping can affect oil supplies and prices.
- **Maritime security:** Commercial vessels face increased risks in a critical shipping corridor.
- **Global economy:** Prolonged disruption can raise energy and transportation costs.
- **Regional stability:** U.S. military bases and regional partners may increasingly become targets.
- **Diplomacy:** Continued escalation makes revival of negotiations increasingly important.

Way Forward

- Restore **diplomatic negotiations** and revive the **Islamabad MoU framework**.
- Avoid further attacks on commercial shipping and critical infrastructure.
- Establish mechanisms for **safe maritime navigation** through the Strait of Hormuz.
- Reduce the risk of miscalculation through direct communication channels.
- Prioritise a negotiated solution over an open-ended cycle of military retaliation.

Terrorism's Changing Face and India's Counter-Terrorism Strategy



Why in News?

- **25 years after 9/11**, terrorism has evolved from large, centrally controlled organisations into smaller, decentralised networks and **lone-wolf attacks**.
- Terror groups increasingly exploit **drones, cyber capabilities and Artificial Intelligence (AI)**.
- India's counter-terrorism approach has also shifted from **restraint and reactive responses** to a more proactive strategy against **cross-border terrorism**.
- India unveiled **PRAHAAR**, its first comprehensive **National Counter-Terrorism Policy and Strategy**, on **23 February 2026**.

Changing Nature of Terrorism

Earlier Pattern	Emerging Pattern
Large, hierarchical organisations	Smaller, decentralised groups
Centralised leadership	Autonomous cells and lone actors
Conventional weapons	Drones, cyber tools and AI
Physical networks	Digitally enabled radicalisation and coordination
Large-scale coordinated attacks	Smaller, unpredictable attacks
Primarily physical battlefield	Physical + cyber + technological domains

Post-9/11 Transformation

- The **9/11 attacks (2001)** fundamentally altered global counter-terrorism strategies.
- Organisations such as **al-Qaeda** and **Islamic State (ISIS)** demonstrated the threat posed by highly organised transnational terrorism.
- Over time, counter-terrorism pressure weakened large hierarchical structures, encouraging terrorist networks to become more **fragmented and autonomous**.

- Technology has simultaneously created new avenues for recruitment, communication, surveillance evasion and attacks.

Evolution of Terrorism in India

1. Early Phase: Cross-Border Terrorism and Reactive Response

- India faced a growing terrorist threat, particularly in Kashmir, from the **early 1990s**.

Major attacks exposed weaknesses in India's internal security architecture:

- **1991:** Assassination of former Prime Minister **Rajiv Gandhi** by LTTE at Sriperumbudur, Tamil Nadu.
- **1993:** Mumbai serial blasts — over **250 deaths** in 13 coordinated explosions.
- **1998:** Coimbatore serial blasts.
- **1999:** Hijacking of **IC-814**; India released terrorists including **Masood Azhar** and **Ahmed Omar Sheikh** in exchange for hostages.
- **2000:** Red Fort attack by Lashkar-e-Taiba terrorists.
- **2001:** Parliament attack by **Jaish-e-Mohammed (JeM)**.
- **2002:** Akshardham Temple attack.
- **2005:** Delhi serial blasts.
- **2006:** Varanasi serial blasts.
- **2008:** Delhi blasts followed by the **26/11 Mumbai attacks**.
- **2010:** German Bakery blast, Pune.
- **2011:** Delhi High Court blast.

2. Operation Parakram — 2001–02

- The Parliament attack triggered **Operation Parakram**, involving large-scale military mobilisation against Pakistan.
- However, India ultimately **did not undertake direct military action** against Pakistan.
- The presence of nuclear weapons on both sides raised concerns about escalation.

3. 26/11 Mumbai Attacks — A Turning Point

- The **2008 Mumbai attacks** became a major turning point in international recognition of India's concerns regarding **Pakistan-sponsored cross-border terrorism**.
- Despite the severity of the attack, India did not undertake direct military action against Pakistan.
- This contributed to the perception of a largely **restrained and reactive counter-terrorism policy**.

Shift Towards Proactive Counter-Terrorism

- After 2014, India increasingly adopted a strategy aimed at imposing **direct costs on terrorist networks operating across the border**.

Uri Surgical Strikes — 2016

- **18 September 2016:** JeM terrorists attacked an Army camp at **Uri**.
- **28–29 September 2016:** Indian forces conducted **cross-border surgical strikes** against terrorist launch pads.
- Significance:
- Marked a major shift from strategic restraint.
- Demonstrated India's willingness to conduct **pre-emptive cross-border operations**.

Balakot Air Strike — 2019

- **14 February 2019:** Pulwama attack targeted a CRPF convoy.
- The Indian Air Force subsequently conducted strikes against a **JeM terror camp at Balakot, Pakistan**.
- It marked the first instance cited in the source of the IAF crossing into Pakistani airspace to strike a terror target.

Operation Sindoor — 2025

- **22 April 2025:** Terrorist attack in **Pahalgam** triggered a major Indian response.
- On **6–7 May 2025**, Indian armed forces launched **Operation Sindoor**.
- The operation targeted the Pakistan-based terror infrastructure of **LeT and JeM**.
- It represented the strongest expression of India's policy of imposing direct costs on cross-border terror networks.

India's Present Counter-Terrorism Doctrine

Following Operation Sindoor, India articulated three broad positions:

- **End of strategic restraint**
- Terror attacks will no longer be met merely with warnings or diplomatic responses.
- **Cross-border terrorism as an 'act of war'**
- Future attacks originating from Pakistan are to be treated with a much stronger security response.
- **Nuclear deterrence will not prevent counter-action**
- India has indicated that **nuclear threats will not automatically restrain its response** to terrorism.

PRAHAAR: National Counter-Terrorism Policy and Strategy, 2026

- Unveiled on **23 February 2026**.
- Described as India's first comprehensive **National Counter-Terrorism Policy and Strategy**.
- Focuses on:
- **Prevention** of terrorism.
- Effective response to terrorist threats.
- Countering **radicalisation**.
- Coordination among government agencies.
- Participation of wider society.

Core Approach

Whole-of-Government + Whole-of-Society

- **Whole-of-Government:** coordination among security, intelligence, law-enforcement and other governmental institutions.
- **Whole-of-Society:** involvement of communities and civil society in preventing radicalisation and strengthening resilience.

Four-Fold Strategy for India

1. Eliminate Remaining Terror Networks

- Continue intelligence-led operations against residual terrorist networks.
- Focus particularly on **Jammu & Kashmir**.
- Prevent surviving networks from rebuilding their operational capacity.

2. Pre-emptive Action

- Identify and neutralise threats developing across the **Line of Control (LoC)**.
- Target potential terrorist launch infrastructure where necessary.
- Leverage India's established intelligence and security networks.

3. De-radicalisation

- Develop comprehensive programmes to:
- Prevent extremist recruitment.
- Bring vulnerable youth into the mainstream.
- Reduce social support for terrorist organisations.
- Make participation in terrorist activities increasingly unattractive and costly.

4. Counter Terror Financing

- Disrupt the financial ecosystem supporting terrorism.
- Strengthen cooperation with **friendly and partner countries**.
- Target the flow of funds that enables recruitment, logistics and operations.

Key Challenges

- **Infiltration:** Small groups of terrorists may still cross the LoC and evade security agencies.
- **Lone-wolf terrorism:** Decentralised actors are difficult to detect before an attack.
- **Technology:** Drones, cyber capabilities and AI provide new tools to terrorist organisations.
- **Radicalisation:** Online and social networks can facilitate extremist recruitment.
- **Terror financing:** Terror networks can use increasingly sophisticated financial channels.
- **Nuclear backdrop:** India-Pakistan tensions continue to carry escalation risks.
- **International double standards:** Countries may selectively respond to terrorism depending on geopolitical interests.

Global Dimension

- At the **Shanghai Cooperation Organisation Summit in Bishkek (1 September 2026)**, India stressed that countries supporting or sheltering terrorists should face a strong international message that **terrorism cannot become a strategic instrument**.
- At the **18th BRICS Summit in New Delhi**, the **Delhi Declaration** included a dedicated paragraph on the **Pahalgam terror attack**, reflecting broader international attention to terrorism.

India's Counter-Terrorism Approach: Evolution

Phase	Approach	Major Examples
1990s–2001	Reactive/internal security response	Mumbai blasts, Coimbatore blasts, Kashmir terrorism
2001–2014	Strategic restraint + diplomatic pressure	Parliament attack, Operation Parakram, 26/11
2016 onwards	Proactive cross-border response	Uri surgical strikes
2019	Air power against terror infrastructure	Balakot
2025 onwards	Stronger deterrence + direct cost imposition	Operation Sindoor
2026	Institutionalised national strategy	PRAHAAR

Way Forward

- Strengthen **real-time intelligence sharing** among central and State agencies.
- Improve counter-drone, cyber and AI-enabled threat detection.
- Expand community-based **de-radicalisation and rehabilitation** programmes.

- Strengthen international cooperation against **terror financing and safe havens**.
- Improve border surveillance and intelligence penetration along vulnerable infiltration routes.
- Maintain diplomatic efforts to build a stronger **global consensus against terrorism and its sponsors**.
- Ensure counter-terrorism operations remain consistent with **rule of law and constitutional safeguards**.

West Asia Conflict: Rising Red Sea and Gulf Risks



Why in News?

- **15 September 2026:** Saudi Arabia warned of a **firm response** after Houthi attacks using **ballistic missiles and drones** injured 13 civilians in southern Saudi Arabia.
- The escalation has increased concerns over the security of the **Red Sea and Bab el-Mandeb Strait**, particularly as the wider United States–Iran conflict continues to affect the **Strait of Hormuz**.

Houthi Attacks and Red Sea Security

- **Houthis:** Iran-aligned rebel group operating in Yemen.
- **Renewed fighting:** Conflict with Saudi-backed Yemeni government forces intensified from July 2026.
- **Maritime blockade:** Houthis began targeting Saudi-linked shipping in the **Red Sea**.
- **Territorial control:** The group reportedly seized parts of Yemen's **Red Sea coast and the Bab el-Mandeb Strait**.
- **Recent attacks:** Ballistic missiles and drones targeted Saudi Arabia, causing civilian casualties.

Bab el-Mandeb Strait

- **Location:** Connects the **Red Sea with the Gulf of Aden**.
- **Strategic importance:**
- Major route for international shipping.
- Important for **oil and commercial trade** between the Indian Ocean and Europe.
- Instability can increase **shipping costs, insurance premiums and delivery times**.
- The renewed Houthi activity has therefore raised wider concerns over **global maritime trade**.

Impact on Saudi Arabia

- Saudi Civil Defence issued emergency alerts for several cities, including:
- **Yanbu**
- **Jeddah**
- **Mecca**
- **Taif**
- **Abha**
- **Jazan**
- **Yanbu** is particularly important because it is a major **Red Sea oil-export port**.
- Egypt expressed support for Saudi security measures and stressed the need to maintain **freedom and security of navigation** in the Red Sea and Bab el-Mandeb.

Strait of Hormuz: Parallel Risk

- Escalation in West Asia has also reduced shipping activity through the **Strait of Hormuz**.
- Commodity vessel transits fell sharply, increasing concerns over disruption to **global energy supplies**.
- Any prolonged disruption can affect:
- **Crude oil prices**
- Shipping costs
- Energy-importing economies
- Global inflation

Impact on Global Oil Markets

- Attacks on Saudi energy infrastructure have raised concerns over **oil supply disruptions**.
- Brent crude crossed **$107 per barrel** on 15 September 2026 amid renewed supply fears.
- A prolonged conflict could therefore create a combination of:
- **Supply disruption**
- Higher energy prices
- Greater market volatility
- Inflationary pressure

U.S. Military Pressure

- The United States has reported a **shortfall in ammunition** resulting from its military campaign against Iran.
- **Operation Epic Fury (OEF)** incurred an estimated **$33.4 billion** cost between 28 February and 30 June 2026.

- About **$22.3 billion** was spent on expended munitions.
- The U.S. Department of Defence identified:
- Strategic inventory shortfalls.
- Bottlenecks in the defence-industrial base.
- Need to accelerate procurement and production.

Wider Regional Consequences

- **Iraq:** United States military withdrawal is underway, while Iranian-backed militias have resisted demands to surrender their weapons.
- **Türkiye:** Called for an immediate halt to reciprocal attacks and restoration of freedom of passage through the **Strait of Hormuz**.
- **Egypt:** Emphasised secure navigation through the Red Sea and Bab el-Mandeb.
- **Saudi Arabia:** Faces simultaneous security risks from missile/drone attacks and disruption to energy infrastructure.

Strategic Significance

- **Maritime security:** Threats to Bab el-Mandeb and Hormuz can disrupt major international shipping routes.
- **Energy security:** Saudi infrastructure and Gulf shipping are critical to global oil supplies.
- **Global economy:** Higher oil and freight costs can generate inflationary pressures.
- **Regional stability:** Conflict risks spreading through Iran-aligned armed groups in Yemen and Iraq.
- **Geopolitical competition:** The conflict involves overlapping interests of the United States, Iran, Saudi Arabia, Israel and other regional powers.

India: Key Implications

- **Energy security:** India is heavily dependent on imported crude oil; prolonged price increases can widen the import burden.
- **Shipping:** Disruption of Red Sea and Gulf routes can increase freight costs and affect trade.
- **Inflation:** Higher crude prices can transmit into transport, manufacturing and consumer prices.
- **Indian diaspora:** Escalation in the Gulf can create risks for Indian citizens working in the region.
- **Strategic interests:** India must balance relations with **Gulf countries, Iran, Israel and the United States**.

India–Pakistan Naval Collision in the Arabian Sea: What Happened?



Context:

- An Indian Navy warship, **INS Kolkata**, and a Pakistani Navy vessel, **PNS Hunain**, collided in the **North Arabian Sea on September 15, 2026**.
- India said the collision followed a **dangerous overtaking manoeuvre** by the Pakistani vessel, while Pakistan rejected India's allegations and gave a different account.
- The incident has brought attention to the **1991 India–Pakistan agreement**, which requires naval vessels of the two countries to maintain a minimum separation while operating in international waters.

What Happened?

