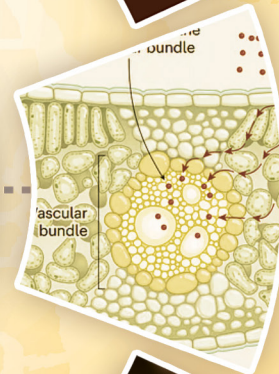
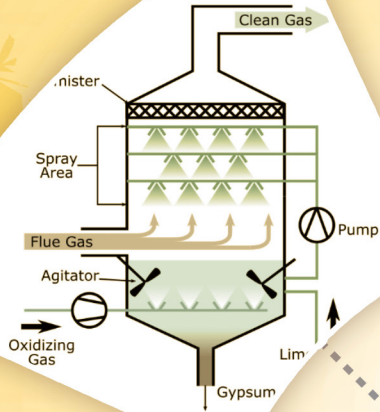


# FORTUNE Prelims Precise

April 2025





# Toppers from

## Kerala in Top 100





# Preface

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

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

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

Fortune Prelims Precise is available to all Prelims cum Mains batch students (2024) as part of the course study material. **It can be purchased from Fortune IAS Academy for Rs. 75 per issue.**



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## SC Ruling on Governor's Assent to Bills

- A Division Bench of the Supreme Court in **State of Tamil Nadu v The Governor of Tamil Nadu**, ruled that Tamil Nadu Governor R.N. Ravi's act of withholding 10 state bills without action was **illegal and erroneous**.
- SC used its **special powers under Article 142** while setting certain timelines while clarifying key aspects of **Article 200** of the Constitution (powers of the Governor regarding assent to bills passed by the State Legislature):
- **No Pocket Veto:** The Governor **cannot indefinitely withhold** assent without returning the bill. A bill lapses only if the legislature chooses not to act.
- **No Reservation After Reconsideration:** If a bill is returned, and the legislature **re-passes it without new provisions**, the Governor **cannot reserve** it for the President. Only if new, **unrecommended amendments** are introduced can it be reserved.
- **Judicial Review Allowed:** The Court held that the Governor's decision to reserve a bill **can be judicially reviewed**, overturning the 2019 B.K. Pavitra view.
- **Timelines for Assent:** Drawing from the **Keisham Meghachandra Singh** case, the Court said **delays by the Governor are subject to review**, and reasons must be provided.
- **President's Decision Timeline:** Though **Article 201** (deals with bills reserved by the Governor for the President's consideration) lacks a timeline, the Court directed that the **President must act within 3 months** on reserved bills. Otherwise, the state can seek a **writ of mandamus**.

Action	Timeline
If the Governor withholds assent or reserve the Bill for the President, on the aid and advice of the Council of Ministers,	Sent back to legislature in one month
Governor withholds assent contrary to the advice of the Council of Minister	Sent back to legislature in three months
Governor reserves the Bill for the President contrary to advice	Reserve bill within three months
If the legislature re-passes and re-presents the Bill	Assent within one month

## Waqf (Amendment) Act, 2025

- The Waqf Amendment Act, 2025 came into force amending the parent Waqf Act, 1995 and renaming it as **Unified Waqf Management, Empowerment, Efficiency, and Development Act, 1995**.
- **Waqf refers to properties dedicated exclusively to religious or charitable purposes** under Islamic law, where any other use or sale of the property is prohibited.

### Key Reforms in the Amendment Bill:

- » **Eligibility for Waqf Dedication:** Only practicing muslims (for atleast 5 years) can provide their property to Waqf.
- » **No 'Waqf by user':** Under the parent Waqf Act 1995, if a property has been used as Waqf property for a considerable time, despite there being no official declaration or endowment, could be considered as 'Waqf by user'.
  - The new law **removes this** and only recognises as waqf a property that is so declared or endowed as Waqf
- » **Protection of 'Waqf by user' Properties:** Already registered properties will remain with Waqf unless disputed or identified as government land.
- » **Women Rights in Family Waqf:** Women should receive their rightful inheritance before Waqf dedication by family.
  - There is special provision for divorced women, orphans & widows.
- » **Reduced Annual Contribution:** Waqf institution's mandatory contribution to Waqf Boards has been decreased from 7% to 5%.



» **Government Land:** An officer **above the rank of collector** to investigate Government properties claimed as Waqf, preventing unwarranted claims.

» **Ending Arbitrary Property Claims:** Act removes Section 40 from the parent Act, which provided the ultimate power to decide if a property is a Waqf property to the State Waqf Boards.

☞ This claim could have been only overturned by a Waqf Tribunal.

» **Non-Muslim Representation:** 2 non-muslims to be included in both Central Waqf Council & State Waqf Boards to ensure inclusivity.

» **Application of Limitation Act, 1963:** The Act will now apply to Waqf property claims.

☞ The Act **sets time limits (limitation periods) for filing suits**, appeals, and other legal proceedings.

» **Annual Audits:** Waqf institutions earning over 1 lakh annually to undergo audits by State Government appointed auditors.

» **Separation of Trusts from Waqf:** Muslim-centered trusts under any law will no longer be considered Waqf, ensuring full control over the Trusts.

» **Technology & Central Portal:** A centralized digital portal will automate Waqf property management, improving transparency & efficiency.

• If this condition is not met, the provision states that the transfer “shall be deemed to have been made by fraud or coercion or under undue influence” and can be **declared void if the senior citizen approaches the tribunal**.

## Vibrant Villages Programme (VVP) - II

• The Union Cabinet approved the Vibrant Villages Programme -II with the vision of Viksit Bharat@2047 for ‘Safe, Secured & Vibrant land borders’.

• VVP-II will be a **100% Central Sector Scheme** with full funding from the Union government and implementation period **till 2028–29**

☞ The VVP-I was aimed at **villages along the China border and was launched as a centrally sponsored scheme in 2023 till 2025**.

• It seeks to integrate border populations as the **‘eyes and ears’** of security forces.

• The programme also aims to saturate all villages in such blocks under **four thematic areas:** all-weather road connectivity, telecom connectivity, television connectivity, and electrification.

• The phase 2 will be implemented in **select strategic villages** in Arunachal Pradesh, Assam, Bihar, Gujarat, Jammu and Kashmir, Ladakh, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim, Tripura, Uttarakhand, Uttar Pradesh, and West Bengal.

## Senior Citizens Act

• The Supreme Court rejected a senior couple’s attempt to evict their son under the **Maintenance and Welfare of Parents and Senior Citizens Act, 2007**.

• The Act allows senior citizens (60+) unable to support themselves “from his own earnings or property owned by him” to seek **maintenance** from children or legal heirs..

• It places **an obligation on these children or relatives** to meet the parents’ needs “so that such parents may lead a normal life”.

• The Act also establishes **dedicated tribunals to hear these suits**, along with appellate tribunals to hear challenges to any orders passed.

• **Section 23** of the Act gives parents an avenue to receive maintenance even after transferring or gifting their property.

## Section 19 of POCSO Act

• The Supreme Court has agreed to **examine concerns over mandatory reporting** under Section 19 of the Protection of Children from Sexual Offences Act, 2012.

• The Act is a gender neutral law and raised the age of consent from **16 years to 18**.

• The Section 19 of the Act requires that **“any person”, who “has apprehension that an offence under this Act is likely to be committed or has knowledge that such an offence has been committed, shall provide such information” to the police**.



- A report made in good faith confers **immunity on the reporter** from any civil or criminal liability

☞ But the failure to report an offence is punishable.

- This includes **doctors**, who must report even consensual acts, deterring minors from seeking safe medical help and pushing them towards unsafe options.

## The Panchayat Advancement Index (PAI)

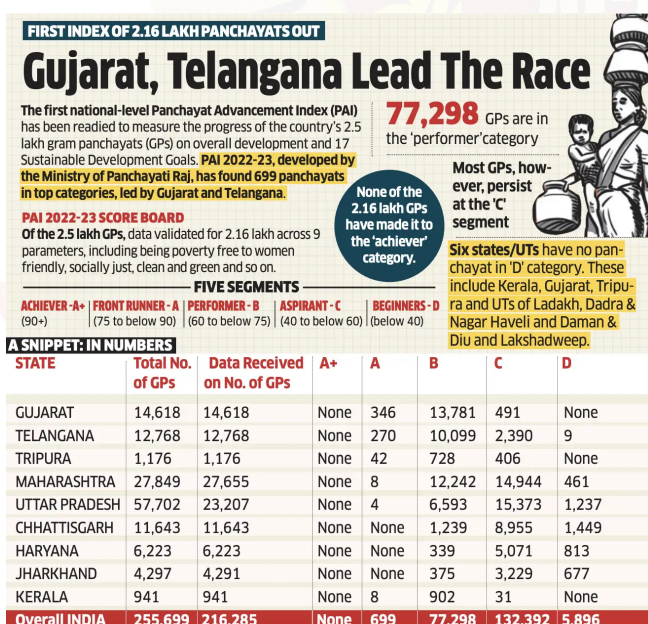
- **The Ministry of Panchayati Raj** has launched the PAI, a transformative tool **to measure the progress of over 2.5 lakh Gram Panchayats (GPs)** across India.
- It is a **multi-dimensional index** used to assess the implementation of **Localization of Sustainable Development Goals (LSDGs)** across **nine broad themes**.
  - ☞ These are **poverty-free and enhanced livelihoods** in panchayat, healthy panchayat, child-friendly panchayat, water sufficient panchayat, clean and green panchayat, panchayat with self-sufficient infrastructure, socially just and socially secured panchayat, panchayat with good governance and women-friendly panchayat.
- The panchayats were scored on a **scale of 0-100** based on these indicators and ranked in one of five categories: **Achiever (90-100)**, Front Runner (75-90), Performer (60-75), Aspirant (40-60) and **Beginner (below 40)**.