- **Date:** September 15, 2026
- **Location:** North Arabian Sea
- **Vessels involved:** INS Kolkata and PNS Hunain
- According to India:
- PNS Hunain approached INS Kolkata at **high speed**.
- It carried out a **dangerous overtaking manoeuvre**.
- The manoeuvre resulted in the collision.
- India said this violated the **1991 bilateral agreement** and the **International Regulations for Preventing Collisions at Sea**.
- **Damage:**
- **INS Kolkata:** No major damage and remained at sea.
- **PNS Hunain:** Sustained damage and returned to harbour.
- Pakistan **rejected India's allegations** and alleged that the Indian warship had carried out a **provocative manoeuvre**.

- The exact sequence of movements immediately before the collision **remains disputed**.

INS Kolkata

- **INS Kolkata** is the lead ship of the Indian Navy's **Project 15A Kolkata-class guided missile destroyers**.
- Built by **Mazagon Dock Shipbuilders, Mumbai**.
- **Length:** 164 metres
- **Full-load displacement:** About 7,400 tonnes
- **Maximum speed:** About 30 knots
- **Commissioned:** August 2014
- Major capabilities include:
- **Long-range air defence**
- **Anti-surface warfare**
- **Anti-submarine warfare**
- Helicopter operations
- **BrahMos supersonic cruise missiles** as its principal anti-surface strike weapon

PNS Hunain

- **PNS Hunain (F-273)** is an **offshore patrol vessel** of the Pakistan Navy.
- Built by **Damen Shipyards in Romania**.
- **Commissioned:** July 2024
- Based on the **OPV 2600 design** and a follow-on to Pakistan's **Yarmook-class patrol ships**.
- **Length:** Approximately 98 metres
- **Displacement:** About 2,600 tonnes
- **Maximum speed:** Around 24 knots
- Its roles include:
- **Maritime surveillance**
- **Patrolling**
- **Maritime security**
- Military operations
- Pakistan describes it as a **multi-purpose platform** with electronic warfare, anti-ship and anti-air warfare capabilities, self-protection and terminal defence systems.
- It can also operate a **multirole helicopter**.

What Does India Say?

- INS Kolkata was conducting **routine surveillance**.
- PNS Hunain approached the Indian warship at high speed.
- The Pakistani vessel carried out a **dangerous overtaking manoeuvre**.
- The manoeuvre brought the two ships into close proximity and resulted in the collision.
- India said the incident violated:
- The **1991 India–Pakistan agreement**
- The **International Regulations for Preventing Collisions at Sea**
- On **September 18**, India's Ministry of External Affairs said it had examined Pakistan's response and **rejected its allegations**.

What Does Pakistan Say?

- Pakistan **rejected India's allegations**.
- It alleged that the Indian warship had carried out a **provocative manoeuvre**.
- The two countries therefore have **different accounts** of the events immediately before the collision.
- The precise sequence of movements remains unresolved.

What is Article 10 of the 1991 Agreement?

The incident has brought attention to **Article 10** of the *Agreement between India and Pakistan on Advance Notice on Military Exercises, Manoeuvres and Troop Movements*, signed on **April 6, 1991**.

- Naval ships and submarines of India and Pakistan should not approach within **three nautical miles** of each other while operating in **international waters**.
- The purpose is to **avoid accidents**.
- **3 nautical miles ≈ 5.6 km**.
- Article 10 is part of a wider **military confidence-building framework** between India and Pakistan.
- It aims to reduce:
- **Accidental confrontation**
- **Miscalculation**
- Risks during military operations
- It is a **bilateral requirement** between India and Pakistan and is not a universal international rule applicable to all warships.

International Regulations for Preventing Collisions at Sea

India has also referred to the **International Regulations for Preventing Collisions at Sea**.

These rules provide a framework for:

- Safe navigation
- Vessel movements
- Overtaking
- Maintaining appropriate distance
- Preventing collisions

India has argued that the Pakistani vessel's manoeuvre violated applicable navigation requirements.

Has a Similar Incident Happened Before?

- In **June 2011**, Pakistani warship **PNS Babur** came close to Indian Navy frigate **INS Godavari**.
- The incident occurred during **anti-piracy operations in the Gulf of Aden**.
- It resulted in **minor damage**.
- India lodged a protest, citing violations of **navigational-safety requirements**.
- The September 2026 incident is the **second reported India–Pakistan naval collision involving the 1991 framework**.

India's Diplomatic Response

India has:

- Summoned Pakistan's **Chargé d'Affaires in New Delhi**.
- Lodged a **strong diplomatic protest**.
- Instructed India's Chargé d'Affaires in Islamabad to raise the issue with Pakistan's **Foreign Ministry**.
- Advised Pakistan to ensure that its military units:
- Exercise **due care**.
- Follow relevant **bilateral agreements**.
- Take steps to prevent a recurrence.

International Waters

- The collision occurred in **international waters**.
- According to India's position, this does not mean that the two navies are outside their **agreed bilateral rules of conduct**.

Greenland Security Agreement: A Shift from U.S. Acquisition Demand



The new **U.S.-Denmark-Greenland security agreement** marks a shift in the U.S. approach towards Greenland. President **Donald Trump** had earlier demanded that Greenland become part of the United States, but the September 22, 2026 agreement does not transfer any territory to the U.S. Instead, it expands the **U.S. military presence** and provides Washington greater strategic access to Greenland.

Why in News?

The leaders of the **United States, Denmark and Greenland** signed a new security agreement on September 22, 2026.

- The agreement allows the U.S. to expand its **military presence in Greenland**.
- New military facilities are planned at **Narsarsuaq** and **Mestersvig**.
- Greenland remains a **self-governing territory within the Kingdom of Denmark**.
- The agreement does not transfer Greenland to the United States.
- Greenland has become a direct signatory to the agreement along with Denmark.
- The agreement also provides that an independent Greenland would remain in **NATO**.

From Acquisition Demand to Security Agreement



President Trump first raised the possibility of acquiring Greenland during his first term. After returning to office in January 2025, he again argued that the United States needed to take control of the island and make it part of the U.S.

The new agreement takes a different approach.

- The U.S. does not acquire Greenland.
- Denmark retains sovereignty over the territory.
- Washington receives expanded military access.
- The U.S. can develop additional military facilities.
- The agreement strengthens the U.S. strategic position without changing Greenland's territorial status.

Thus, the agreement provides the U.S. with greater strategic access while avoiding a transfer of sovereignty.

Strategic Importance of Greenland

Greenland has growing importance because of its **geographical position in the Arctic**. The Arctic region is becoming increasingly important due to:

- Growing strategic activity by **Russia and China**.
- Melting ice opening previously difficult-to-access areas.
- Greater importance of Arctic sea routes.
- Potential access to **critical minerals and rare earths**.
- Its location between **North America and Europe**.

The United States therefore considers Greenland important for its wider **Arctic security strategy**.

Existing U.S. Military Presence

The United States already maintains a military presence in Greenland.

- Around **150 U.S. troops** are stationed at **Pituffik Space Base**.
- The 1951 U.S.-Denmark security agreement already provided Washington broad rights to establish military bases in Greenland.
- During the Second World War and Cold War, the U.S. operated **more than 30 bases and installations** on the island.
- Most of these facilities were closed over the following decades, particularly after the end of the Cold War.

The new agreement therefore builds on an existing security relationship rather than creating an entirely new U.S. military presence.

Expansion of U.S. Military Facilities

The agreement identifies two locations for possible expansion of U.S. military facilities.

Narsarsuaq

Narsarsuaq is located in southern Greenland.

- The U.S. previously maintained a major airfield there during the **Second World War**.
- The facility was closed decades ago.
- The new agreement provides for renewed U.S. military development in the area.

Mestersvig

Mestersvig is located in eastern Greenland.

- The U.S. has not previously maintained a permanent military presence there.
- The location provides a strategic position overlooking waters between **Greenland, Norway and Iceland**.
- The Danish military currently uses the area for activities including **dog-sled patrols**.

1951 U.S.-Denmark Security Agreement

The new agreement is connected to the existing **1951 U.S.-Denmark security arrangement**. The earlier agreement gave the United States broad rights to build military facilities in Greenland.

During the Cold War:

- The U.S. maintained numerous military installations.
- There was even a plan for an **under-the-ice nuclear weapons base**.
- Many facilities were later abandoned because of high costs and the end of the Cold War.

The new agreement therefore expands and formalises aspects of the existing U.S.-Denmark security relationship.

Greenland and NATO

An important provision concerns Greenland's possible future independence. The agreement states that if Greenland exercises its **right to self-determination** and becomes independent:

- Denmark and Greenland would ensure that the independent Greenlandic state agrees to remain in **NATO**.
- The existing security arrangement with the United States would continue.
- This would provide the U.S. continued access to military facilities on the island.

This gives the agreement a potential long-term significance even if Greenland's constitutional status changes in the future.

Greenland's Role in the Agreement

One important development is that **Greenland itself is a direct signatory** to the agreement. Previously, Greenland's international role was largely represented through the Kingdom of Denmark. The direct participation of Greenland is significant because:

- Greenland has a population of around **50,000**.
- There has been a long-standing debate over its relationship with Denmark.
- Greenland has its own political movement supporting greater autonomy and independence.

- Direct participation could provide greater scope for Greenlandic involvement in **foreign and security policy**.

Restrictions on China and Other Non-NATO Powers

The agreement also addresses the involvement of countries outside NATO.

- **Non-NATO countries** would not be allowed to establish military facilities in Greenland.
- Such countries would also face restrictions on investment in **sensitive areas**, particularly rare earths.
- Denmark has already blocked Chinese investments in Greenland.
- The new agreement effectively formalises this strategic restriction.

This reflects wider concerns about **Chinese and Russian activities in the Arctic**.

Importance of Rare Earths

Greenland has gained strategic importance partly because of its potential **rare earth resources**. Rare earth elements are important for:

- Advanced electronics
- Defence technologies
- Renewable energy equipment
- High-technology manufacturing

Restrictions on foreign investment in sensitive areas therefore have both **economic and strategic implications**.

Significance for the United States

The agreement strengthens the U.S. position in the Arctic without requiring territorial acquisition.

- Expands U.S. military access.
- Provides new locations for military facilities.
- Strengthens U.S. presence near the **North Atlantic and Arctic**.
- Limits military and sensitive economic activities by non-NATO countries.
- Supports U.S. efforts to respond to growing Russian and Chinese activity in the region.

Significance for Denmark and Greenland

The agreement also provides important benefits and changes for Denmark and Greenland.

- **Denmark:** Retains sovereignty over Greenland while strengthening security cooperation with the U.S.
- **Greenland:** Gains a direct role as a signatory to an international security agreement.
- **NATO:** Gains stronger security arrangements in the strategically important Arctic region.
- **Greenlandic autonomy:** Direct participation may create a precedent for greater Greenlandic involvement in foreign-policy matters.

Major Challenges

Several issues remain important despite the agreement.

- **Sovereignty:** Greenland's future constitutional status remains a sensitive issue.
- **U.S.-Denmark relations:** Earlier acquisition demands created tensions between Washington and Copenhagen.
- **Greenlandic autonomy:** Greater U.S. military involvement must be balanced with Greenland's interests.
- **China and Russia:** Their growing Arctic activities remain a strategic concern.
- **Environmental concerns:** Expansion of military infrastructure in the Arctic requires consideration of the fragile environment.
- **Future independence:** The status of the agreement after possible Greenlandic independence could become an important issue.

Conclusion

The Greenland security agreement represents a shift from President Trump's earlier demand for **U.S. ownership of Greenland** towards expanded American military access without territorial acquisition. It strengthens the U.S. position in the increasingly important **Arctic region**, while keeping Greenland under Danish sovereignty. The direct participation of Greenland and provisions concerning possible future independence also give the agreement importance for the island's evolving relationship with **Denmark, NATO and the United States**.

Pakistan-Afghanistan Conflict: Cross-Border Strikes and Strategic Tensions



Pakistan and Afghanistan have entered a sharper phase of confrontation, with repeated Pakistani air and drone strikes inside Afghanistan following attacks on Pakistani security forces. The immediate dispute centres on Pakistan's allegations that groups such as the **Tehreek-e-Taliban Pakistan (TTP)** and **Ittihadul Mujahideen Pakistan (IMP)** operate from Afghan territory. However, the tensions are also linked to deeper disputes involving the **Durand Line, trade and transit, Pakistan's influence in Afghanistan, and Afghanistan's relations with India**.

Why in News?

- Pakistan carried out **air and drone strikes on 10 locations inside Afghanistan on September 24, 2026**.
- The strikes reportedly targeted **Kandahar, Khost and Paktia**.
- Kandahar is the base of Taliban Supreme Leader **Hibatullah Akhundzada**.
- Pakistan described the strikes as **"deliberate, precise, calibrated and proportionate."**
- The action followed Pakistani claims that drones launched from Afghanistan had entered Pakistani territory.
- Earlier, on **September 21**, Pakistani strikes on Kunar and Paktika killed three civilians.
- The latest escalation follows months of growing tensions between Islamabad and Kabul.

Recent Escalation

The current confrontation follows a series of militant attacks and Pakistani military responses.

- On **September 18, 2026**, a vehicle-borne explosive device attacked a police compound in **Kohat, Khyber Pakhtunkhwa**.
- At least **16 police officers were killed**.
- The attack was followed by an armed assault.
- **Ittihadul Mujahideen Pakistan (IMP)** claimed responsibility.
- Pakistani authorities identified one attacker as an **Afghan national**.
- Pakistan has carried out air and drone strikes inside Afghanistan on at least **15 occasions between October 2025 and September 2026**.

Background to the Current Escalation

The present confrontation has roots in the escalation that began in **February 2026**.

Operation Ghazab lil-Haq

- On **February 27, 2026**, Pakistan launched **Operation Ghazab lil-Haq**, meaning **"Righteous Fury,"** against the Taliban in Afghanistan.
- Pakistan cited alleged **cross-border firing** as the reason.
- The operation marked a major deterioration in relations between Pakistan and the Afghan Taliban.
- Pakistan's Defence Minister **Khawaja Asif** described the situation as **"open war"** between the two sides.
- Pakistan also accused Kabul of providing shelter to militants responsible for attacks inside Pakistan.

Terrorism Situation Inside Pakistan

Pakistan continues to face significant militant violence, particularly in **Khyber Pakhtunkhwa**.