## Surrogacy for Unmarried Women

- The Bombay High Court recently asked a 38-year-old divorced woman with estranged children to approach the Supreme Court (SC) to seek surrogacy rights
- **Surrogacy** is a method of assisted reproduction where a woman (called a **surrogate mother**) agrees to carry and give birth to a child for another person or couple (called the **intending parents**).
- Surrogacy (Regulation) Act, 2021 of India provides for only **altruistic surrogacy** —where the surrogate mother is not paid except for medical expenses and insurance.
- Only **married Indian couples** (man 26–55 years, woman 23–50 years) who do not have a surviving child can opt for surrogacy (with exceptions for seriously ill children).
- A **single Indian woman** (widow or divorcee) aged **35–45 years** without a child (biological or adopted) can also opt for surrogacy.
- The surrogate must be a **married woman with a child of her own**, aged **25–35 years**, and can act as a surrogate **only once** in her lifetime.
- **Medical Indication Certificate** for infertility is required and a **Surrogacy Eligibility Certificate** from appropriate authority is mandatory before proceeding.
- **Single Indian men and foreigners are not allowed** to avail surrogacy in India

## Doctrine of Prospective Overruling

- The Supreme Court recently clarified on the correct application of the **doctrine of prospective overruling in judicial verdicts**.
- The doctrine of prospective overruling is a **principle that allows a court to overturn a previous legal interpretation** but declare that the new ruling will apply only to future cases and not to past actions or pending litigation
- However, the Supreme Court now says that when a **new judgment overrules** an old one, it is **by default retrospective** — meaning it applies to past and pending cases **unless** the Court **explicitly states** that it is to apply **prospectively only**.



- The Court noted that when an earlier precedent is overruled, it does not amount to laying down a new law, rather, the Court is **merely interpreting the law correctly or refining the existing law to better reflect the true intent** and objective envisioned by the legislature.
- In India, the doctrine was first applied in the landmark case of **Golak Nath v. State of Punjab (1967)**.
- The Supreme Court draws its authority to invoke this doctrine from **Article 142** of the Constitution, which empowers the Court to pass any order required to ensure complete justice in a case before it.













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## Best Mains Test Series (MTS) Results in Kerala

◇ ◇ ◇  
28 Toppers

 Nandana G P Rank 47	 Sonnet Jose Rank 54	 Krishna C Rank 139	 Amal P V Rank 158	 Alex Abraham P J Rank 165	 Rajath R Rank 169
 Gopika B Rank 185	 Sowmya Krishnan Rank 196	 Vineeth Lohidakshan Rank 211	 Hemanth Sankar P Rank 223	 Akshay Dileep Rank 246	 Niniya Thomas (Open Mock Test) Rank 254
 Lakshmi Priya P Rank 297	 Lakshmi Menon V Rank 310	 Manjima P Rank 321	 Aditya Narayan H Rank 357	 Swathy S Rank 377	 Nadiya A Rasheed Rank 429
 Najma Salam Rank 442	 Anand Pyarelal Rank 484	 Oormila J S Rank 563	 Hema V Rank 569	 Akshay Raj P Rank 641	 Anjali P Rank 702
 Ganga Gopi Rank 788	 Pranav P Mangath Rank 800	 R Srikanth Rank 904	 Nisa Unnirajan Rank 1000		

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## Economy

### Trade and Development Foresights 2025

- The recent report, titled **Trade and Development Foresights 2025 – Under Pressure: Uncertainty Reshapes Global Economic Prospects**, painted a bleak picture of mounting economic pressures.
- It was released by the **United Nations Trade and Development (UNCTAD)**.

#### Key Findings:

- » **Recessionary Trajectory:** Global growth is expected to slow to **2.3% in 2025, falling below the 2.5% threshold** that is often associated with a global recessionary phase.
- » **Fear Index:** It is a **gauge of US stock market volatility**, which reached its **third-highest level** on record, behind only the peaks during the COVID-19 pandemic in 2020 and the global financial crisis of 2008.
- » **Trade Weakness:** After a volatile year for trade, an early 2025 rebound seems to be fading.
  - ➔ **Shanghai Freight Index** fell **40%** between Jan–Mar 2025, returning to pre-pandemic lows.
- » **Strained Development Finance:** Developmental finance between nations are falling, social spending by nations are shrinking, while **defence spending rises** globally.
- » **India:** India is expected to grow by **6.5% in 2025** on the back of continued robust public spending and ongoing monetary easing.

### Basel Liquidity Norms

- The Reserve Bank of India (RBI) recently released the final guidelines for the Basel III Liquidity Coverage Ratio (LCR).



- The **Liquidity Coverage Ratio (LCR)** is a regulatory standard that requires banks to maintain a sufficient stock of **High-Quality Liquid Assets (HQLAs)** to manage liquidity crunch up to a 30-day period due to any sudden withdrawals of funds.
- HQLA are assets comprising mainly government securities, that banks can quickly convert to cash with minimal loss during a liquidity crisis.
- As part of **post 2008 Global Financial Crisis (GFC) reforms**, Basel Committee on Banking Supervision (BCBS) had introduced Liquidity Coverage Ratio (LCR) in 2010 as part of Basel III reforms.
  - In India, RBI has been rolling out a phased implementation of LCR in India after assessing the liquidity risks of various bank deposits.
- Further, as per **Banking Regulation Act, 1949**, the banks in India are required to hold liquid assets to **maintain Statutory Liquidity Ratio (SLR)**.
- RBI delayed implementation of the norms to 2019 to allow Indian banks, which already invest around **18% of deposits in government securities** under statutory liquidity ratio (SLR) rules, time to adjust.
- From 2019 onward, banks were allowed to count these SLR securities also as HQLA.
  - However, **Cash Reserve Ratio is not included** as the HQLA of banks.

### India's External Debt

- India's external debt increased by 10.7% yoy to \$717.9 billion at the end of December 2024 according to the Finance Ministry.
- **External debt** is the money a country owes to foreign lenders, including governments, international institutions, or private entities, and is typically repaid in foreign currency.
- **US dollar-denominated debt** remained the largest component of India's external debt, with a share of 54.8% in end-December 2024.
  - It is followed by Indian Rupee (30.6%), Japanese Yen (6.1%), SDR (4.7%) and Euro (3%).

- **Who owes the external debt: The share of outstanding debt** of non-financial corporations (like tech and manufacturing firms) in the total external debt was 36.5%, followed by deposit-taking corporations (except RBI) (27.8%), central government (22.1%) and other financial corporations (like insurance companies) (8.7%).
- **What kind of debt is it: Loans were the largest component** of the debt, with a share of **33.6%**, followed by currency and deposits (23.1%), trade credit and advances (18.8%) and debt securities (16.8%).
- **Debt service ratio:** 6.6% of current receipts. This means India is using 6.6% of its export earnings and other external income to pay interest and repay the principal on its foreign debt.
  - This is slightly better than the 6.7% in September 2024

### Cryptocurrency Trading

- **National Consumer Disputes Redressal Commission (NCDRC)** recently dismissed a lawsuit by Indian cryptocurrency investors against a cryptocurrency exchange.
- **Cryptocurrencies or virtual digital assets" (VDA)** are digital or virtual currencies secured by cryptography, making them resistant to counterfeiting.
- They operate on **decentralised networks using blockchain technology**, which functions as a distributed ledger maintained across multiple computers.
- While **cryptocurrencies or its trading is not illegal** in India, they are **not recognised as legal tender** to be used as currencies.
- In the present case, many investors lost money when a cryptocurrency exchange named **WazirX** faced a cyber attack.
- When millions of dollars worth cryptocurrencies were illegally withdrawn from the exchange in 2018, the investors took the case to NCDRC.
- NCDRC, however, ruled that cryptocurrencies in India **cannot be considered as a "good"** under **Consumer protection Act** and hence it cannot take up the case.
- It observed that **RBI neither regulated cryptocurrencies nor its exchanges**.



- NCDRC also observed that cryptocurrencies come within the **definition of property** under the **Income Tax Act** (and taxed at a rate of 30% since April 2022).

The **National Consumer Disputes Redressal Commission (NCDRC)** is the top consumer court in India, set up in 1988 under the Consumer Protection Act. It handles consumer complaints involving claims of ₹2 crore or more, hears appeals from State Commissions, and is headed by a former Supreme Court judge

## Stagflation

- The **Trump administration's tariff policies** are fueling stagflation conditions, according to the latest CNBC Rapid Update.
- Stagflation is an economic state characterized by **high inflation and slow economic growth (stagnation)** occurring simultaneously, often coupled with **high unemployment**.
- The US GDP growth is anticipated to be **0.3% in the first quarter of 2025** which would be a fall from the **2.3% GDP growth reported in the last quarter of 2024**.
- Stagflation was a major issue for the U.S. economy in the 1970s due to the costly Vietnam War and the loss of manufacturing jobs.
  - ☞ These conditions prompted the **Federal Reserve Chairman Paul Volcker** to implement a dramatic tightening of monetary policy in the late '70s and '80s known as the **"Volcker shock."**
- Despite these challenges, most economists are forecasting that **GDP growth will accelerate in the second quarter** to 1.4%, then further in the third quarter to 1.6% and by year-end to 2%.

## Amalgamation of RRBs

- **Department of Financial Services (DFS)** has notified amalgamation of 26 Regional Rural banks (RRBs) on the principles of **"One State One RRB"**.
- **Amalgamation** is a process **where two or more existing entities combine to form a new single entity**.
- The move aims to strengthen the **operational efficiency, financial viability, and regional focus** of RRBs.

- At present, **43 RRBs are functioning in 26 States and 2 UTs**.
- Post amalgamation, there will be **28 RRBs in 26 states and 2 UTs** with more than 22000 branches covering 700 districts.
- Their **predominant area of operation is in rural areas** with approx. 92% of branches in rural/semi urban areas.
- The amalgamation is being carried out under **Section 23A(1) of the Regional Rural Banks Act, 1976**, which allows such mergers in the public interest and for the development of the regions they serve.
- This is the fourth phase of amalgamation and the previous 3 phases led to reduction of RRBs from **196 to 43**.
- RRBs were **set up in 1975** based on the recommendations of the Narasimham Committee on Rural Credit, under the Regional Rural Banks Act, 1976.
- RRBs are **jointly owned** by the Central Government (50%), the Sponsor Bank (35%), and the concerned State Government (15%).

## Women and Men in India 2024

- The **Ministry of Statistics and Programme Implementation (MoSPI)** released the 26th edition of "Women and Men in India 2024," highlighting gender trends across sectors.

### Key Findings:

- Women now own 39.2% of **bank accounts** (42.2% in rural areas).
- Female-headed proprietary businesses have increased across sectors.
- Department for Promotion of Industry and Internal Trade (DPIIT)-recognized startups with **at least one woman director rose** from 1,943 in 2017 to 17,405 in 2024.
- While **female voter turnout dipped slightly** to 65.8% in 2024, it **surpassed male turnout**.
- **Education shows strong gender parity**, especially at primary and higher secondary levels.
- The **female labour force participation rate (FLPR)** also rose significantly from 23.3% in 2017-18 to 41.7% in 2023-24.

## Latest GI Tags

GI Tag	Place	Description
Nolen Gurer Sandesh	West Bengal	It is a winter treat that is prepared with fresh chhena or curdled milk and the prized ' <b>nolen gur</b> ' or <b>date palm jaggery</b> .
Baruipur guavas	West Bengal	Guava is cultivated in about <b>60%-70% of the agricultural land</b> in Baruipur region.
Kumbakonam vetrilai	Tamil Nadu	The betel leaf is found in the <b>Cauvery Delta region</b> .
Thovalai maanikka maalai	Tamil Nadu	A special type of garland that is <b>made only in Thovalai</b> . The flowers are intricately folded in a special manner with <b>multi-coloured flowers, typically oleander, rose, and sometimes other local flowers</b>
Kannadippaya	Kerala	The product derives its name (literally meaning <b>mirror mat</b> ) from its unique reflective pattern. Made from the <b>soft inner layers of reed bamboo</b> , the mat stands out for its unique properties providing <b>warmth during winter and cooling effect in summer</b> .
Warangal Chapata Chilli	Telangana	Also called as <b>Tomato chilli</b> , it is under cultivation in the villages of Nagaram of Jammikunta mandal for <b>more than 80 years</b> .

## World Social Report 2025

- The World Social Report 2025 was published by the United Nations Department of Economic and Social Affairs (UN DESA) in collaboration with the United Nations University World Institute for Development Economics Research (UNU-WIDER).
- UN DESA is a **department within the United Nations Secretariat** started in 1948.
- It provides **analysis, policy advice, and technical assistance** to UN member states.

### Key Findings of report:

- The social contract is under threat:** Rising insecurity and inequality are eroding trust and straining social bonds.
- Many people remain one misfortune away from poverty:** More than a third of the world's population **lives on between \$2.15 and \$6.85 a day**.
- Inequalities persist:** While the poorest half of the global population owned just 2% of all wealth in 2021, the richest 10% owned 76%, and billionaire wealth has soared since 2019.

- Gender disparity:** Women spend 4.2 hours daily on unpaid care work—over twice as much as men (1.7 hrs)—and earn only 35% of global labour income, a figure largely unchanged since 1990.
- Climate change hits the poorest hardest:** the bottom 50% emit just 12% of global greenhouse gases but suffer 75% of income losses, while owning only 2% of global wealth.

## Poverty and Equity Brief

- The **World Bank** released its biannual **Poverty and Equity Brief**.
- The briefs are released **twice a year for the Spring and Annual Meetings** of the World Bank Group and International Monetary Fund.
- These indicators cover various aspects of poverty using World Bank's international poverty lines - **\$2.15 per day for extreme poverty, \$3.65 for lower-middle-income, and \$6.85 for upper-middle-income**.

### Key Findings (India):

- The proportion of Indian people living in extreme poverty **fell sharply from 16.2% in 2011-12 to just 2.3% in 2022-23.**
- In Rural areas, extreme poverty fell from **18.4% in 2011-12 to 2.8% in 2022-23.**
- In Urban centres, extreme poverty reduced from **10.7% to 1.1%** over the same period.
- The **gap between rural and urban poverty shrunk** from 7.7% points to 1.7% points, with an annual decline rate of 16% between 2011-12 and 2022-23..
- The five most populous states i.e. Uttar Pradesh, Maharashtra, Bihar, West Bengal, and Madhya Pradesh, **represented 65% of India's extreme poor in 2011-12.**
  - 📍 By 2022-23, these states contributed to **two-thirds of the overall decline** in extreme poverty.
- **Non-Monetary Poverty**, as measured by the Multidimensional Poverty Index (MPI), which considers factors like **education, health, and living conditions**, declined from 53.8% in 2005-06 to 16.4% by 2019-21.



## International Relations

### PEN-Plus Approach

- The **WHO Africa** released a report on the innovative PEN-Plus strategy, adopted by the WHO African Region in 2022.
- The **PEN-Plus approach** (Package of Essential Noncommunicable disease interventions – Plus) is a healthcare strategy developed by the **World Health Organization (WHO) in 2022.**
- It was an improvement over the PEN approach launched in 2010 to address **severe, chronic noncommunicable diseases (NCDs)** like **type 1 diabetes, sickle cell disease, and rheumatic heart disease** in **low-resource settings.**
- PEN-Plus was originally developed in Rwanda and complements the existing WHO PEN by **targeting complex conditions at district hospitals.**
- The approach trains nurses and clinical officers to provide diagnosis, treatment, and psychosocial support.
- India began its implementation of the PEN-Plus strategy with **Chhattisgarh** in 2024.

### Mitra Vibhushana Award

- Prime Minister Narendra Modi was awarded the '**Sri Lanka Mitra Vibhushana**', the country's highest civilian honour.
- The **Sri Lanka Mitra Vibhushana (Sri Lankan Friendship Decoration)** honours **Heads of State and government heads** with whom Sri Lanka has cordial relations.
- Instituted in 2008 by then-president **Mahinda Rajapaksa**, it is the foremost among awards granted to foreigners.
- It is awarded at the **discretion** of the President of Sri Lanka and is the highest honour to non-Sri Lankan nationals.



- It was awarded only three times prior to this - **Maumoon Abdul Gayoom** (President of the Maldives) in 2008, **Mahmoud Abbas** (President of the Palestinian National Authority) – in 2014 and **Yasser Arafat** (Former President of the Palestinian National Authority) – Posthumously awarded in 2014.