- During **2026**, nearly **1,700 civilians and security personnel** have been killed in terrorism-related incidents in Pakistan.
- Around **545 deaths** have occurred in Khyber Pakhtunkhwa.
- The **TTP and IMP** operate prominently in the region.
- Pakistan argues that the presence of these groups in Afghanistan has made cross-border militant activity a major security challenge.

Militant Groups Involved

Tehreek-e-Taliban Pakistan

- The **TTP** is one of the principal militant groups involved in attacks against Pakistan.
- Pakistan accuses the Afghan Taliban of allowing TTP fighters to operate from Afghan territory.
- The Afghan Taliban has repeatedly denied supporting attacks against Pakistan.
- A **UN monitoring report released in August 2026** stated that the Afghan Taliban had continued its support for the TTP.

Hafiz Gul Bahadar and IMP

- The **Hafiz Gul Bahadar (HGB)** group has also become an important militant actor.
- HGB previously focused largely on fighting U.S. and NATO forces in Afghanistan.
- After 2021, it increasingly directed attacks towards Pakistan.
- It is linked with **Ittihadul Mujahideen Pakistan (IMP)**.

- Despite being smaller than the TTP, HGB and IMP have carried out complex attacks against security installations in Khyber Pakhtunkhwa.

Taliban's Response

The Taliban has publicly denied supporting attacks against Pakistan. However, according to the UN monitoring report:

- Afghan Taliban authorities reportedly relocated around **2,000 TTP fighters and their families** away from the Pakistani border.
- **Hibatullah Akhundzada** reportedly warned TTP leaders through back-channel communications to stop attacks against Pakistan.
- The report suggested that the Taliban could withdraw support if attacks continued.
- It remains unclear whether similar efforts were made regarding **IMP**.

The Taliban also has its own political and strategic interests. The **Rahbari Shura**, or leadership council, remains an important centre of authority under Hibatullah Akhundzada.

Pakistan's military pressure could therefore have mixed consequences:

- It may increase pressure on the Taliban to act against the TTP.
- It may also strengthen anti-Pakistan sentiment.
- It could encourage greater Afghan nationalism.
- It may reduce Islamabad's ability to influence Kabul.

Civilian Impact

Pakistan's military operations have also caused civilian casualties inside Afghanistan.

- On **September 21, 2026**, Pakistani air strikes in **Kunar and Paktika** killed three civilians.
- The victims included a **man, a woman and a girl**.
- The deaths were confirmed by **UNAMA**.
- Pakistan claimed that **28 militants were killed**.
- The civilian deaths triggered protests in Kabul and other parts of Afghanistan.
- Private estimates cited in the given material suggest that more than **1,100 civilians have been killed or injured by cross-border violence in Afghanistan in 2026**.

The Durand Line Dispute

The **Durand Line** is one of the oldest sources of tension between Pakistan and Afghanistan.

- The boundary was drawn in **1893** by **Sir Mortimer Durand**.
- It divided territories associated with Afghan ruler **Amir Abdul Rehman Khan**.
- The boundary divided several **Pashtun tribal areas**.
- British India later treated it as a permanent boundary.
- Pakistan inherited this position after independence in **1947**.
- Afghanistan has historically rejected Pakistan's interpretation of the line as a final international border.
- The dispute continues to influence **border security and political relations**.

Durand Line and Pashtun Areas

The Durand Line divides communities with shared **Pashtun cultural and tribal links**, creating additional political sensitivities.

- Afghanistan has historically opposed the final status of the boundary.
- Pakistan considers it its international border.
- The issue has remained unresolved despite repeated political changes in both countries.
- In **2018**, Afghanistan objected to Pakistan's integration of its former Tribal Areas into **Khyber Pakhtunkhwa**.

Trade and Transit

Trade and connectivity are another major source of disagreement.

Afghanistan is **landlocked** and depends on neighbouring countries for access to international markets. Its major transit routes include:

- **Pakistan**
- **Iran**
- **Central Asian countries**

The route through Pakistan has traditionally been important because of its geographical proximity.

India-Afghanistan Trade Connectivity

- Afghanistan has repeatedly sought greater access to **Indian markets through Pakistan**.
- Successive Afghan governments sought permission for overland trade between India and Afghanistan through the **Wagah border**.
- Pakistan has not allowed regular Indian exports and aid to Afghanistan through its territory.
- This has contributed to resentment in Kabul.

- Restrictions on goods entering Afghanistan through land routes or **Karachi port** have also increased tensions.
- Thus, trade and transit have become important elements of the wider strategic relationship.

The India Factor

India's engagement with Afghanistan has also influenced Pakistan's strategic calculations.

- Pakistan has traditionally been concerned about the possibility of strategic pressure from **India and Afghanistan simultaneously**.
- Islamabad has sought to limit Kabul's strategic relationship with New Delhi.
- Afghan governments have generally resisted external control over their foreign policy.
- The Taliban's growing outreach to India has added another layer to Pakistan's concerns.
- Pakistan views closer **Taliban-India engagement** as a challenge to its traditional influence in Afghanistan.

Pakistan's Possible Strategic Objectives

Pakistan's recent actions can be understood in the context of several strategic objectives:

- Reduce attacks by the **TTP and IMP**.
- Pressure the Taliban to act against militant groups.
- Secure Pakistan's western border.
- Seek greater influence in Kabul.
- Limit support for groups hostile to Pakistan.
- Maintain strategic influence over Afghanistan.

The current approach therefore extends beyond individual military strikes and is connected with Pakistan's broader Afghan policy.

Strategic Blowback

Pakistan's approach also carries the risk of unintended security consequences.

- Groups that were once useful to Pakistan in the Afghan conflict have become sources of security problems for Islamabad.
- The **TTP** has intensified attacks inside Pakistan.
- **HGB and IMP** have also targeted Pakistani security forces.
- Pakistani military action inside Afghanistan has not eliminated these groups.
- Civilian casualties have increased anti-Pakistan sentiment.
- Continued strikes could further strengthen Afghan resistance to Pakistani demands.

Major Challenges

The Pakistan-Afghanistan conflict presents several interconnected challenges:

- **Cross-border terrorism:** Pakistan faces attacks from groups operating around the Afghanistan border.
- **Civilian casualties:** Air strikes have resulted in civilian deaths and protests.
- **Durand Line dispute:** The unresolved border issue continues to affect bilateral relations.
- **Taliban resistance:** Kabul has its own strategic interests and does not necessarily accept Pakistani demands.
- **Trade restrictions:** Transit routes can become instruments of political pressure.
- **India factor:** Taliban-India engagement adds another layer to Pakistan's security concerns.
- **Militant networks:** Military strikes alone have not eliminated groups such as the TTP.
- **Regional instability:** Continued confrontation could further destabilise the Afghanistan-Pakistan border region.

Historical Background of Pakistan-Afghanistan Relations

Relations between Pakistan and Afghanistan have been marked by distrust and recurring tensions since **1947**. The relationship has been affected by:

- **Durand Line dispute**
- **Afghan concerns over Pakistani influence**
- **Trade and transit restrictions**
- **Pakistan's support for Afghan resistance groups**
- **Afghanistan's relations with India**
- **Cross-border militant activity**

The relationship remained complicated during major conflicts in Afghanistan, including the **Soviet intervention (1979–1989)** and the **U.S. intervention (2001–2021)**.

Regime Changes in Afghanistan

Afghanistan has experienced repeated political changes that have shaped its relationship with Pakistan.

End of Monarchy and Communist Rule

- Afghanistan's monarchy ended in **1973**.
- A nationalist phase followed.

- Communist rule then continued for around **11 years**.
- The Soviet Union supported the communist government.

Najibullah and Collapse

- After the Soviet withdrawal, President **Najibullah** led the government.
- His government collapsed in **1992**.
- Afghanistan then entered a period of internal conflict.

Civil War and First Taliban Rule

- Afghanistan descended into civil war among different **Mujahideen factions**.
- The Taliban emerged in **1994**.
- With Pakistani support, the Taliban captured **Kabul in 1996**.
- It controlled most of Afghanistan until **2001**.

U.S. Intervention and Islamic Republic

- Following the **September 11, 2001 attacks**, the U.S. invaded Afghanistan.
- The Taliban government was removed.
- The **Islamic Republic of Afghanistan** was established.
- The Taliban later launched a prolonged insurgency.

Taliban Return to Power

- The U.S. withdrew from Afghanistan in **August 2021**.
- The Taliban rapidly defeated Afghan government forces.
- The Taliban returned to power and re-established its rule over Afghanistan.

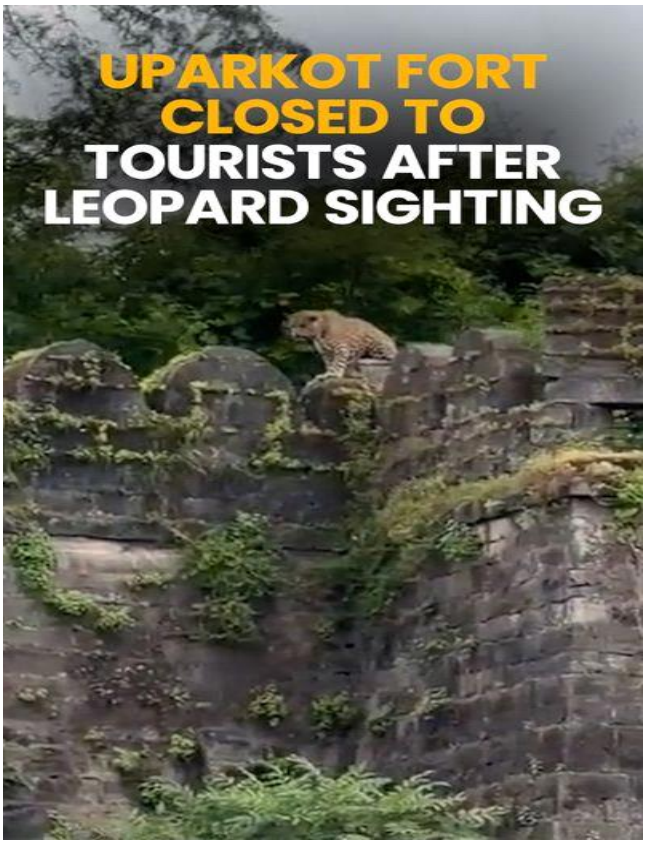
Conclusion

The latest Pakistan-Afghanistan confrontation is linked to more than recent militant attacks. It reflects deeper issues involving **cross-border militancy, the Durand Line, trade and transit, political influence and competing strategic interests**. Pakistan is seeking to address attacks by groups such as the **TTP and IMP**, while the Afghan Taliban has resisted Pakistani pressure and denied supporting attacks against Pakistan. At the same time, military escalation has resulted in civilian casualties and increased tensions between the two sides.

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History, Art & Culture

Uparkot Fort Closed After Leopard Sighting



Why in News?

- **Uparkot Fort** in **Junagadh, Gujarat**, has remained closed to visitors for the **third consecutive day** during the festival season.
- The closure followed the sighting of a **leopard inside the historic fort premises**.

About Uparkot Fort

- **Location: Junagadh, Gujarat**
- The fort is situated at the **foothills of Girnar Hill**.
- It is an ancient fort with a history spanning **more than 2,000 years**.
- The fort was earlier known as **Revath Nagri**.

History

- The fort is traditionally believed to have been constructed in **319 BCE** by **Mauryan Emperor Chandragupta**.
- It was expanded and modified several times over the centuries.
- Uparkot Fort has reportedly faced **16 sieges**.
- According to legend, it once successfully resisted a **12-year-long siege**.

Architecture and Important Features

- The fort covers an area of around **70 acres**.
- Its surrounding walls rise to more than **20 metres** at some locations.
- The fort has **three entrances**, which lead towards an ancient **Torana**.
- The Torana served as a ceremonial structure associated with **Jain, Hindu and Buddhist traditions**.

Buddhist Caves

- The fort contains ancient **Buddhist rock-cut caves**.
- These caves were carved by **Buddhist monks around the 2nd century BCE**.
- They contain **carvings and inscriptions**.
- They are considered among the **oldest surviving Buddhist caves in India**.

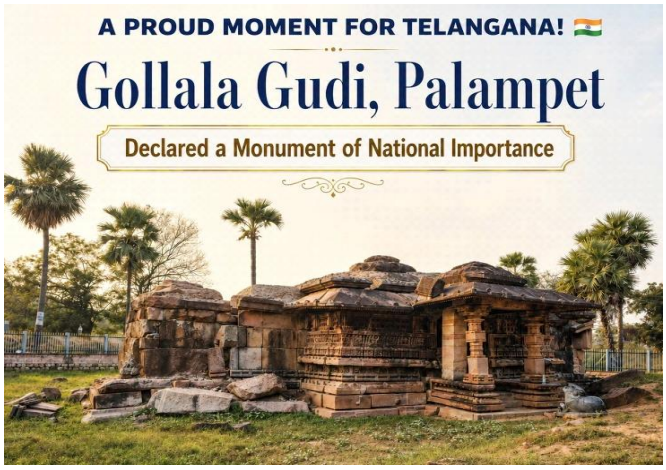
Religious and Historical Structures

- The fort complex includes a **15th-century Jama Masjid**.
- The area near the mosque also contains the **tomb of Nuri Shah**.
- Several **temples** are located within the fort.
- Two important stepwells are:
- **Adi Chadi / Adi Kavi Vav**
- **Navghan Kuvo**

Other Attractions

- A massive **cannon measuring more than 15 feet** is located within the fort.
- It is believed to have been **manufactured in Egypt in 1531**.
- The fort also contains a square water body known as **Nawabi Lake**.
- A large **moat**, reportedly around **300 feet deep**, surrounds parts of the fort.

Gollala Gudi Temple Declared Monument of National Importance



Why in News?

- The **Archaeological Survey of India (ASI)** recently notified the **Gollala Gudi Temple** at **Palampet in Mulugu district, Telangana**, as a **monument of national importance**.
- The temple is an important example of **Kakatiya-era architecture and stone craftsmanship**.

About Gollala Gudi Temple

- **Location:** Palampet, **Mulugu district, Telangana**.
- **Deity:** Dedicated to **Lord Shiva**.
- It is a **Kakatiya-era temple** located close to the **UNESCO-listed Ramappa Temple (Kakatiya Rudreshwara)**.
- The temple is known for its **detailed carvings and architectural features**.

About Kakatiya Dynasty

- The **Kakatiyas** were a Telugu dynasty that ruled large parts of the **eastern Deccan** between the **12th and 14th centuries**.
- Their territory covered:
- Present-day **Telangana**
- **Andhra Pradesh**
- Parts of **eastern Karnataka**
- **Northern Tamil Nadu**
- **Southern Odisha**

Architecture of Gollala Gudi Temple

- The temple was built during the **high point of Kakatiya rule**.
- It reflects the advanced **engineering techniques and stone craftsmanship** of the Deccan region.
- Like the Ramappa Temple, it was constructed without binding mortar, using **carefully interlocked dry masonry**.

Trikutalaya Design

- The temple is a **Trikutalaya**, meaning it has **three sanctums**.
- It consists of:
- An **east-facing mandapa (pillared hall)**
- **Three garbhagrihas (sanctum sanctorums)**
- The **central sanctum** houses a **Shiva lingam**.

Decorative Features

- The **parapet** is decorated with sculptures.
- The **entablature and doorways** contain rows of carved **hamsas** along with **jali (latticework)**.
- Two detached shrines are located in front of the main temple.

- These shrines contain detailed carvings and figures of **dvarapalas (door guardians)**.
- Their antechambers feature **decorative cornices and screens**.

Temple Layout and Sculptures

- A **portico** leads into the central hall.
- The central hall connects to the **three shrines**.
- Antechambers are located towards the **north, south and west**.
- The temple walls contain sculptural niches depicting:
- **Vishnu**
- **Lakshmi**
- **Ganesha**
- **Mahishasuramardini**
- **Mahishasuramardini** is an aspect of **Goddess Durga**, representing the slaying of the demon **Mahishasura**.

Corded Ware Culture: New Archaeological Discovery in Poland



Why in News?

- Archaeologists near **Wrocław, Poland**, discovered:
- A **42-tooth necklace**
- An **adult male skeleton**
- **Stone weapons**
- **Human skull remains**
- The findings provide new clues about the **Corded Ware culture** of prehistoric Europe.

About Corded Ware Culture

- The **Corded Ware culture** refers to a large group of ancient communities that lived across Europe between around **3000 BC and 2350 BC**.
- It belongs to a period covering:
- The **late Stone Age**
- **Copper Age**
- Beginning of the **Bronze Age**
- Its geographical spread extended from the **Rhine River in the west to the Volga River in the east**.
- It covered parts of **Northern, Central and Eastern Europe**.

Origin and Spread

- Archaeologists consider the Corded Ware culture to have included **different regional groups**, rather than one uniform population.
- Communities in different areas followed varied **livelihood and food-production practices**.
- One major theory suggests that the culture emerged partly through the westward movement of people associated with the **Yamnaya culture** from the Eastern European steppes.
- These groups interacted and mixed with **local populations**.
- The Corded Ware culture is considered important in discussions about the **spread of Indo-European languages** across Europe and Asia.

Why is it called Corded Ware?

- The name comes from the distinctive decoration found on their **pottery**.
- Twisted cords were pressed into **wet clay**, leaving patterns resembling ropes or cords.
- The term was first used in **1883** by German archaeologist **Friedrich Klopfleisch**.

Lifestyle and Economy

- Very few **settlements** have been identified.
- This initially led archaeologists to consider them mainly **nomadic pastoralists**, similar to the Yamnaya.
- However, archaeological evidence also indicates **agriculture**.
- **Wheat and barley** remains have been discovered at a Corded Ware site in Poland.
- They also used **wheeled vehicles**, probably pulled by **oxen**.

Other Names

- **Single Grave Culture**
- Named after the practice of burying individuals **separately**, often beneath small burial mounds.
- **Battle Axe Culture / Boat Axe Culture**
- Named after the **boat-shaped stone axes** frequently found in male burials.

Corded Ware and Bell Beaker Cultures

- The **Bell Beaker culture** existed in western Europe during roughly the same period.
- The two cultures shared certain cultural ideas.

- Bell Beaker communities were particularly associated with **trade through rivers and maritime routes**, which supported wider exchange and cultural development.

Poompuhar



Why in News?

The **Tamil Nadu State Department of Archaeology (TNSDA)** has started the **third phase of underwater archaeological exploration** off the coast of Poompuhar in **Mayiladuthurai district**.

About Poompuhar

- **Poompuhar**, also known as **Puhar** or **Kaveripoompattinam**, is an ancient port town in **Tamil Nadu**.
- It is located near the point where the **Cauvery River enters the Bay of Bengal**.
- The word **'Puhar'** means the **estuary of a river in the sea** in Tamil.
- It was an important **ancient port city** and served for some time as the **capital of the Early Chola kings** in Tamilakam.
- Archaeological excavations suggest that the city was established **thousands of years ago**.
- Marine archaeologists have found **ancient pottery dating back to the 4th century BCE** offshore from the town.
- The city finds mention in the Tamil epics **Silappathikaram** and **Manimekalai** and in **Sangam literature**.
- Poompuhar is believed to have been **destroyed several times by large tsunami waves**.

Shekhawati Havelis



Why in News?

The historic and richly frescoed **havelis of Rajasthan's Shekhawati region** have been included in **UNESCO's Tentative List**.

What are Havelis?

- Havelis are **large traditional mansions or townhouses** generally built around an **open central courtyard**.
- The word **haveli** comes from the Arabic **"hawali"**, meaning a private or enclosed space.
- They are found across India, especially in **Rajasthan, Punjab and Gujarat**.
- Their central courtyards help provide **light and ventilation**, which is useful in India's hot climate.
- Havelis often have multiple storeys and feature:
- **Jharokhas** (ornamental balconies)
- **Latticework screens**
- **Frescoed walls**
- Ornate courtyards and gateways
- Unlike many Western mansions, havelis generally have an **inward-looking design** centred around the courtyard.
- Many havelis have now been restored as **heritage hotels, cultural centres and living museums**.

About Shekhawati Havelis

- The **Shekhawati region** is located in **northeastern Rajasthan**.
- It is famous for its historic havelis covered with **detailed wall paintings and frescoes**.
- The frescoes depict themes including:
- **Hindu mythology**
- Royal and local traditions
- Everyday life
- Changing social conditions
- Modern technology and foreign influences

- The havelis are also known for **ornate gateways, balconies, courtyards, carved elements and decorative façades**.
- Together, their architecture and paintings form a **distinctive historic urban landscape** of the Shekhawati region.

Barakuru



Why in News?

A historically significant **Siditale hero stone** was recently discovered at **Barakuru, Karnataka**, during an epigraphical survey of the **Panchalingeshwara Temple**.

About Barakuru

- **Barakuru**, also known as **Barkur**, is an ancient historical **port town in Udupi district, Karnataka**.
- It is situated on the banks of the **Sita River**, about **5 km east of the Arabian Sea coast**.
- Ancient names of the town include **Varakula, Barakanur and Barahkanyapura**.
- It was an important **commercial centre from around the 2nd century BCE**.
- Evidence of the **Megalithic and Mesolithic ages** has also been found here.
- The port developed extensive **maritime trade with foreign countries** across the Arabian Sea.

Historical Significance

- The **Alupa rulers** made Barakuru their capital during the **10th–11th centuries CE**, turning it into an important political centre.
- It became an important centre of **Tuluva culture**.
- Later, it served as a provincial headquarters under the **Hoysalas** and **Vijayanagara Empire**.
- It also witnessed the rule of the **Keladi Nayaks, Haider Ali, Tipu Sultan and the British**.
- The town had **ten extensions called Keris**, each associated with particular professional communities.
- Barakuru was once known for a network of **365 temples**.
- The **Panchalingeshwara Temple** is one of its most important temples.
- Barakuru was also an important **Jain settlement** in ancient times.
- More than **100 stone inscriptions** and several **copper-plate inscriptions** have been found here, belonging to the **Alupa, Hoysala, Vijayanagara and Keladi periods**.

Shivneri Fort



The Maharashtra government has directed authorities to conduct an **objective assessment of unauthorised constructions and other structures** in and around **Shivneri Fort**, including graves and dargahs, and take appropriate action.

Why in News?

The directive was issued to protect the historical and cultural character of Shivneri Fort and address concerns related to unauthorised structures around the heritage site.

Key Facts

- **Location:** Near **Junnar in Pune district, Maharashtra**.
- It is a historic **hill fort** and is traditionally recognised as the **birthplace of Chhatrapati Shivaji Maharaj**.
- The fort has origins dating to the **Satavahana period** and was later controlled by the **Shilaharas, Yadavas, Bahmani Sultanate and Ahmadnagar Sultanate**.

- It protected an important **trade route connecting the Desh region with Kalyan port**.
- In **1595**, Maloji Bhosale received control of Shivneri and Chakan forts from the Ahmadnagar Sultanate.
- **Shivaji Maharaj was born at Shivneri Fort on 19 February 1630**; some historical records give 1627 as the year.
- The fort is **triangular in shape** and has **seven fortified gates**.
- **Badami Talav** is an important water tank located inside the fort.
- The fort also has the **Ganga and Yamuna water springs**, which are known for having water throughout the year.
- Ancient **Buddhist rock-cut caves at Lenyadri** are located about 2 km from the fort.

Ancient Tomb Discovered at Saqqara in Egypt



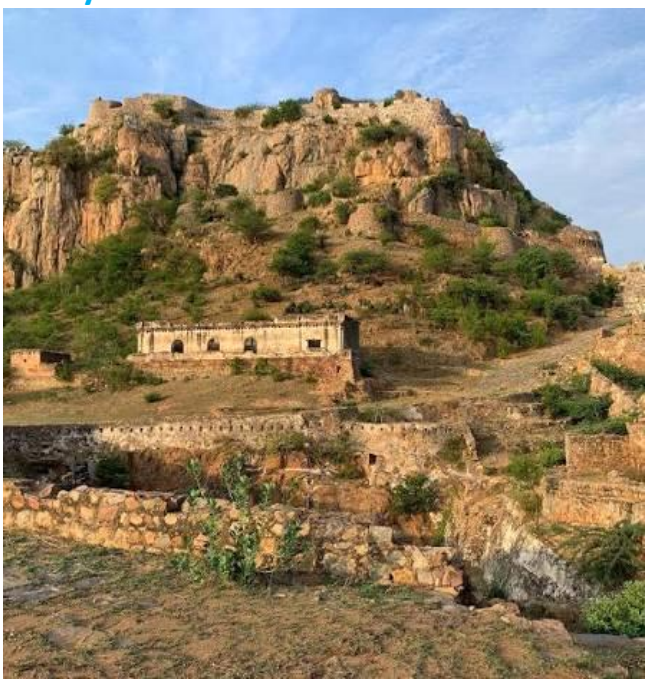
Archaeologists have discovered an ancient tomb at **Saqqara, Egypt**, belonging to a person described as the **"keeper of the secrets of royal decrees."** The discovery provides further evidence of Saqqara's importance as a major centre of ancient Egyptian burial and religious traditions.

Why in News?

A new ancient tomb was discovered during excavations at **Saqqara**, one of Egypt's most important archaeological sites.

- **Saqqara** is part of the necropolis of the ancient Egyptian city of **Memphis**.
- It is located about **24 km southwest of Cairo**.
- The site forms part of the **Memphis and its Necropolis** UNESCO World Heritage Site, designated in **1979**.
- Saqqara contains numerous **pyramids, tombs, mastabas, temples and funerary monuments**.
- A **mastaba** is a rectangular ancient Egyptian tomb with a **flat roof and sloping sides**.
- Saqqara played an important role in the transition from **mastaba burials to pyramid construction**.
- The **Step Pyramid of Djoser** is located here and is regarded as the **oldest surviving pyramid**.
- It was designed by **Imhotep** and has a distinctive **six-tiered structure**.
- Saqqara also contains pyramids of important rulers of the **Fifth and Sixth Dynasties**.
- The **Pyramid of Unas** contains the oldest known pyramid burial chamber decorated with texts.
- The **Serapeum**, an underground complex at Saqqara, was used for the burial of **Apis Bulls**, considered sacred manifestations of the god **Ptah**.

Gooty Fort



The proposal for a **commemorative postage stamp** on Gooty Fort has been forwarded by the **Ministry of Communications and Department of Posts** for final approval.

About Gooty Fort

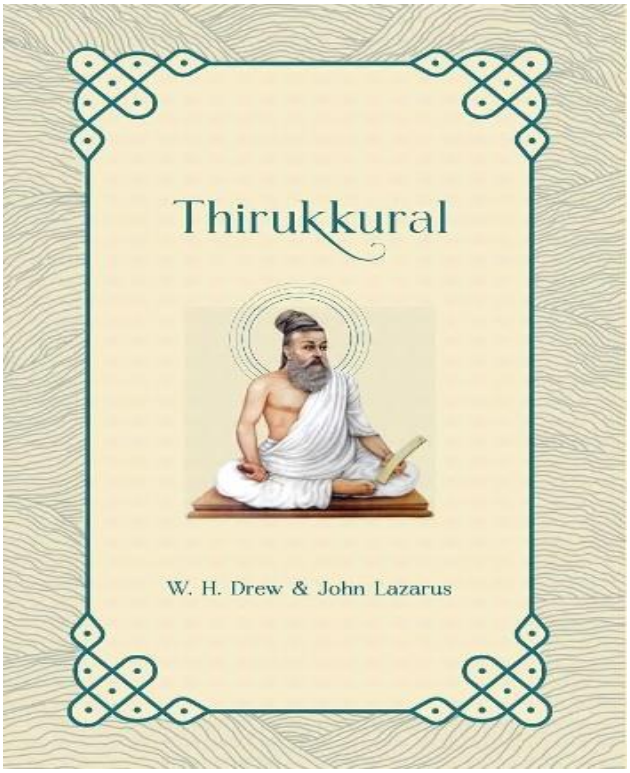
- **Location:** Gooty town, **Anantapur district, Andhra Pradesh**.
- Also known as **Ravadurg** and **Gutti Kota**, it is an ancient **hill fort**.
- The fort has evidence dating to the **Western Chalukya period**. Inscriptions here are associated with **Vikramaditya VI**.

- It witnessed conflict between the **Western Chalukyas and Cholas** during the 11th century.
- Later, it came under the **Vijayanagara Empire** and was associated with **Krishnadevaraya**.
- The fort subsequently passed through the **Qutb Shahi, Mughal, Maratha and Mysore** phases before coming under the **British East India Company**.
- In the 18th century, **Murari Rao** strengthened the fort. Later, **Hyder Ali** captured it after its defenders faced a shortage of water.