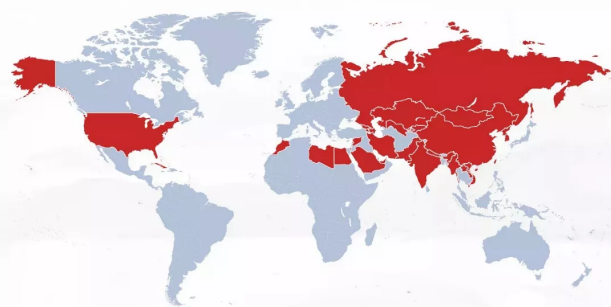


## The Ottawa Convention on Anti-Personnel Mines

- NATO members** Poland, Finland, and the Baltic states have recently **moved to withdraw** from the Ottawa Convention due to rising military threats from Russia.
- The **Ottawa Treaty (1997)** bans **anti-personnel landmines**, which cause significant harm to civilians, making up over 80% of victims (according to the International Committee of the Red Cross). even after wars have ended.
- The treaty defines **anti-personnel mines** as those triggered by a person's presence or proximity, designed to incapacitate, injure, or kill.
- Countries were **required to destroy their landmine stockpiles** within four years under the treaty.

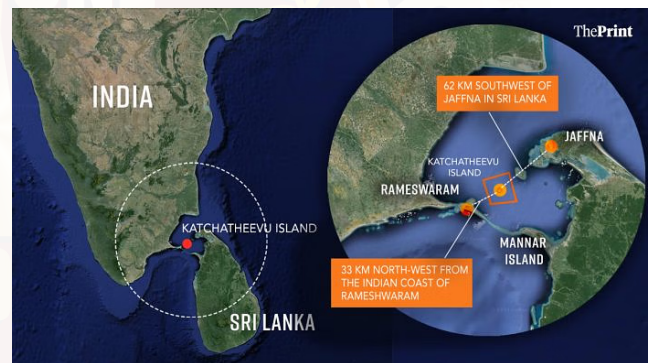
### Countries out of the Ottawa convention

Source: Landmine Monitor 2024



## Katchatheevu Island Issue

- The Tamil Nadu Legislative Assembly unanimously adopted a resolution urging the Union government to take steps to **retrieve the Katchatheevu island** from Sri Lanka.
- Katchatheevu is a **small uninhabited island in the Palk Strait**, a narrow body of water connecting the **Bay of Bengal to the Gulf of Mannar**.
- The island had been a disputed area between both nations and finally in 1974 through **Indo-Sri Lankan Maritime Boundary Agreement**, India recognized Sri Lanka's sovereignty over the island, but **Indian fishermen retained traditional fishing and pilgrimage rights**.
- The issue remains controversial **because Tamil Nadu fishermen often get arrested by the Sri Lankan Navy** when they fish near the island.
- In 2008, when Tamil Nadu argued that Katchatheevu could not have been ceded by India without a **constitutional amendment** (based on the Supreme Court's 1960 judgement in the **Berubari Union case**), the central government contended it was **not a transfer of territory, but a clarification of maritime boundaries**.



## Sudan Crisis

- On 15 April, Sudan marked two years of devastating civil war fought between the **Sudanese Armed Forces (SAF)** and the **Rapid Support Forces (RSF)**.
- In 2019, Sudan saw mass protests, triggered by **rising prices and repression against** the 30-year dictatorship of **Omar al-Bashir** that forced the military to remove him.
- A transitional power-sharing government was formed between civilians and the military, with key roles played by Gen. al-Burhan (SAF) and Gen. Hemedti (RSF).

- But in 2021, the **transitional agreement broke down** with Burhan consolidating his rule and trying to integrate RSF soldiers into the regular army.
- In April 2023, **fighting broke out** between SAF and RSF, turning into a **full-scale civil war** with two generals now locked in a **violent power struggle**,
- Two years of war have displaced over 12 million people and left 30.4 million people (more than half of Sudan's population) in need of humanitarian support.

SUDAN

### Border crossings

The Sudanese army and the RSF paramilitary force have been fighting for 16 days, killing more than 500 people and injuring nearly 4,600. The UN estimates 50,000 people have fled Sudan. The number of internally displaced people has yet to be determined.



- The treaty does not provide for any such unilateral suspension but rather a multi-tiered system for dispute resolution.
- **Tier I** - a **Permanent Indus Commission** with commissioners from both nations that meets yearly and does inspection every 5 years.
- **Tier II** - when dispute arises regarding technicalities of the treaty, it is to be resolved by appointing a **Neutral Expert**.
- **Tier III** - If the Neutral Expert fails to resolve the issue or if the dispute involves complex legal questions, the matter can be taken to the **Court of Arbitration**, which is a panel of independent legal experts appointed by both parties

## 1972 Shimla Agreement



## Indus Waters Treaty Suspended

- **The Indus Waters Treaty (IWT)**, which has survived three wars and decades of cross-border terrorism against India by Pakistan, was **suspended** (in abeyance) **for the first time** by New Delhi.
- India made its decision a day after the **attack on tourists in Pahalgam**, in which Pakistani terrorists took the lives of 26 people.
- The IWT is a water-sharing agreement between India and Pakistan, brokered by the **World Bank** and **signed in Karachi (1960)**.
- It provisioned that the waters of the **“Eastern Rivers”** of the Indus system namely the Sutlej, Beas and Ravi shall be available for the **“unrestricted use” of India**.
- **Pakistan** shall receive water from the **“Western Rivers”** — Indus, Jhelum, and Chenab.

- In response to India's decision to suspend the 1960 IWT, Pakistan's government said it could hold the **1972 Simla Agreement** in abeyance.
- The agreement was signed in Shimla (1972) between Prime Minister Indira Gandhi & Pakistan Prime Minister Zulfikar Ali Bhutto in the **aftermath of the 1971 Bangladesh Liberation War**.
- **Bilateral Resolution of Disputes:** The future of **post-war ties** between India and Pakistan and the resolution of the dispute over Jammu and Kashmir, where they **agreed to settle their differences by peaceful means** through bilateral negotiations.
- **Establishment of the Line of Control (LoC):** The ceasefire line was formalised as the Line of Control in Jammu and Kashmir.
- **Recognition of Bangladesh:** It is also the **first formal recognition of Bangladesh** as a sovereign entity in a bilateral treaty.



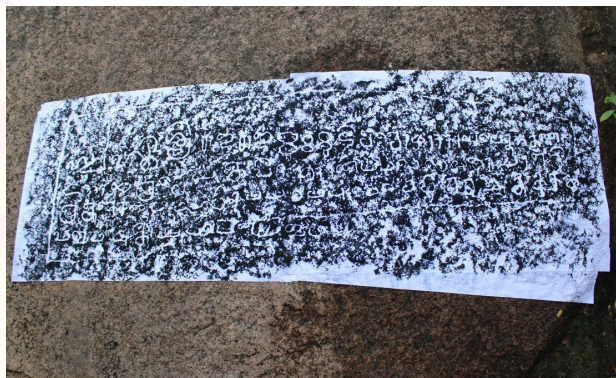
- **Non-Use of Force:** Both countries agreed to **refrain from the threat or use of force** against each other's territorial integrity, aligning with **the principles of the United Nations Charter**.
- Analysts suggest that if Pakistan attempts to cross the LoC, India could also then disregard the LoC and launch operations to claim parts of Pakistan occupied Kashmir.

## WHO's Pandemic Agreement

- Members of the World Health Organization (WHO) have **agreed to a legally binding treaty** aimed at improving pandemic preparedness.
- This marks only the second such agreement in WHO's history, after the **2003 tobacco control deal**.
- **Key elements** include the **WHO overseeing global supply chains** for personal protective equipment (PPE), pharmaceutical companies allocating 10% of their vaccine, therapeutic, and diagnostic production to the WHO, and providing another 10% at affordable prices.
- Member nations will **transfer health technologies to poorer countries** as agreed, and a Pathogen Access and Benefit-Sharing System (PABS) will speed up data exchange for faster drug development.
- The **US** was absent from final discussions after President **Trump's** withdrawal from the WHO.

## History & Culture

### Discovery of Rajaraja Chola Inscription



- A new inscription pertaining to Rajaraja Chola, which has been discovered recently atop **Somagiri hills at Melavalavu near Melur in Madurai district, Tamil Nadu**.  
 ➡ The inscription is dated to around 1,000 CE.
- The inscription begins with the honorific title - **Raja Raja Mummudichola**, a unique salutation found in this region, known as the **Pandya country**.
- The inscription talks of Rajaraja Chola's reign in the Pandya region and how a military commander called **Viranarana Pallavarayan** had captured the area and ruled here.
- **Raja Raja Chola I (985–1014 CE)** was one of the greatest rulers of the Chola dynasty, known for expanding the empire across South India, Sri Lanka, and the Maldives through military and naval power.
- He commissioned the grand **Brihadisvara Temple** at Thanjavur, a UNESCO World Heritage Site, and promoted Shaivism while remaining tolerant of other faiths.
- His **titles** included Rajakesari Varman, Peruvudaiyar, Mummudi Chola (meaning wearer of 3 crowns: Chola, Chera, and Pandya)



## Chittorgarh Fort

- The Rajasthan government recently informed the Supreme Court that it is taking steps to protect Chittorgarh Fort.
- Located in southern Rajasthan on the **Berach River**, a tributary of the Banas River, about 100 km northeast of Udaipur, Chittorgarh was the capital of **Mewar** from the 8th to 16th century and a stronghold of the Sesodia Rajputs.
- The fort faced **sieges** by Alauddin Khalji (1303), Bahadur Shah (1534–35), and Akbar (1567–68), with defenders choosing death and jauhar over surrender.
- Built by **Chitrangad of the Mori dynasty in the 7th century**, the fort is India's **largest**, spread over 700 acres and 180 metres above the plain.
- It was declared a **UNESCO World Heritage Site** in 2013 and houses palaces, Jaina and Hindu temples, and the famous Kirti Stambh and Vijay Stambh.