Architecture

- Gooty Fort shows a **blend of Hindu and Islamic architectural features**.
- It is mainly built using **granite**, with stone, lime and mortar used in its structures.
- The fort has a distinctive **shell-like layout** and consists of around **15 interconnected smaller forts**.
- These are linked by **outer walls, bastions and gateways**.
- Important structures include **temples, wells, a gymnasium, barracks and Morari Rao's seat**.
- Major temples include **Lakshmi Narasimha Temple, Nageswara Swami Temple, Hanuman Temple, Jyothimma Temple and Ramaswamy Temple**.
- A **dargah** is also located within the fort complex.

Thirukkural



Recently, the **Prime Minister of India gifted the Russian President a translated edition of Thirukkural**, the classical Tamil work, during their bilateral meeting.

About Thirukkural

- **Author: Thiruvalluvar**, also known as **Valluvar**.
- It is one of the most important works of **ancient Tamil literature** and is widely regarded as a major work on **ethics and human values**.
- It was composed more than **2,000 years ago**, generally dated between **300 BCE and 500 BCE**.
- The name *Thirukkural* refers to **sacred couplets**.
- It contains **1,330 couplets**, arranged into **133 chapters**, with **10 couplets in each chapter**.
- Each couplet consists of **seven words**.

Three Books of Thirukkural

- **Aram (Virtue) – 38 chapters**
- Deals with **morality, righteousness and personal conduct**.
- **Porul (Polity) – 70 chapters**
- Covers **governance, society, economy and public life**.
- **Inbam (Love) – 25 chapters**
- Deals with **love and human relationships**.

Key Themes

- Emphasises **ethical conduct, compassion, charity and love**.
- Focuses on values that promote **individual morality and social well-being**.
- It discusses human weaknesses such as **greed, jealousy, anger and harshness** and stresses the importance of overcoming them.
- The opening chapter, **Kadavul Vazhthu (Praise of God)**, discusses the idea of the divine in terms of **wisdom, morality and compassion**.
- The section on love is divided into **Kalaviyal** and **Karpiyal**, dealing with different stages and forms of romantic and marital love.

Ramanathaswamy Temple



The **Ramanathaswamy Temple** at Rameswaram recently featured in the backdrop as the Prime Minister welcomed **BRICS leaders**.

About Ramanathaswamy Temple

- **Location:** Rameswaram Island, **Tamil Nadu**.
- It is dedicated to **Lord Shiva** and is one of the **12 Jyotirlinga shrines**.
- It is also one of the **four Char Dham** pilgrimage sites. The other three are **Badrinath, Dwarka and Puri**.
- It is the **only Shiva temple among the four Char Dham shrines**.

Religious and Historical Significance

- According to the **Ramayana tradition**, Lord Rama is believed to have worshipped and consecrated a **Shivalinga** at Rameswaram after defeating Ravana.
- The worship was associated with seeking atonement for killing Ravana, who was regarded as a Brahmin.
- The name **Ramanathaswamy** refers to Shiva as *Rameswara*, associated with Lord Rama.
- The earliest stone temple was built under the **Cholas during the 12th century**.
- Later rulers, including the **Pandyas, Vijayanagara rulers and Sethupatis**, contributed to its expansion and completion.

Architecture

- The temple is a major example of **Dravidian temple architecture**.
- It has large **gopurams, carved granite structures and extensive pillared halls**.
- Its corridor is among the **longest temple corridors in India**:
- Around **197 m** from east to west.
- Around **133 m** from north to south.
- The temple complex contains **22 sacred wells**, whose water is traditionally used during religious rituals.
- The massive walls and pillars are decorated with **intricate carvings and images of Hindu deities**.

Meenakshi Sundareswarar Temple



Hundreds of **street vendors** were recently evicted from roads around the **Meenakshi Sundareswarar Temple in Madurai** as authorities prepared for the temple's **Maha Kumbabishekam** and sought to improve traffic and pedestrian movement.

About Meenakshi Sundareswarar Temple

- **Location:** Madurai, Tamil Nadu, on the southern bank of the **Vaigai River**.
- **Deities:** The temple is dedicated to **Meenakshi**, a form of **Parvati**, and **Sundareswarar**, a form of **Shiva**. Alagar, a form of **Vishnu**, is also associated with the temple.
- It represents the interaction of **Shaivism, Shaktism and Vaishnavism** traditions.

History

- The temple has ancient origins and was developed during the **Pandya period**, traditionally associated with **Kulasekara Pandya**.
- References to the temple appear in the works of **Thirugnanasambandar**, the 7th-century Shaivite saint.
- The temple suffered destruction during the medieval period and was subsequently rebuilt and expanded.
- Major additions were made under **Thirumalai Nayak (1623–1659)**, giving the complex much of its present form.

Architecture

- It is a major example of **Dravidian temple architecture**.
- The temple complex covers about **45 acres** and measures roughly **254 × 237 metres**.

- It has **14 gopurams**, with the **southern gopuram** rising to more than **170 feet**.
- The **western gopuram** inspired the design of the **Tamil Nadu State Emblem**.
- Important structures include the **Aayirankaal (Thousand Pillar) Hall**, Kilikoondu Mandapam, Golu Mandapam and Pudu Mandapam.
- The so-called **Thousand Pillar Hall actually has 985 carved pillars** and now houses a museum.
- The temple also has **musical pillars**, which produce different notes when struck.
- The complex contains around **33,000 sculptures**, showcasing its rich artistic tradition.

Nuakhai Festival



Recently, the Prime Minister extended greetings to the people on the occasion of Nuakhai.

Why in News?

Nuakhai is an important **agricultural and social festival of Western Odisha**, celebrated to welcome the **new rice harvest** of the season.

About Nuakhai

- The word **Nuakhai** comes from:
- **Nua** – new
- **Khai** – food
- It is mainly celebrated in **Western Odisha**.
- The festival marks the arrival of the **new rice crop** and expresses gratitude for the agricultural harvest.
- It is observed on the **fifth day of the lunar fortnight** of **Bhadrapada (Bhaadra)**, generally during **August–September**.

Rituals

- Nuakhai involves **nine sets of rituals** performed before the main celebration.
- The newly harvested crop, known as **Nabanha**, is first offered to the **presiding deities**.
- After the offering, people prepare and share **traditional delicacies** using the new harvest.
- **Nuakhai Juhar** is an important ritual through which people exchange greetings and seek the blessings of elders.

Significance

- The festival reflects the close relationship between **agriculture, community life and religious traditions** in Western Odisha.
- It marks the **first consumption of the new rice harvest** after offering it to the deities.

Vasai Fort



Why in News?

Several **Ganesh idols** immersed in an artificial pond were allegedly found dumped near the jetty at **Vasai Fort**, raising concerns among local residents.

About Vasai Fort

- **Vasai Fort**, also called **Bassein Fort**, is a historic fort located at **Vasai in Maharashtra**.
- It overlooks the **confluence of the Ulhas River**.
- Vasai was an important **shipbuilding centre** during the 15th century.

History

- The fort was built in the **1530s** by **Bahadur Shah of Gujarat**.
- The **Portuguese** captured Vasai and developed the fort into an important fortified settlement.
- It remained under **Portuguese control until 1739**.
- The **Marathas under Chimaji Appa** captured the fort in the 18th century after prolonged fighting.
- It later came under **British control** during the **First Anglo-Maratha War**.

Architecture

- The fort covers around **110 acres**.
- It is naturally protected by water on **three sides**, while a **moat** strengthened its landward defence.
- Its walls extend for about **4.5 km** and contain **11 major bastions**.
- The complex contains remains of **Portuguese-era churches, chapels, arches and buildings**.
- **Three historic churches** can still be identified within the fort.
- The southernmost chapel has a **barrel-vaulted ceiling**, while vegetation has grown over parts of the old walls.

Bidriware



Why in News?

The centuries-old **Bidriware** craft is facing fresh challenges due to rising prices of **silver, copper and zinc**, which are important raw materials used in its production.

About Bidriware

- **Bidriware** is a traditional **metal handicraft** associated with **Bidar district, Karnataka**.
- It is known for its **intricate designs**, **silver inlay work** and distinctive **deep-black finish**.
- It has received a **Geographical Indication (GI) tag**.

Materials Used

- The main material is a **zinc-copper alloy**.
- **Silver** is used for intricate inlay work.

Making of Bidriware

- Artisans engrave **floral and geometric designs** using small chisels.
- **Silver wires or flattened strips** are hammered into the engraved grooves.
- The characteristic **deep-black lustre** is produced using **soil from Bidar Fort**.
- The soil is added to a **chemical solution** during the final stage.
- The product is then **buffed** to smoothen the surface.

Origin and History

- The craft is mainly associated with the **Bahamani Sultans** of the **14th and 15th centuries**.
- It developed through a combination of **Turkish, Persian and Arabic influences** with local artistic traditions.
- It is also associated with **Sufi Khwaja Moinuddin Hasan Chisti**, who is said to have brought the craft to India in the form of utensils.

EDITORIALS

Crux of The Hindu & Indian Express

History, Art & Culture

Tulu Gets Additional Administrative Language Status in Karnataka



The **Karnataka government has recognised Tulu as the second additional administrative language** in the State. The recognition will apply to the coastal districts of **Dakshina Kannada and Udupi**, where Tulu has a large-speaking population.

- The State government will provide **₹82 lakh annually** for translation work, training and other activities related to the official use of Tulu.
- The decision follows the recommendations of a committee led by educationist **M. Mohan Alva**.
- The committee was formed in **2023** to examine the condition of the **Tulu language and Tuluva culture** and suggest measures for greater official recognition.

Constitutional Provisions

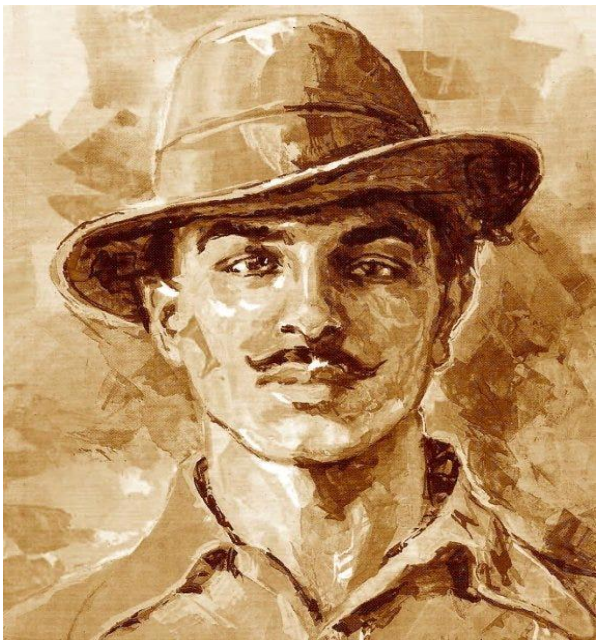
- **Article 345:** Allows a State Legislature to adopt **Hindi or any regional language used in the State** as its official language for administrative purposes.
- **Article 347:** Enables the **President** to direct the official recognition of a language in an entire State or a particular part of it when a significant section of the population demands such recognition.

- **Eighth Schedule:** The Constitution currently recognises **22 languages** under the Eighth Schedule. **Tulu is not included** in the Schedule, despite long-standing demands for its inclusion.

Tulu Language

- **Language Family:** Tulu is a major **Dravidian language**. It is traditionally grouped among the major southern Dravidian languages along with **Tamil, Kannada, Telugu and Malayalam**.
- **Tulu Script:** Tulu has its own traditional script, known as **Tulu script or Tigalari**. It belongs to the **Southern Brahmic script tradition** and developed from the **medieval Grantha script**.
- **Geographical Distribution:** Tulu is mainly spoken in the **Tulunadu region**, covering the coastal parts of Karnataka, particularly the **Karavali region**, and parts of **Kasaragod district in northern Kerala**.
- **Cultural Importance:** The language has a strong **oral and cultural tradition**, reflected in **folklore, Yakshagana, Bhuta Kola rituals and traditional epic poetry**.
- **Historical Context:** Before the **States Reorganisation Act, 1956**, Tulu-speaking areas were part of the **Madras Presidency**. They were later incorporated into the unified **Mysore State**, which was subsequently renamed Karnataka.

Bhagat Singh



Why in News?

The Prime Minister paid tribute to **Shaheed Bhagat Singh** on his **119th birth anniversary**, remembering his contribution to India's freedom struggle and his lasting influence on the youth.

Key Facts About Bhagat Singh

Early Life

- **Bhagat Singh** was born on **28 September 1907** in **Banga, Punjab** (now in Pakistan).
- He belonged to a **Sikh family** with a strong background in the freedom movement.
- His father, **Kishan Singh**, and uncle, **Ajit Singh**, were associated with revolutionary activities.
- Ajit Singh was deported to **Mandalay** and later became associated with the **Ghadar Party** based in San Francisco.

Formative Influences

- The **Jallianwala Bagh massacre** had a major impact on Bhagat Singh.
- He is said to have visited the site soon after the massacre.
- He later studied at **National College, Lahore**, founded by **Lala Lajpat Rai**.
- The institution exposed him to **Swadeshi ideas and revolutionary nationalism**.

Revolutionary Activities

- In **1925**, Bhagat Singh joined the **Hindustan Republican Association (HRA)**.
- The organisation was later reorganised as the **Hindustan Socialist Republican Association (HSRA)** in **1928**.
- In **1926**, he founded the **Naujawan Bharat Sabha** to mobilise young people for the freedom movement.
- In **1929**, Bhagat Singh and **Batukeshwar Dutt** threw low-intensity bombs in the **Central Legislative Assembly**.
- The action was intended as a protest against the **Public Safety Bill** and the **Trade Dispute Bill**, which they viewed as measures restricting political activities and workers' rights.

Lahore Conspiracy Case and Execution

- Bhagat Singh, **Rajguru and Sukhdev** were convicted in the **Lahore Conspiracy Case**.
- The case was connected with the **1928 killing of British police officer J.P. Saunders** in Lahore.
- Saunders was targeted in an attempt to avenge the death of **Lala Lajpat Rai**, who had died after being injured during a protest against the Simon Commission.
- Bhagat Singh, Rajguru and Sukhdev were **hanged on 23 March 1931** at **Lahore Central Jail**.

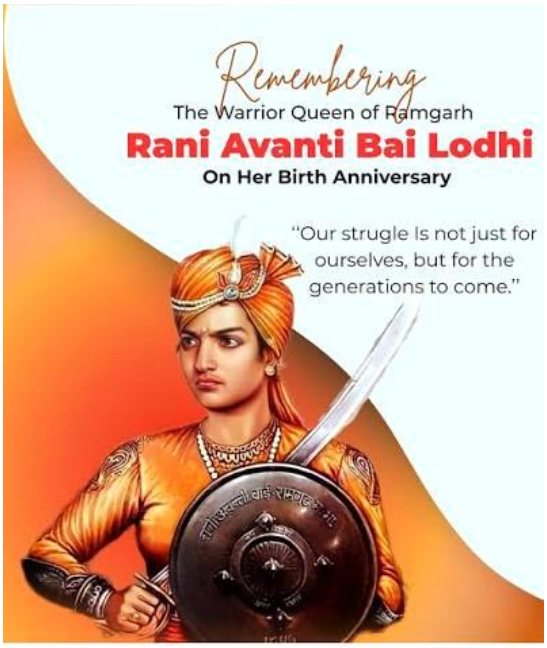
Ideology and Writings

- Bhagat Singh identified himself with **atheism, socialism and rationalism**.
- He was influenced by thinkers including **Karl Marx, Vladimir Lenin, Leon Trotsky and Mikhail Bakunin**.
- His writings emphasised **rational thinking, equality and social justice**.
- His well-known essay **"Why I Am an Atheist"** reflected his views on religion and rationalism.
- During the **1920s**, he contributed to **Urdu and Punjabi newspapers** in Amritsar.
- He also wrote for the **Kirti** journal associated with the **Kirti Kisan Party** and briefly contributed to the **Veer Arjun** newspaper in Delhi.
- He used pseudonyms such as **Balwant, Ranjit and Vidhrohi**.

Legacy

- Bhagat Singh is popularly remembered as **Shaheed-e-Azam**.
- He helped popularise the revolutionary slogan **"Inquilab Zindabad"**, meaning **"Long Live the Revolution."**
- His ideas and writings continue to influence discussions on **nationalism, social justice, equality and rationalism**.
- **23 March** is observed as **Shaheed Diwas (Martyrs' Day)** in memory of **Bhagat Singh, Rajguru and Sukhdev**.

Rani Avanti Bai Lodhi



Why in News?

Defence Minister **Rajnath Singh** paid tribute to **Rani Avanti Bai Lodhi**, highlighting her **patriotism, courage and contribution to the freedom struggle**. Her legacy is remembered beyond social, caste and gender boundaries.

Key Facts About Rani Avanti Bai Lodhi

Early Life

- Rani Avanti Bai Lodhi was born on **16 August 1831** in **Manakhedi village, Seoni district, Madhya Pradesh**.
- Her father, **Rao Jujhar Singh**, was a zamindar, while her mother was **Krishna Bai**.
- From an early age, she developed skills in **horse riding, sword fighting and administration**.

Role in Ramgarh State

- She married **Vikramaditya Singh**, son of **King Lakshman Singh**, the ruler of the **Ramgarh princely state**.
- After Vikramaditya Singh became king but was unable to effectively govern due to illness, **Rani Avanti Bai took charge of the administration**.
- They had two sons, **Aman Singh and Sher Singh**.

Resistance Against British Rule

- The British placed Ramgarh under the **Court of Wards system**, declaring the ruler incapable of governing and his heirs minors.
- Rani Avanti Bai opposed this move and **removed British-appointed officials from Ramgarh**.
- She took control of the administration and rejected British interference in the affairs of the state.

Mobilisation of Farmers

- She encouraged local farmers to **reject British revenue-related orders**.
- Her resistance helped her gain considerable support among the local population.

Role in the Revolt of 1857

- During the **Revolt of 1857**, Rani Avanti Bai organised armed resistance against the British.
- She sent **letters along with two black bangles** to local rulers, zamindars and landlords.
- Through this symbolic message, she challenged them to either **join the fight against the British or accept defeat**.

Battle of Kheri

- On **23 November 1857**, Rani Avanti Bai and her forces fought the British in the **Battle of Kheri**.

- Her forces defeated the British army led by **Waddington, the Deputy Commissioner of Mandla**.
- The battle demonstrated her ability to **mobilise and lead armed resistance** against British forces.

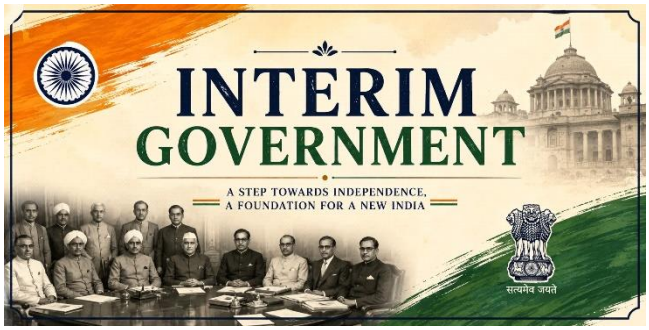
Final Resistance and Martyrdom

- In **March 1858**, British forces launched a major attack against her forces.
- When surrounded and facing capture, Rani Avanti Bai **chose self-sacrifice instead of surrender**.
- She became a lasting symbol of **resistance to colonial rule**.

Legacy

- Rani Avanti Bai Lodhi is remembered for her **courage, leadership, self-respect and patriotism**.
- Her contribution highlights the important role played by **women and regional leaders** in the Revolt of 1857.
- Her legacy continues to be commemorated through **memorials, institutions and public programmes**.
- One such initiative is the **Rani Avanti Bai Lodhi Women's Battalion of the Uttar Pradesh Provincial Armed Constabulary (PAC) at Badaun**.

Interim Government of India, 1946



Why in News?

2 September marks the anniversary of the formation of the **Interim Government of India in 1946**, headed by **Jawaharlal Nehru**.

- It was the first major arrangement in which **Indian leaders assumed executive responsibility in British India**.
- It played an important role in the transition towards the **transfer of power and independence on 15 August 1947**.

What was the Interim Government of 1946?

Background

- After **World War II**, Britain faced severe economic difficulties and growing political unrest in India.
- Events such as the **Royal Indian Navy Mutiny of 1946** increased pressure on the British government to transfer power.
- The government led by **Clement Attlee** therefore accelerated efforts towards an Indian political settlement.

Cabinet Mission Plan, 1946

- The **Cabinet Mission** arrived in India in **March 1946**.
- It consisted of:
- **Lord Pethick-Lawrence**
- **Sir Stafford Cripps**
- **A.V. Alexander**
- The Plan rejected the immediate demand for **Pakistan** and proposed a **three-tier constitutional arrangement** consisting of the Union, sections and provinces.
- Provinces were divided into three groups:
- **Section A:** Hindu-majority provinces
- **Section B:** Muslim-majority provinces
- **Section C: Bengal and Assam**
- It proposed a **389-member Constituent Assembly**.
- The Plan also provided for:
- The **lapse of British paramountcy over princely states**
- Formation of an **Interim Government** during the transition to independence.

Interim Government

- The Interim Government was a **temporary administration** created to manage executive affairs during the transition from colonial rule to independence.
- It was intended to function broadly as a **cabinet government**, rather than simply as a group of departmental heads working under the Viceroy.
- Its main objectives were to:
- Prepare India for **independence**
- Assist in the **transfer of power**
- Support the functioning of the **Constituent Assembly**

Legal Framework

- The government operated under the existing **Government of India Act, 1919**.
- It functioned through a restructured **Viceroy's Executive Council**.

- The **Viceroy remained the formal constitutional head**, while Indian leaders were expected to exercise greater executive authority.

Leadership

- **Lord Wavell**, the Viceroy, remained the **ex-officio President of the Executive Council**.
- **Jawaharlal Nehru** became the **Vice-President of the Executive Council**.
- In practice, Nehru functioned as the **de facto head of the administration** and was responsible for internal affairs.

Muslim League and Direct Action Day

- The **Indian National Congress** agreed to participate in the proposed constitutional arrangement, but differences emerged over **provincial grouping and communal representation**.
- The **Muslim League** withdrew its acceptance of the Cabinet Mission Plan.
- It called for **Direct Action Day on 16 August 1946**, which was followed by severe communal violence, including the **Great Calcutta Killings**.
- Despite the political tensions and the League's initial boycott, the Interim Government headed by Nehru took office on **2 September 1946**.

Entry of the Muslim League

- The Muslim League joined the Interim Government on **26 October 1946**.
- It continued to oppose the **Cabinet Mission Plan** and did not abandon its position on Direct Action.
- To accommodate the League, **three Congress members resigned**, making space for **five League representatives**.
- **Liaquat Ali Khan** became the **Finance Member** and used his financial authority to challenge several initiatives supported by Congress members.

Significance of the Interim Government

1. Beginning of Independent Diplomacy

- Under Nehru, the government began developing the foundations of an **independent foreign policy**.
- It also contributed to the early development of the idea of **non-alignment**.

2. Relations with Princely States

- The government began addressing the issue of **princely states**.
- It helped create the groundwork for their eventual **integration into the Indian Union**.

3. Indianisation of Administration

- Greater responsibility began shifting towards Indian leaders in areas such as:
- **Civil services**
- **Police**
- **Armed forces**

4. Administrative Experience

- Indian political leaders gained practical experience in **governance, food management and developmental planning**.
- This experience became useful during the transition to independence.

5. Growing Acceptance of Partition

- Differences between Congress and the Muslim League created significant **administrative and political paralysis** within the Interim Government.
- This experience contributed to the view among leaders such as **Sardar Patel and Jawaharlal Nehru** that an unstable central coalition could lead to prolonged political conflict.
- These developments contributed to the eventual acceptance of the **Mountbatten Plan of 3 June 1947**, which paved the way for Partition and independence.

Saptakoteshwar Temple



Why in News?

Archaeological remains dating to the **14th–16th centuries** have been found during restoration work at the old site of the **Saptakoteshwar Temple** on **Divar Island, Goa**.

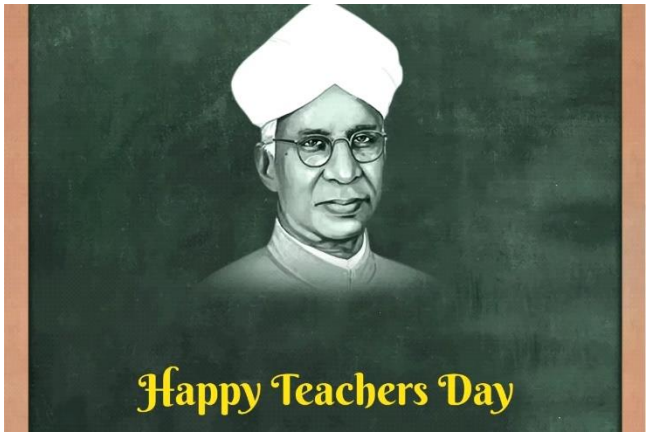
- The remains were discovered along the old pathway between **Koti Tirth and Madhavachi Talli**.

- The findings indicate that the temple underwent **multiple phases of construction and reconstruction**.
- Important remains include:
- **Kirtimukh motif** — traditionally carved above temple doorways.
- **Carved pillar capital** — indicating the architectural quality of the earlier structure.
- **Parts of Dev Khostam** — used for placing idols inside the temple.

About Saptakoteshwar Temple

- **Shaivite Tradition:** The temple is dedicated to **Lord Shiva** and is an important Shaivite centre of the **Konkan region**.
- **Kadamba Connection:** The temple had strong links with the **Kadamba dynasty (10th–14th century CE)**, whose rulers were devotees of Shiva.
- Coins carrying the inscription **"Saptakotishvaralabdha–Varaprasada"** indicate the importance of the deity to the Kadamba rulers.
- **Vijayanagar Period:** The temple was reconstructed during the **Vijayanagar period** after earlier destruction.
- **Portuguese Period:** During Portuguese rule, the temple was destroyed and the **Shiva Linga was relocated**.
- **Maratha Restoration: Chhatrapati Shivaji Maharaj** revived the temple tradition and reconstructed the temple in **1668**.
- **Legend:** According to local tradition, **seven sages** worshipped Shiva at the site. Shiva then appeared as **Saptakoteshwar**.
- **Cultural Significance:** The temple reflects Goa's **layered cultural heritage**, with influences from the **Kadamba, Vijayanagar, Portuguese and Maratha periods**, while preserving the continuity of **Shaivite traditions**.

Teachers' Day and Dr. Sarvepalli Radhakrishnan



Why in News?

India observes **Teachers' Day on 5th September**, the birth anniversary of **Dr. Sarvepalli Radhakrishnan**. The day has been observed since **1962** to recognise the contribution of teachers to education and society.

Dr. Sarvepalli Radhakrishnan

- **Early Life:** Born on **5th September 1888** in **Tiruttani, Tamil Nadu**.
- **Education:** Studied at **Christian College, Madras**, where he developed an interest in **philosophy and comparative religion**.

Academic Contributions

- Served as a professor at the **University of Mysore** and the **University of Calcutta**.
- Became the **first Indian to hold the Spalding Professorship of Eastern Religions and Ethics at the University of Oxford**.
- His major works include:
- **Indian Philosophy**
- **The Hindu View of Life**
- His writings helped introduce **Indian philosophical traditions and Hindu thought** to Western audiences.

Contribution to Education

- Considered **education an important tool for social transformation**.
- Emphasised the role of teachers in developing the **intellectual and moral foundation of society**.
- Chaired the **University Education Commission (1948–49)**, which suggested reforms for higher education in independent India.

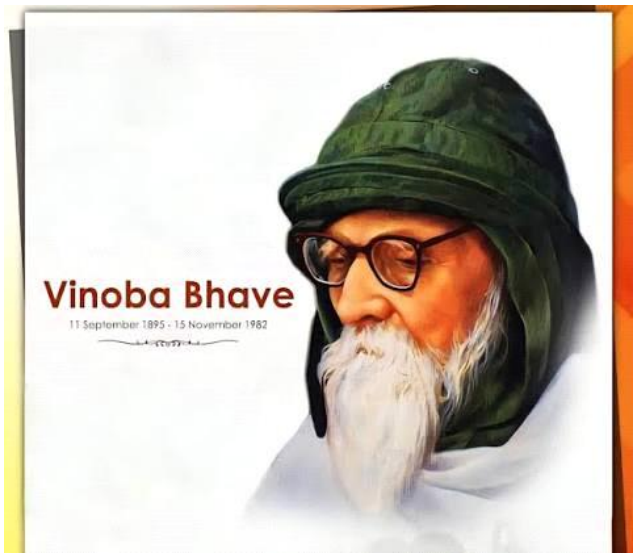
Political Career

- **Ambassador to the Soviet Union:** 1949–1952
- **First Vice President of India:** 1952–1962
- **Second President of India:** 13 May 1962–13 May 1967
- As President, he was associated with **parliamentary democracy, constitutional values and public service**.