### Other Forts under UNESCO World Heritage List:

Fort	State/UT	Description
Red Fort	Delhi	Built in 1638 by Mughal Emperor Shah Jahan. It is renowned for its massive walls, the Diwan-i-Aam (Hall of Public Audience), & Diwan-i-Khas (Hall of Private Audience)
Agra Fort	Uttar Pradesh	Akbar initiated the construction and houses the Jahangir Mahal, Khas Mahal, Diwan-i-Khas, Diwan-i-Aam, and the iconic <b>Musamman Burj</b> , where Shah Jahan was imprisoned by his son Aurangzeb.
Amber Fort	Rajasthan	Built in the late 16th century by Raja Man Singh I, the fort is known for the famous <b>Sheesh Mahal (Mirror Palace)</b> .
Jaisalmer Fort	Rajasthan	Built in 1156 by Rawal Jaisal, it is one of the largest fully preserved fortified cities in the world.
Kumbhalgarh Fort	Rajasthan	Built by Rana Kumbha in the 15th century, the fort stretches over 36 kilometres. It is strategically located in the <b>Aravalli Range</b> and served as a refuge for the rulers of Mewar during times of conflict.
Ranthambore Fort	Rajasthan	The now dilapidated fort was built in the 10th century by the <b>Chauhan rulers</b> .

## Bodh Gaya Temple



- The All India Buddhist Forum has been protesting in Bodh Gaya, demanding the repeal of the **Bodh Gaya Temple Act (BTA), 1949**.
- The Act created an **eight-member Bodh Gaya Temple Management Committee (BTMC)** with equal representation from Buddhists and Hindus, chaired ex-officio by the district magistrate—typically a Hindu—leading to **concerns over Hindu dominance**.
- The temple, built by **Emperor Ashoka** in the 3rd century BCE and a **UNESCO World Heritage Site** since 2002, had come under Hindu control in 1590 during Akbar's reign.
- Bodh Gaya temple is located near the **Niranjana (Phalgu) River** and marks the spot where **Gautama Buddha attained enlightenment** under the **Bodhi Tree**, around **6th century BCE**.
- The temple has a **50-meter high spire**, with intricately carved sandstone, and reflects a mix of **Gupta and later architectural styles**.
- Includes the **Vajrasana** (Diamond Throne), the exact spot of Buddha's enlightenment, built by **Emperor Ashoka**.

## Memory of World Register

- Manuscripts of the Bhagavad Gita and Bharata's Natyashastra are among the 74 new additions to **UNESCO's Memory of the World Register** this year.
- UNESCO launched the **Memory of the World (MoW) Programme in 1992**.
- The central project of the MoW was **to create a compendium of documents** including manuscripts, oral traditions, audio-visual materials, and library and archive holdings

which are of "world significance and outstanding universal value".

📁 This is the **MoW Register**.

- The Register, updated biennially since **1997** (except 2017–2023), now has **570 entries**, including **13 from India**, such as the **Rig Veda (2005)**, works of **Abhinavagupta (2023)**, and archives from the **Non-Aligned Movement (2023)** and **Dutch East India Company (2003)**.

## Mehrgarh



- A team of international scientists has revised the age of **South Asia's oldest known farming settlement, Mehrgarh**, from 8000 BCE to 5200 BCE.
- Mehrgarh is a **Neolithic** archaeological site in **Balochistan, Pakistan**.
- It lies near the **Bolan Pass, west of the Indus River**, between Quetta, Kalat, and Sibi.
- The site was discovered in **1974 by the French Archaeological Mission**, led by archaeologists Jean-François Jarrige and Catherine Jarrige.
- For decades, Mehrgarh was cited **as evidence that agriculture may have arisen locally**, with domestication of plants like barley and animals such as zebu cattle thought to have occurred independently in South Asia.
- But the **new radiocarbon timeline suggests** that the earliest inhabitants of Mehrgarh were already practicing **a fully developed farming lifestyle**, including the use of West Asian domesticates, when they arrived.



## Wet-Bulb Temperature

- The widely accepted **wet-bulb temperature survival threshold of 35°C** is being questioned after recent physiological studies suggest the **limit may actually be closer to 31°C**.
- Wet-bulb temperature** is a measure that combines heat and humidity to show how well the human body can cool itself by sweating.
  - It's called **wet-bulb temperature** because it's measured using a **thermometer wrapped in a wet cloth (or wick)** over its bulb (the sensing part).
- Normally, when we sweat, the **moisture evaporates and cools our body**.
- But in **hot and very humid conditions**, this evaporation slows down.
- If the wet-bulb temperature reaches the temperature of human skin (**around 35°C**), **sweat can't evaporate at all — meaning the body can't cool itself**, which can quickly lead to heat stroke or death.
- In 2010, scientists suggested **35°C wet-bulb as the maximum survivable limit** for humans.
- But new research shows that people may **start experiencing serious health risks at a lower level** — around 31°C wet-bulb — especially if exposed for long periods.

## Mission Anveshan

- The Centre is considering extending **Mission Anveshan** to incentivize seismic surveys of sedimentary basins for mapping of oil and gas deposits by another year.
- Launched in fiscal year 2025, the programme aims to boost **energy security by identifying new reserves**.
- Under it, the government gives **incentives to state-run companies Oil and Natural Gas Corp. Ltd (ONGC) and Oil India Ltd** to carry out '**seismic data acquisition**', **processing, interpretation and mapping of oil and gas reserves**.

- It was launched in continuation of the **National Seismic Programme (NSP)** aiming at hydrocarbon resources in India's sedimentary basins.
- The goal is to assess the basins and highlight areas of hydrocarbon potential by conducting a **2D seismic survey in seven sedimentary basins**.
- These **basins** include Ganga-Punjab, Rajasthan, Saurashtra, Deccan Syncline, Cuddapah, Krishna-Godavari, and Chhattisgarh.

## Davis Strait Proto-Microcontinent



- A hidden landmass, now called the **Davis Strait proto-microcontinent**, has been discovered beneath the icy waters of the **Davis Strait**, separating Canada's **Baffin Island** and Greenland.
- This microcontinent, made up of unusually thick continental crust, measures **12 to 15 miles** (19 to 24 km) and is an ancient fragment of crust that never fully separated when **Greenland and North America** drifted apart.
- Similar geological structures, including those in **Jan Mayen, East Tasman Rise, and Guldren Draak Knoll**, have been found worldwide.

## Greening of Thar Desert

- The recent **"Greening of the Thar Desert"** report by researchers from India reveals a 38% rise in greening annually over the last two decades.



- It is largely driven by increased **monsoon rainfall, agricultural expansion, and groundwater resources**.
- Groundwater contributed 55%, while precipitation accounted for 45%.
- The **Thar Desert**, spanning **200,000 square kilometers** across **northwestern India** (Rajasthan, Gujarat, Punjab, and Haryana) and **southeastern Pakistan**, is known for hosting the world's highest population density for a desert.
- The region saw a **64% rise in precipitation** between 2001 and 2023.
- Additionally, there was significant agricultural growth, with **crop area** increasing by **74%** and **irrigated area** by **24%** from 1980 to 2015.

### Iron Opacity in Sun

- New research has found that **scientific theories have underestimated iron's opacity in Sun**.
- The sun primarily consists of **hydrogen** (about 74%) and **helium** (about 24%), with only about **2%** of its composition being heavier elements like iron, oxygen, carbon, and nitrogen.
- When light interacts with materials like **iron**, some of the light is absorbed, and some is scattered, influencing how energy moves in the star.
- How much **light an object absorbs is called its opacity**: the more it absorbs, the more opaque it is.
- Researchers subjected **a plasma containing iron to conditions expected at the star's radiation/convection zone boundary**, a layer about 30% of the way from the surface to its centre.
- They reported that depending on the frequency of radiation striking it, **iron's opacity was found to be 30-400% higher than predicted**.
- In essence, iron's higher opacity means less radiation can pass through certain layers, which could affect how the sun generates energy, possibly leading to changes in **temperature profiles** and the **overall dynamics** of the sun's interior.