Legacy

- Awarded the **Bharat Ratna in 1954** for his contribution to the country.
- Passed away on **17th April 1975**.
- His legacy continues through his contributions to **education, philosophy and public life**.

Acharya Vinoba Bhave



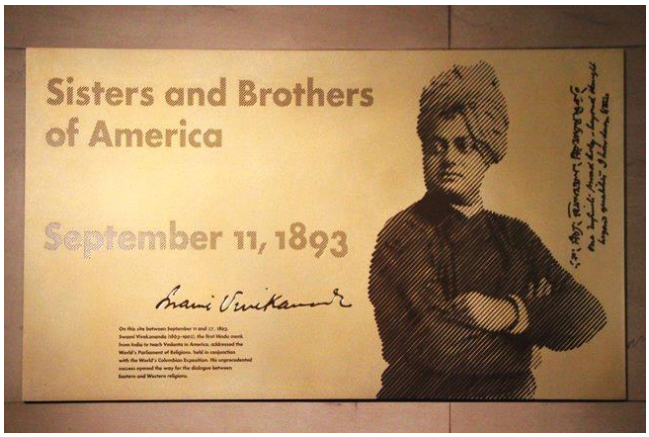
Why in News?

The Prime Minister paid tribute to **Acharya Vinoba Bhave** on his birth anniversary and recalled his message of **'Jai Jagat'**, which emphasised the welfare of humanity beyond social, political and geographical boundaries.

Key Facts About Vinoba Bhave

- **Early Life:**
- Vinayak Narahari Bhave, popularly known as **Acharya Vinoba Bhave**, was born on **11 September 1895** at **Gagode, Maharashtra**.
- He developed an early interest in **spirituality, Sanskrit, the Bhagavad Gita and the Upanishads**.
- **Association with Mahatma Gandhi:**
- Vinoba met **Mahatma Gandhi on 7 June 1916** and joined his Ashram.
- He adopted Gandhian principles of **non-violence, equality, austerity and village development**.
- In **1921**, Gandhi sent him to **Wardha** to manage an Ashram.
- He published the Marathi monthly **Maharashtra Dharma**, which carried essays on the **Upanishads**.
- The name **"Vinoba"** was given to him by **Mama Phadke**, an Ashram member.
- **Role in the Freedom Struggle:**
- Participated in the **Non-Cooperation Movement** and promoted **Swadeshi and Khadi**.
- Played an important role in the **Nagpur Flag Satyagraha of 1923** and was imprisoned.
- During his imprisonment in **Dhulia Jail in 1932**, he delivered discourses on the **Bhagavad Gita**, later published as *Gita Pravachane*.
- Gandhi selected him as the **first Individual Satyagrahi in 1940**.
- He spent several years in prison for his participation in **non-violent resistance** against British rule.
- **Sarvodaya Movement:**
- Inspired by Gandhi, Vinoba promoted **Sarvodaya**, meaning the **welfare and uplift of all**.
- It emphasised **social equality, decentralisation, non-violence and self-reliant villages**.
- **Bhoodan Movement:**
- In **1951**, Vinoba began a peace march through violence-affected **Telangana**.
- At **Pochampalli**, landless people requested land.
- He appealed to landlords to voluntarily donate land for the landless.
- A landlord's voluntary donation marked the beginning of the **Bhoodan (Land Gift) Movement**.
- The movement continued for **13 years**.
- He travelled about **58,741 km**.
- Around **4.4 million acres of land** were collected.
- Approximately **1.3 million acres** were distributed among landless farmers.
- **Social and Spiritual Work:**
- Established several **Ashrams** promoting simple and self-sufficient living.
- Founded **Brahma Vidya Mandir in 1959**, a women's community based on **self-sufficiency and simple living**.
- Also campaigned against **cow slaughter**.
- **Literary Contributions:**
- *Swarajya Sastra*
- *Geeta Pravachane*
- *Teesri Shakti (The Third Power)*
- **Awards and Recognition:**
- Received the **Ramon Magsaysay Award for Community Leadership in 1958**.
- Awarded the **Bharat Ratna posthumously in 1983**.
- **Death:**
- Acharya Vinoba Bhave died on **15 November 1982** at **Paunar, Wardha, Maharashtra**.

Swami Vivekananda and the 1893 Chicago Address



Why in News?

Recently, the Prime Minister remembered **Swami Vivekananda's historic 1893 Chicago Address**, highlighting its contribution to presenting India's **civilisational values, spiritual traditions and message of universal harmony** to the world.

Chicago Address, 1893

- **World's Parliament of Religions:** Swami Vivekananda addressed the Parliament of Religions in **Chicago on 11 September 1893**, beginning his speech with the famous words **"Sisters and Brothers of America."**
- **Religious Pluralism:** He emphasised the Hindu idea of accepting **different religions and spiritual paths** as valid ways to reach the same ultimate goal.
- **Universal Brotherhood:** He promoted **religious harmony, tolerance and peaceful coexistence**.
- **Criticism of Fanaticism:** He strongly opposed **sectarianism, bigotry and religious fanaticism**, calling for greater understanding among different faiths.

Swami Vivekananda

- **Early Life:** Born as **Narendra Nath Datta on 12 January 1863 in Kolkata**, he became a monk and the chief disciple of **Ramakrishna Paramhansa**.
- **Name Vivekananda:** In **1893**, at the suggestion of **Maharaja Ajit Singh of Khetri**, he adopted the name **Vivekananda**.
- **Kanyakumari Meditation:** In **December 1892**, he meditated on a rock off **Kanyakumari**, reflecting on India's past, present and future and the need for national and social regeneration.
- **Philosophy:** He popularised **Vedanta and Yoga** and developed **Neo-Vedanta**, linking spiritual development with material and social progress.
- **Spiritual Ideas:** Drawing from the **Upanishads, Bhagavad Gita, Buddha and Jesus**, he stressed:
- **Self-realisation**
- **Compassion**
- **Selfless service**
- **Unity of humanity**
- His idea of **"Jiva is Shiva"** highlighted service to human beings as a form of spiritual service.

Four Paths to Moksha

Vivekananda identified four major paths to spiritual liberation:

- **Raja Yoga** – discipline and meditation
- **Karma Yoga** – selfless action
- **Jnana Yoga** – knowledge and wisdom
- **Bhakti Yoga** – devotion

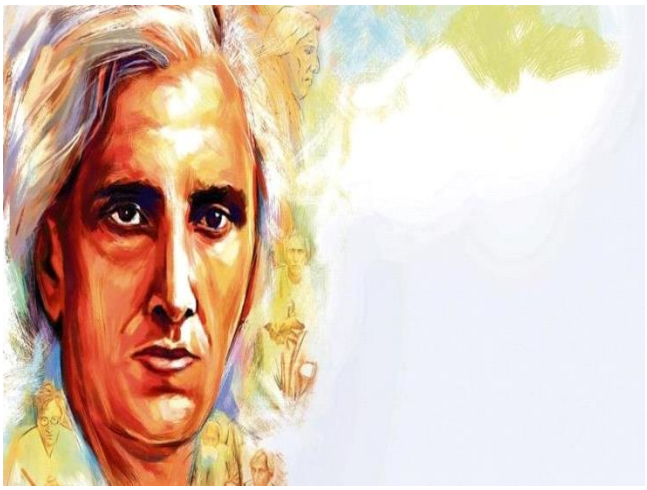
Education and Nationalism

- Advocated **man-making and character-building education** for social and national regeneration.
- His nationalism was based on **humanism, universalism, freedom and equality**.
- Emphasised the **upliftment of the masses** and **selfless service**.

Ramakrishna Mission

- Founded the **Ramakrishna Mission in 1897** to promote **education, social service and spiritual development**.
- Established **Belur Math in 1899** as an important centre of the Ramakrishna movement.

Saratchandra Chattopadhyay



Why in News?

The Prime Minister paid tribute to renowned Bengali writer **Saratchandra Chattopadhyay** on his **150th birth anniversary**, recognising his contribution to Indian literature and his portrayal of the **social realities of 19th-century India**.

About Saratchandra Chattopadhyay

- **Born:** 15 September 1876 in **Hooghly, Bengal Presidency**.
- **Died:** 16 January 1938 in **Kolkata**.
- He was one of the most influential **Bengali novelists and short-story writers** of the early 20th century.
- His writings portrayed **rural Bengal and Indian society** through social realism, emotional depth and criticism of social inequalities.

Major Works

His important literary works include:

- **Parineeta (1914)**
- **Devdas (1917)**
- **Srikanta (1917–1933)**
- **Choritrohin (1917)**
- **Pather Dabi (1926)**

Social Reform

- Criticised **patriarchy, caste discrimination, superstition and rigid social traditions**.
- Highlighted the importance of **social justice and human dignity**.
- His works often focused on the problems faced by disadvantaged sections of society.

Representation of Women

- Created strong and complex **female characters**.
- Highlighted the **sufferings, aspirations and struggles of women** in colonial Indian society.
- His female characters often questioned prevailing **social norms and restrictions**.

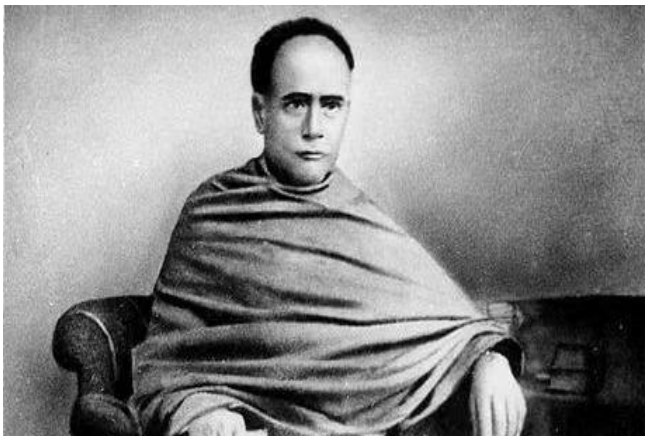
Nationalism and Political Association

- His writings reflected the influence of the **Indian freedom struggle**.
- **Pather Dabi** portrayed revolutionary activities against British colonial rule.
- Served as **President of the Howrah District Congress Committee from 1921 to 1936**.

Literary Legacy

- His works have been translated into **several Indian and foreign languages**.
- Many of his works have been adapted into **films and other forms of popular culture**.
- He remains an important figure in **modern Indian literature**, particularly for his portrayal of social inequality, human emotions and women's experiences.

Ishwar Chandra Vidyasagar



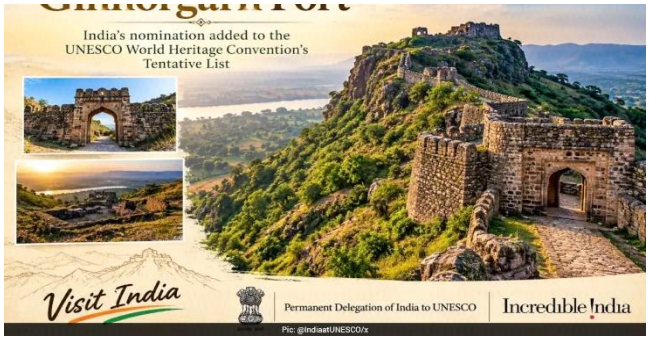
Why in News?

India observed the **207th birth anniversary of Ishwar Chandra Vidyasagar** on **26 September 2026**. He was a leading figure of the **Bengal Renaissance** and worked for **education, women's rights and social reform** in 19th-century India.

- **Early Life and Scholarship:** Born in **1820 in Bengal**, Vidyasagar joined **Sanskrit College in 1829**. He studied **Vedanta, Hindu law and Western philosophy** and received the title **"Vidyasagar" (Ocean of Knowledge)** at the age of 21.
- **Institutional Leadership:** He began his career as a **Head Pandit at Fort William College** and later became the **Principal of Sanskrit College in 1851**. He used these positions to promote wider access to education and modernise the education system.
- **Educational Reforms:** Vidyasagar opposed the **elitist nature of traditional education** and promoted education through the **vernacular language**.
- He supported the establishment of schools, including **schools for girls**.
- He simplified the **Bengali alphabet**, organising it into **12 vowels and 40 consonants**.
- His famous primer **Barnaparichay (Introduction to Letters)** became an important text for learning Bengali.
- **Women's Education:** Vidyasagar played an important role in promoting **female education**. Along with **Drinkwater Bethune**, he supported the establishment of the **Hindu Female School in 1849**, which later developed into **Bethune College**.
- **Opposition to Child Marriage:** Through his writings, including those published in **Sarva Subhakari (1850)**, he criticised **child marriage** on social, ethical and health grounds.

- **Hindu Widows' Remarriage Act, 1856:** Vidyasagar strongly campaigned for **widow remarriage**.
- He used **Hindu religious texts** to argue that scriptures did not prohibit widow remarriage.
- His writings, petitions and reform campaign contributed to the enactment of the **Hindu Widows' Remarriage Act, 1856**.
- **Opposition to Polygamy:** He also opposed **Kulin Brahmin polygamy**, where certain high-ranking Brahmin men entered into multiple marriages.
- He organised major **petition campaigns in 1857 and 1866** against the practice.
- **Reformist Approach:** Vidyasagar combined **rational thinking with reinterpretation of religious texts**. His approach showed that social reform could be supported through both **reason and scriptural arguments**.
- **Contribution to the Bengal Renaissance:** He continued the reformist tradition associated with **Raja Ram Mohan Roy** and became an important figure in the intellectual and social transformation of 19th-century Bengal.
- **Wider Influence:** His ideas on **education, women's rights, widow remarriage and social reform** influenced later reformers, including **Jyotirao Phule** and **Vishnu Shastri Pandit**.