### Helium in Sun

- Researchers from the **Indian Institute of Astrophysics (IIA)** in a new study have been able to accurately **estimate the abundance of helium in the sun's photosphere** for the first time.
- Astronomers have traditionally assumed the abundance of Helium in the photosphere of Sun-like stars to be **one tenth of that of Hydrogen**.
- This is assumed by **extrapolating from hotter stars, or from the outer atmosphere** of the Sun (solar corona, solar wind), or from seismology studies of the interior of the Sun.
- **None of these methods are based on direct observations** of the photosphere due to the absence of Helium spectral lines.
- The abundance of various elements in our Sun, or in any other star, is estimated from their absorption spectral lines.
- Since **Helium does not produce any observable spectral lines** from the visible surface, or the photosphere, of the Sun, its abundance has usually been estimated through indirect means.
- Now, the IIA researchers have used **magnesium and carbon features in the observed high-resolution spectrum** of the sun and have accurately calculated the abundance of Hydrogen.
- Since Helium is the **second most abundant element in the Sun after Hydrogen**, the abundance of Helium is linked to the abundance of Hydrogen.

## Environment & Ecology

### The International Big Cat Alliance (IBCA)

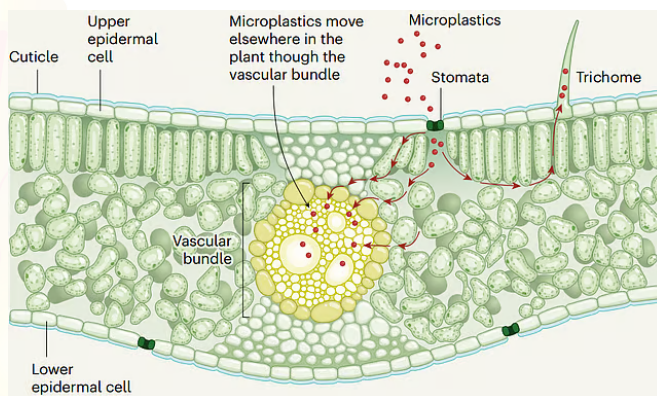
- The government and the International Big Cat Alliance (IBCA) recently signed an agreement **to establish the alliance's headquarters and secretariat in India.**
- The IBCA was launched by Prime Minister Narendra Modi in 2023, during the 50th anniversary celebration of 'Project Tiger'.
- It became a **treaty-based intergovernmental organisation** in 2025.
- So far, 16 countries have given their written consent to be part of the IBCA.
- There are 96 countries that harbour 'big cats' and **the alliance is also open to other countries**, conservation organisations, scientific organisations, businesses, and corporations **interested in supporting 'big cats.'**
- Globally, **the 'big cats' include** the tiger, lion, leopard, snow leopard, puma, jaguar, and cheetah.
  - ☞ Barring the puma and jaguar, the rest are found in India.

### Leaves Absorb Microplastics

- A study, published in the **journal Nature**, revealed that plant leaves can absorb microplastics and nanoplastics **directly from the air.**
  - ☞ This discovery marks the potential for these particles to enter the food chain.
- Microplastics are defined as plastic particles **measuring up to 5 millimetres in diameter**, while **nanoplastics are even smaller, less than 1,000 nanometres.**
- Plastic particles enter leaves through multiple pathways, including surface structures such as **stomata and the cuticle.**

- Stomata are **small pores formed by specialised cells**, while the **cuticle is a protective membrane coated in wax**, which makes it particularly conducive to absorbing microplastics.
- The study also found that **microplastics could travel through the plant's water and nutrient transport systems** to reach other tissues.

☞ However, **trichomes that are hair-like appendages on cells** acted as 'sinks' that trapped external particles, thereby limiting the transport of plastics from leaves to roots.



### Ozone Pollution & Food Security

- According to a study by the **Indian Institute of Technology (IIT) Kharagpur**, **surface ozone pollution is having a significant impact on India's major food crops**, particularly in the Indo-Gangetic Plain and central India.
- The study is titled '**Surface ozone pollution-driven risks for the yield of major food crops under future climate change scenarios in India**'.
- Surface ozone is a strong oxidant** that damages plant tissues, leading to visible foliar injuries and reduced crop productivity.
- The study utilises data from the **Coupled Model Intercomparison Project phase-6 (CMIP6)** to assess both historical trends and future projections of ozone-induced yield losses.
- Findings indicate that under high-emission scenarios, **wheat yields could suffer an additional 20% reduction**, with **rice and maize experiencing losses of about 7%.**

### The Coupled Model Intercomparison Project (CMIP):

- It is a collaborative framework designed to improve knowledge of climate change.
- It was organized in 1995 by the Working Group on Coupled Modelling (WGCM) of the **World Climate Research Programme (WCRP)**.

### Himalayan High-Altitude Atmospheric Centre

- India's first **climate change station** was inaugurated in **Nathatop**, Udhampur district, Jammu and Kashmir, by the Central University of Jammu.
- The **Himalayan High Altitude Atmospheric and Climate Research Center** aims to study atmospheric and climate phenomena in the region.
- The site, chosen for its clean air and minimal pollution, is a **collaboration** between the Ministry of Science & Technology, the Jammu and Kashmir government, the Central University of Jammu, and the Swiss National Science Foundation.
- The center's first measurements, part of the **ICE-CRUNCH project**, will focus on ice-nucleating particles and cloud condensation nuclei to study their impact on cloud microphysics and climate systems in the Himalayas.
- **ICE-CRUNCH**
- It stands for "Ice nucleating particles and cloud condensation nuclei properties in the North-Western Himalayas".
- It is a **Indo-Swiss Joint Research Project** aimed at exploring the properties of ice nucleating particles and cloud condensation nuclei in the region.

### ENSO Neutral Condition

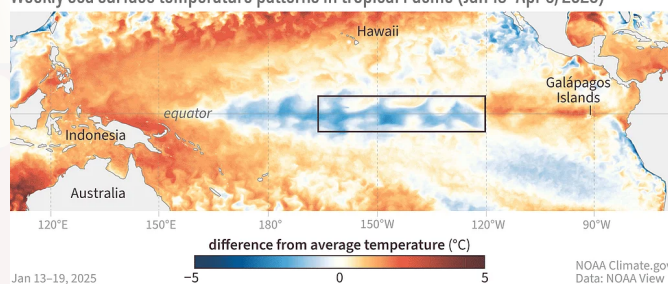
- The recent **La Niña event in the tropical Pacific** has officially ended, according to the United States' National Oceanic and Atmospheric Administration (NOAA).

- However, Oceanic and atmospheric patterns **now reflect ENSO-neutral conditions** — a phase expected to **persist through the Northern Hemisphere summer**, with a **greater than 50% likelihood lasting into the autumn**.
- **ENSO, or El Niño Southern Oscillation**, is a recurring climate pattern involving changes in the temperature of waters in the central and eastern tropical Pacific Ocean.
- **It affects not only sea-surface temperatures (SST) but also wind patterns, atmospheric pressure and rainfall across large parts of the globe.**

#### ➡ **La Niña and El Niño are the two opposing phases of ENSO.**

- ENSO-neutral, by contrast, describes a state where neither El Niño nor La Niña is dominant.
- While neutral phases tend to make **global seasonal forecasts more uncertain**, they are often a **transitional period** between the two more extreme phases.
- This quick shift to neutral conditions happened as warm water spread westward across the eastern Pacific and the pool of cooler water below the surface began to shrink.
- Some signs of La Niña in the atmosphere (like strong trade winds) were still present, but **without the cold surface water**, the system no longer qualified as La Niña.

Weekly sea surface temperature patterns in tropical Pacific (Jan 13–Apr 6, 2025)



### Domoic Acid

- **An algal bloom near California's coast** has caused usually friendly **sea lions to become aggressive** and attack humans.
- These animals aren't attacking humans because they want to, instead, **a neurotoxin released by the algal bloom** is altering their neural networks and causing them to experience unbearable stress, aggression, muscle spasms and permanent brain damage.



- **Domoic acid**, which is secreted by the algae diatom **Pseudo-nitzschia**, is a known marine neurotoxin that enters the food chain and affects not just small fishes but also larger animals that feed on these fishes.
- The neurotoxin can eventually reach humans too and in high amounts, it is a lethal poison.

### Simlipal National Park

- The Odisha government recently notified the Similipal Tiger Reserve (STR), **the world's only home to wild melanistic tigers, as a national park.**
- It is the **107th national park** and the second in the eastern state, after Bhitarkanika.
- Similipal, located in Odisha's Mayurbhanj district, is home to **40 royal Bengal tigers**, shelter to **25% of Odisha's elephant** population and 104 orchid species, many endemic to the region.
- It is a haven for over 360 species of birds, and diverse mammals like leopards, sambar, and mugger crocodiles.
- The forests of Similipal are a **mix of sal trees, moist deciduous, and semi-evergreen types.**
- The tigers of Similipal possess **higher-than-normal levels of melanin**, giving them coats that are more black with yellow stripes.
- Due to their unique lineage, they may be accurately described as **pseudo-melanistic**



### Marine Fisheries Census

- The 5th National Marine Fisheries Census (MFC25) will be conducted from November to December, covering **1.2 million fishermen households across India's coastal states.**

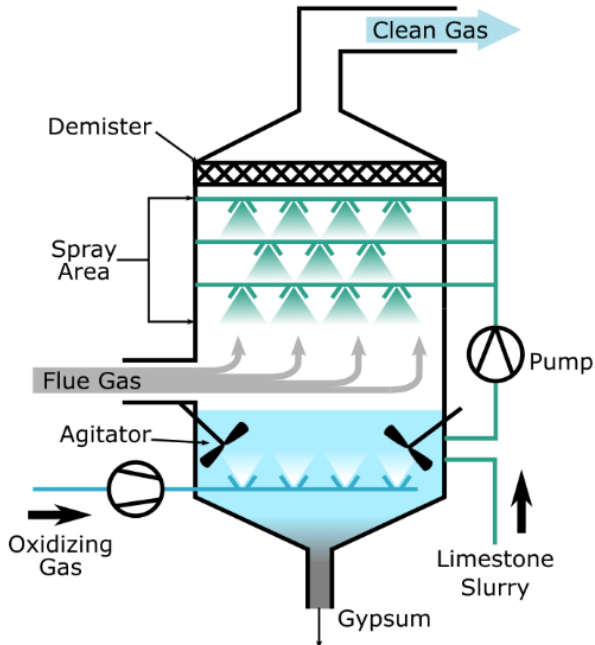
- The census, **last conducted in 2016**, will document the socio-economic conditions of marine fishermen and map fisheries infrastructure.
- **Local enumerators** will reach every fisherman household for this **45-day survey**, coordinated under the **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** by the Ministry of Fisheries.
- The **ICAR-Central Marine Fisheries Research Institute** will lead the census on the mainland, while the **Fishery Survey of India** will handle data collection in Union Territories.
- For the first time, data collection will be digital and real-time, using the '**VyAS-NAV**' app developed by ICAR-CMFRI.

### Baku to Belém Roadmap

- During the recently held 11th BRICS Environment Ministers' meeting in Brazil, India called upon BRICS nations **to mobilise \$1.3 trillion for climate financing.**
- The goal of the '**Baku to Belém Roadmap to 1.3T**' is to scale up climate finance for developing countries, aiming to mobilise at least \$1.3 trillion per year by 2035.
- The 'Baku to Belem Roadmap' is a **finance mobilisation framework initiated between COP29 (Baku, Azerbaijan) and COP30 (Belem, Brazil)** to the United Nations Framework Convention on Climate Change (UNFCCC).
- The group, which earlier comprised Brazil, Russia, India, China, and South Africa, now has 11 countries as its members, collectively negotiating for climate governance at multilateral forums, including the UN climate conference.

# Science & Technology

## Flue Gas Desulphurisation

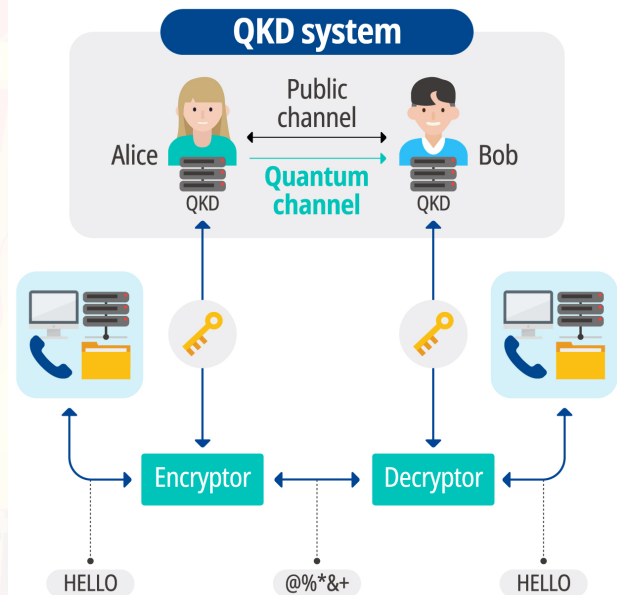


- The Union Environment Ministry's 2015 policy mandated that **all 537 coal-fired plants** in India install **Flue Gas Desulphurisation (FGD) systems** to reduce sulphur dioxide (SO<sub>2</sub>) emissions.
- However, a study by the **National Institute of Advanced Studies (NIAS)** recommended limiting this requirement to plants using imported or high-sulphur coal, as 92% of Indian coal has low sulphur content.
- Flue Gas** refers to the gases emitted from a chimney, flue, or stack after the combustion of fossil fuels like coal, oil, or natural gas in industrial processes like power generation or manufacturing.
  - These gases can contain pollutants, including carbon dioxide (CO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), and particulate matter.
- Flue Gas Desulphurisation (FGD)** is a process used to remove sulfur dioxide (SO<sub>2</sub>) from the flue gases of power plants and other industrial sources.
- FGD systems typically come in two main types:
  - ★ **Wet FGD:** Uses an alkaline slurry, usually made of limestone and water, to absorb and neutralize sulfur dioxide.

★ **Dry FGD:** Uses dry reagents, such as lime or sodium-based compounds, to absorb SO<sub>2</sub> from the flue gases

- Study also found that Installing FGD in all plants would **increase power and freshwater consumption**, leading to an additional 69 million tonnes of CO<sub>2</sub> emissions

## Quantum Key Distribution (QKD)

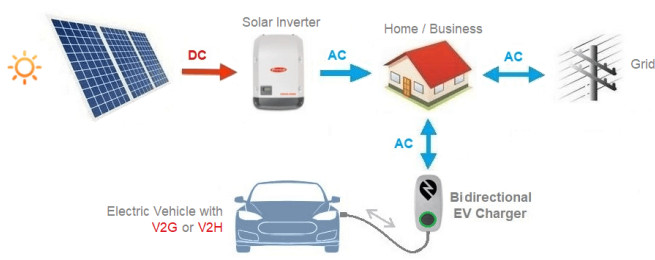


- In a major milestone, India's **first Quantum Key Distribution (QKD) transmission** over a **4-core Multi-Core Fibre (MCF)** has been successfully tested by the Centre for Development of Telematics (C-DOT) and Sterlite Technologies Ltd (STL).
- QKD is a secure way of sharing cryptographic keys** (string of bits used to encrypt and decrypt messages) between two parties using the laws of **quantum mechanics**.
  - It uses **quantum particles (usually photons)** to generate a random key.
- If anyone tries to intercept the key, the act of measuring the quantum particles disturbs them—**alerting the sender and receiver to eavesdropping**.
- Traditional optical fibres** have one core (the part that carries light) but MCF enables multiple data streams through distinct cores in a single fibre, saving space and cost.
- It also **allows physical separation of quantum and classical signals**, enabling simultaneous QKD and high-capacity data transmission without signal interference.

- QKD ensures **ultra-secure key sharing** using quantum mechanics.
- C-DOT is India's telecom R&D body under the **Department of Telecommunications**.

## Vehicle-to-Grid (V2G) technology

- **The Kerala State Electricity Board (KSEB) and the Indian Institute of Technology Bombay (IIT Bombay)** have initiated a pilot project to explore the implementation of Vehicle-to-Grid (V2G) technology across the State.
- V2G refers to technologies that enable **EV batteries to send power back to the grid**.
- When an EV is not in use, it can act as a **decentralised battery energy storage device**.
- **An idle EV, when connected to a bi-directional charger**, can provide support to the distribution grid.
- By incorporating V2G technologies, EVs offer an opportunity to facilitate the integration of Renewable Energy (RE) and **support a demand response market**.
- Technologies for integrating an EV to the grid will need to consider both the charging and discharging of EV batteries.



## Type 5 diabetes

- The International Diabetes Federation (IDF) has officially recognised **malnutrition-related diabetes** as **"Type 5 diabetes"** at its World Diabetes Congress in Bangkok.
- First described in Jamaica in 1955, this form of diabetes mostly affects **lean, malnourished teens and young adults** in low- and middle-income countries, with an estimated **25 million cases globally**.

- Often misdiagnosed as Type 1 or 2, it has a **distinct metabolic profile** likely linked to impaired pancreatic development due to **chronic childhood undernutrition**.
- Type 5 diabetes is marked by **low insulin secretion, low glucose production, and high glucose uptake**, making standard insulin therapy unsuitable and potentially dangerous.
- Emerging evidence suggests that **low-dose insulin with oral agents** may offer a safe, cost-effective treatment.
- Importantly type 3 and type 4 Diabetes has not been officially recognised yet.
  - **"Type 3 diabetes"** is a **proposed** term for **Alzheimer's disease**, suggesting it may be linked to brain insulin resistance.
  - **"Type 4 diabetes"** refers to insulin resistance in **older adults** who are not overweight or obese, potentially underdiagnosed.

## TYPES OF DIABETES



### TYPE 1 DIABETES

is characterized by deficient insulin production & requires daily administration of insulin. The cause is not known & it is not preventable.