India's New Additions to UNESCO Tentative List



Why in News?

The Ministry of Culture and Tourism announced the addition of **five new heritage properties and a serial transnational proposal** to India's **UNESCO Tentative List**. With these additions, India's total number of sites on the Tentative List has increased to **78**.

Bagh Cave Paintings – Madhya Pradesh

- Located on the southern slopes of the **Vindhyan Range** along the **Baghni River**.
- The site has **nine rock-cut Buddhist caves**, carved into the only sandstone outcrop in an otherwise basaltic region.
- Developed during the **Gupta period (4th–6th century CE)**.
- Inscriptions dating from **358–487 AD** indicate that the site was also an important **political and administrative centre**.
- The caves served as a major **Buddhist monastic complex**, containing *Chaityagrihas, Viharas, pillared verandas* and *Stupas*.
- The murals show technical similarities with the **Ajanta Caves**, while retaining a distinct regional style.
- Paintings used **earth and lime-based plasters** and mineral pigments such as **lapis lazuli, terre verte, red and yellow ochre and carbon**.

Udaigiri Caves – Madhya Pradesh

- Excavated mainly during the **late 4th and early 5th centuries CE** under **Chandragupta II and Kumaragupta I**.
- The complex consists of **20 rock-cut caves**.
- Famous for **Vaishnava iconography**, especially the **Varaha panel** and **Anantasayana Vishnu**.
- Also contains **Jain excavations**, showing religious coexistence during the Gupta period.
- Represents the transition from **rock-cut architecture to freestanding structural temples**.
- Combines **Mathura and Malwa artistic traditions** with Gupta classical aesthetics.

Group of Temples of the Chambal Valley – Madhya Pradesh

- Includes **Bateshwar, Padavali and Kakarmath** in Morena district.
- Built between the **8th and 11th centuries CE**.
- Associated with the **Gurjara-Pratihara and Kachchhapaghata dynasties**.
- Represents the **Nagara style of temple architecture**.
- Important features include:
- **Axial temple planning**
- Prominent **shikharas**
- Elaborate **sandstone carvings**
- Advanced **dry masonry construction**, using precisely interlocked stones without mortar.

Ginnorgarh Fort – Madhya Pradesh

- A **tribal hill-fort** located within the **Ratapani Wildlife Sanctuary**.

- Served as the fortified capital of the **Raj Gond rulers of the Garha Kingdom** between the **15th and 18th centuries**.
- After the defeat of **Rani Durgavati in 1564**, the region came under Mughal control while retaining strong Gond influence.
- The fort had three major zones:
- **Morcha:** Outer defensive and service area.
- **Amghera:** Administrative and military residential area.
- **Inner Royal Core:** Palaces and elite residences.
- The **Rani Mahal** contains rare Gond courtly wall paintings.
- Construction used local stone, lime and *surkhi*, along with organic binders such as **jaggery and Bael pulp**.
- Shows a cultural blend of **Gond and Mughal/Indo-Islamic architectural traditions**.

Rangpur-Sivasagar Historical Ensemble – Assam

- Represents the political, ceremonial and architectural centre of the **Tai Ahom Kingdom**.
- The Tai Ahoms entered Assam under **Siu-ka-pha in 1228 CE** and ruled the Brahmaputra Valley for around **600 years**.
- The Ahoms resisted Mughal expansion, notably in the **Battle of Saraighat (1671)**.
- **Rangpur** became the Ahom capital in **1704**, while Sivasagar later developed as an important political and cultural centre.
- Ahom architecture evolved from **wood and bamboo to brick and stone**.
- Ahom temples (*Dols*) feature **octagonal plinths and distinctive hybrid shikharas**.
- The Ahoms developed advanced **hydraulic engineering**, including large reservoirs such as **Joysagar, Gaurisagar and Sivasagar**.
- Important monuments include:
- **Rang Ghar** – an early surviving amphitheatre used for royal sports and Rongali Bihu celebrations.
- **Talatal Ghar** – royal palace and military citadel with underground levels.
- **Ghanashyam House** – combines Bengali, terracotta and Islamic architectural features.
- **Namdang Stone Bridge** – built in 1703 using a large stone monolith.

Sites of Satyagraha – Serial Transnational Proposal

- Proposed as a **serial transnational property** consisting of **nine components**:
- **2 in South Africa**
- **7 in India**
- The sites trace the development and geographical spread of **Gandhi's Satyagraha movement**.

South Africa

- **Pietermaritzburg Station:** Site of Gandhi's eviction from a first-class train in **1893**.
- **Phoenix Settlement:** Founded in **1904** and associated with *Indian Opinion* and Gandhian principles of truth and **Ahimsa**.

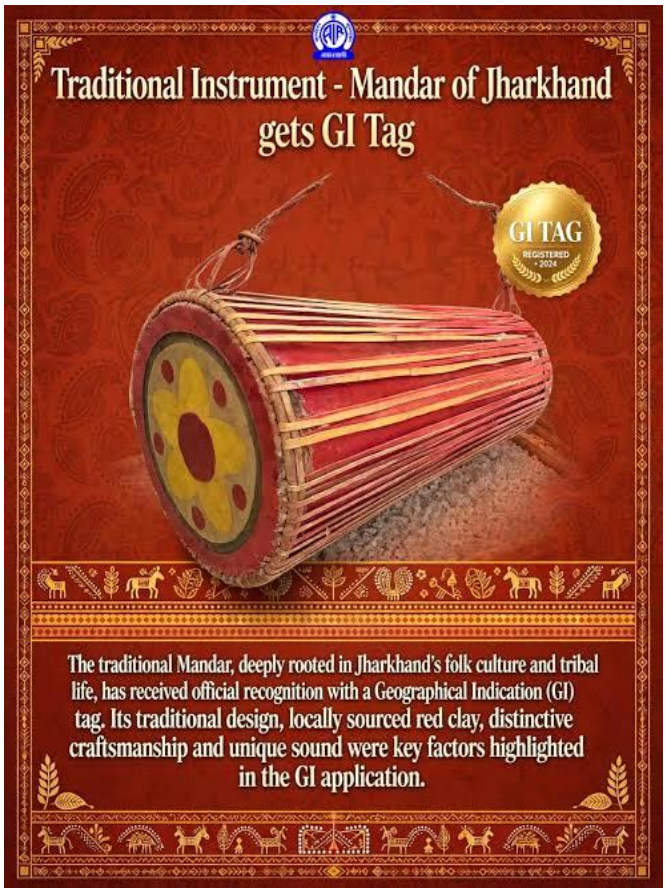
India

- **Champaran:** Site of Gandhi's first Satyagraha in India in **1917**.
- **Sabarmati Ashram:** Associated with the **Dandi March/Salt Satyagraha of 1930**.
- **Mani Bhavan, Mumbai:** Associated with the **Non-Cooperation and Civil Disobedience Movements**.
- **Harijan Sevak Sangh, Delhi:** Founded in **1932** for social equality and against untouchability.
- **Sevagram Ashram, Wardha:** Established in **1936**, focusing on rural development, self-reliance and Swaraj.
- **Aga Khan Palace, Pune:** Gandhi's detention site during **1942–44**.
- **Gandhi Smriti, Delhi:** Gandhi's last residence and the site of his assassination on **30 January 1948**.

UNESCO Tentative List

- It is an inventory of **cultural and natural heritage sites** that a country considers to have **Outstanding Universal Value** and suitable for possible inclusion in the World Heritage List.
- Inclusion in the Tentative List is a **mandatory prerequisite** for World Heritage nomination.
- A site generally needs to remain on the Tentative List for at least **one year** before nomination.
- After the latest additions, India has **78 sites** on the Tentative List.
- India has **43 inscribed World Heritage Sites**.

Mandar of Jharkhand Gets GI Tag



Why in News?

The traditional musical instrument **Mandar of Jharkhand** has received the **Geographical Indication (GI) tag** from the **Geographical Indications Registry, Chennai**. The recognition highlights its unique **geographical, cultural and traditional identity**.

Mandar

- **About:** Mandar is a traditional **percussion instrument** closely associated with the **tribal culture of Jharkhand**.
- It is commonly used during **folk performances, community gatherings and celebrations**.

Distinctive Features

- Its GI recognition is linked to:
- **Traditional craftsmanship**
- Use of **locally sourced red soil**
- **Indigenous manufacturing techniques**
- Its **distinctive sound quality**
- Unlike instruments such as **dhol and dholak**, Mandar has a unique construction.
- One side of the instrument is made entirely from **soil**, which contributes to its characteristic **sound and design**.

Significance of GI Tag

- Provides **legal protection** to traditional Mandar artisans.
- Gives the instrument a distinct **market identity**.
- Can create greater **market opportunities** for local artisans.
- Helps promote Jharkhand's **traditional cultural products** at national and international levels.

Other GI-Tagged Products of Jharkhand

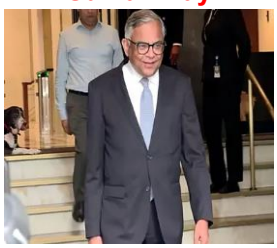
- **Sohrai-Khovar Painting** – Jharkhand's first GI-tagged product.
- **Koderma's Kesariya Kalakand** – another GI-recognised product from the state.

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PERSONS IN NEWS

Person / Institution	Why in News?	Key Facts
Sarah Peluse 	Received the **SASTRA-Ramanujan Award 2026** on 25 September 2026.	• Associate Professor of Mathematics at **Stanford University, USA**. • Award is given to mathematicians **aged 32 and under**. • Recognises work in mathematics influenced by **Srinivasa Ramanujan**. • Established in **2005**. • Carries a **$10,000 cash prize and citation**. • Presented annually by **SASTRA**.
ZT Lalrithangi (Pi Mari-i) 	Selected for the **FAO 100 Women Heroes in Agrifood Systems and Rural Development** recognition.	• **35-year-old farmer** from Sangau village, Lawngtlai district, **Mizoram**. • Recognition is linked to the **International Year of Women Farmers 2026**. • One of **100 women selected globally** from more than 600 nominations across **131 countries**. • One of **two Indian women** selected. • Recognition is given by the **Food and Agriculture Organization (FAO)**.
Flight Lieutenant Alfred Tyrone Cooke 	**Vir Chakra awardee** who died on 18 September 2026 at the age of 87.	• Served in the **Indian Air Force**. • Known for his role in the **1965 Indo-Pak War**. • Fought Pakistani Sabre jets over **Kalaikunda, West Bengal**. • Engaged **six Pakistani Sabre jets**, shot down one and damaged another. • Received the **Vir Chakra on 7 September 1965**. • Vir Chakra is India's **third-highest wartime gallantry award**, after the Param Vir Chakra and Maha Vir Chakra.
Warren Buffett 	Stepped down as **Chairman of Berkshire Hathaway** on 18 September 2026.	• Aged **96 years**. • Became **Chairman Emeritus** and remained a director on the board. • Served as chairman since **1970**. • Led Berkshire Hathaway's growth into a company valued at about **$1 trillion**. • The company operates in **insurance, rail transport, energy, manufacturing, retail and finance**.

Gondhal 	Selected as **India's official entry** for the Best International Feature Film category at the **99th Academy Awards**.	• **Marathi-language film**. • Selected by the **Film Federation of India**. • Chosen from **33 films** considered for the national entry. • The Academy Awards are presented by the **Academy of Motion Picture Arts and Sciences** in the USA. • The Best International Feature Film category covers feature-length films produced outside the US with predominantly **non-English dialogue**.
N. Chandrasekaran 	Reappointed as **Executive Chairman of Tata Sons** on 17 September 2026.	• Reappointed for another **five-year term**, extending his leadership until **2032**. • Tata Sons is the **principal holding company of the Tata Group**. • **Tata Trusts holds 66% stake** in Tata Sons. • Reappointment was approved by a majority vote at a Tata Sons board meeting. • **Noel Tata voted against** the resolution.
Michael Kremer 	Appointed **Chief Economist and Senior Vice President for Development Economics** of the World Bank Group.	• Appointment announced on **16 September 2026**. • Took effect from **1 October 2026**. • Succeeds **Indermit Gill**, who retired from the post. • The Chief Economist leads the World Bank's **research, data and analytical agenda**. • The Development Economics Vice Presidency works on **poverty, growth, trade, education, health and public finance**.
Anant Nag 	Selected for the **Dadasaheb Phalke Award 2024**.	• Veteran **Indian actor** with a career spanning more than five decades. • Honour announced by the Government of India on **16 September 2026**. • Award to be presented at the **72nd National Film Awards** ceremony in Kevadia, Gujarat. • Dadasaheb Phalke Award is **India's highest honour in cinema**. • Named after **Dhundiraj Govind Phalke**, regarded as the father of Indian cinema.
Vipul Misra 	Appointed **Acting Chief Executive Officer of SriLankan Airlines** on 9 September 2026.	• Appointment took effect **immediately**. • Continued to head the airline's **engineering division** while serving as Acting CEO. • SriLankan Airlines is the **flag carrier of Sri Lanka**. • Founded in **1979 as Air Lanka**. • Rebranded as **SriLankan Airlines in 1998**.

72nd National Film Awards 	Presented by President **Droupadi Murmu** on 22 September 2026.	• Held at **Ekta Nagar, Kevadia, Gujarat**. • Recognised achievements in Indian cinema for **2024**. • Winners were announced on **18 July 2026**. • Administered by the **Directorate of Film Festivals** under the Ministry of Information and Broadcasting. • Cover **feature films, non-feature films and writing on cinema** across Indian languages. • **Anant Nag** received the Dadasaheb Phalke Award for 2024.
Goa Police 	Received the **President's Colour** on 7 September 2026.	• Honour presented by **Union Home Minister Amit Shah**. • Ceremony held at **Dr. Shyama Prasad Mukherjee Indoor Stadium, Taleigao, Goa**. • Goa became the **fifth state police force** in India to receive the President's Police Colour. • The President's Colour is a ceremonial honour for units with **distinguished service**. • It is associated with **discipline, operational record and service to the nation**.
Suman Ray 	Appointed **Executive Director of the Reserve Bank of India (RBI)** with effect from 1 September 2026.	• Was serving as **Regional Director for Maharashtra** before his elevation. • RBI was established on **1 April 1935** under the **Reserve Bank of India Act, 1934**. • It is India's **central bank**. • Key functions include **monetary policy, currency management, banking supervision and payment systems**.

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