### TYPE 2 DIABETES

results from the body's ineffective use of insulin. This is the most common diabetes. It is largely the result of excess body weight & physical inactivity.



### GESTATIONAL DIABETES

occurs when the body can't make enough insulin during pregnancy. It increases risk of complications during pregnancy and at delivery.

## Three Gorges Antarctic Eye Telescope

- China recently inaugurated **the Three Gorges Antarctic Eye** at the **Zhongshan Station, Antarctica**.
- The Telescope is a **3.2-metre aperture** radio/millimetre-wave telescope.
- It is designed to observe **neutral hydrogen (HI) and ammonia (NH<sub>3</sub>)**—two key markers in the vast nurseries where stars are born.

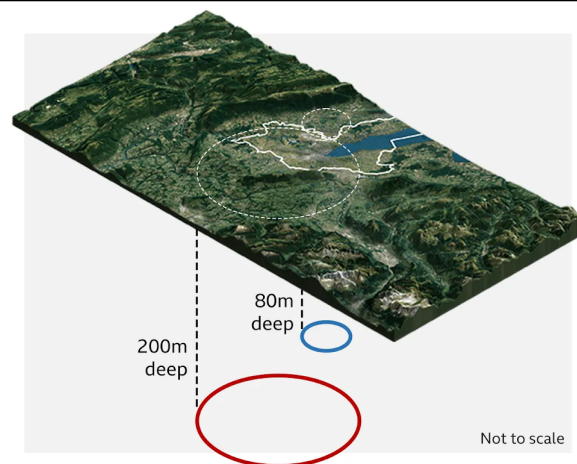
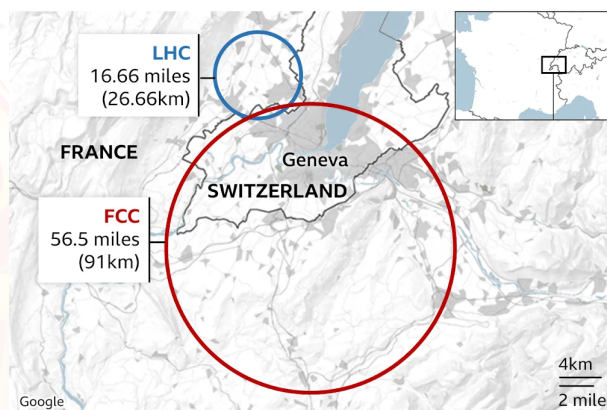


- By **mapping and analyzing these gases**, scientists aim to piece together a clearer picture of the **star formation process, galactic structure**, and the life cycles of cosmic matter.
- The telescope could survive temperatures that **plunge below  $-50^{\circ}\text{C}$**  and withstand wind speeds that could flatten a truck.
- At present, **70 permanent research stations are scattered across Antarctica**, representing 29 countries from every continent on Earth.
  - India has two active research stations – **Maitri and Bharti**.
  - The US has six stations and Australia has three.



- The FCC-hh aims to reach collision energies of **100 TeV (teraelectronvolt)**, colliding protons and also heavy ions, and running until the end of the 21st century.

#### Proposed particle collider will be largest ever



Source: Cern

B B C

### The Future Circular Collider (FCC)

- CERN, the **European Organization for Nuclear Research** which runs the **Large Hadron Collider (LHC)**, is pushing plans to build the three-times bigger (and faster) Future Circular Collider, which could cost as much as 20 billion euros.
- The FCC is planned as an underground circular tunnel with a **circumference of 90.7 km** and access shaft depths between 180 and 400 m, with eight surface sites and four experiments.
- The tunnel would initially house the **FCC-ee, an electron-positron collider** for precision measurements offering a 15-year research programme from the late 2040s.
- A second machine, the **FCC-hh**, would then be installed in the same tunnel, reusing the existing infrastructure, similar to when the **LHC replaced the Large Electron-Positron collider (LEP)**.

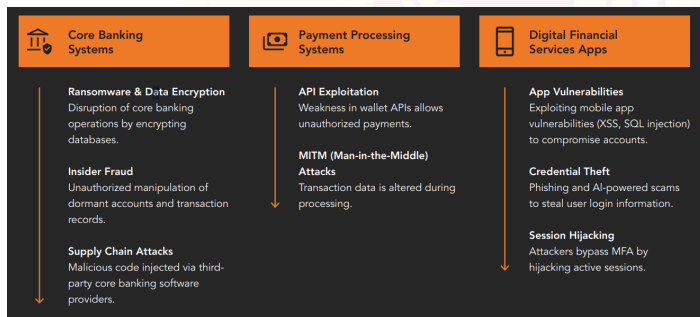
### IVF-ET Technology

- Puducherry has witnessed the birth of its first calf through **In-Vitro Fertilized Embryo Transfer (IVF-ET)** at Kanuvapet village, marking a milestone in cattle breeding.
- It was launched in 2024–25 under the **Rashtriya Gokul Mission**, a central government scheme launched by the **Ministry of Fisheries, Animal Husbandry and Dairyin**.
- The scheme aims to produce **high-yielding female calves** from elite milch cows and buffaloes, targeting up to 5,000 litres of milk per lactation.
- The procedure costs ₹21,000 per cow, with ₹5,000 subsidized under the Mission and the remaining ₹16,000 covered by the Puducherry government.

- **IVF-ET** involves fertilizing eggs outside the body and implanting selected embryos into recipient cows, enabling rapid genetic improvement and better herd productivity.

## The Digital Threat Report 2024

- **The Ministry of Electronics and Information Technology (MeitY)** launched the Digital Threat Report 2024 for the Banking, Financial Services, and insurance (BFSI) sector.
- It is a **collaborative effort by SISA (Strategic Information Services Agreement)**, a global cybersecurity company, in collaboration with the **Computer Emergency Response Team (CERT-In, MeitY)** and **CSIRT-Fin** (Financial Sector Computer Security Incident Response Team).
- The report highlighted the issues like **AI-Driven Cyber Threats** including automated exploitation of vulnerabilities, **Ransomware Attacks**, and **Third-Party Breaches**.
  - Other vulnerabilities include **Mobile Security Threats**, and **Digital Payment Vulnerabilities** (Digital transactions are projected to reach **\$3.1 trillion by 2028**).



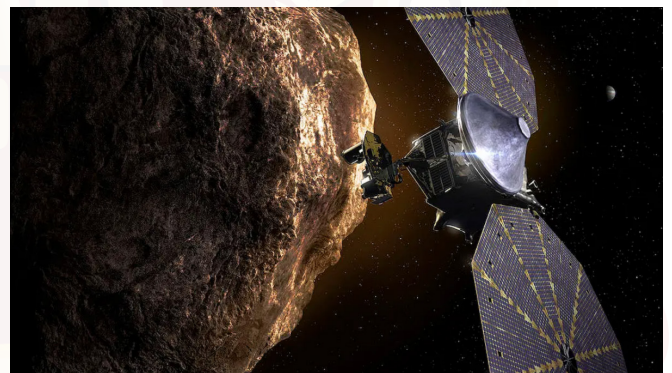
## ESA Biomass Mission

- **The European Space Agency (ESA)** successfully completed the launch of its **Biomass satellite** from the European Spaceport in Kourou, French Guiana.
- The mission will **map the world's forests to provide the very first comprehensive measurements of forest biomass** at a global scale.
- The data on forest biomass — **the mass of organic matter in forests** — are severely lacking on a global scale.
- To fulfil its objectives, the mission will **use a synthetic aperture radar (SAR) to map the Earth's surface**.

- This SAR sensor will operate in the long-wave P-band frequency range, **with a wavelength of 70 cm**.
- The **Biomass antenna reflector transmits the radar's footprint** onto Earth's surface and receives the returned signal, which carries information about the carbon content of forests.

## Lucy Spacecraft Flyby

- **NASA's Lucy spacecraft** successfully flew past **asteroid (52246) Donaldjohanson** at 48,000 km/h, passing within 960 km.
- The 4-km-wide, **carbon-rich asteroid** in the inner regions of the asteroid belt, likely broke off a larger body 150 million years ago and rotates every 251 hours, suggesting an elongated shape.
- The flyby is part of **Lucy's 12-year mission to explore 11 asteroids**, including 8 Jupiter Trojans, with its next major encounter set for 2027 with asteroid Eurybates and its moon Queta.
- Lucy is named after the finding of a **fossilised hominid skeleton found in Ethiopia in 1974**.
  - The asteroid Donaldjohanson was named in honour of Dr Donald Johanson, the **paleoanthropologist who found the Lucy fossil**.





- A wide range of items, from arms, ammunition, and parts and components were exported to about **80 countries in the just-concluded fiscal year.**

## MAHASAGAR Initiative

- During his recent visit to Mauritius, Prime Minister Narendra Modi announced strengthening of its **SAGAR (Security and Growth for All in the Region) doctrine to MAHAGAR.**
- This initiative, officially named “**Mutual and Holistic Advancement for Security and Growth Across Regions,**” is designed as a **strong and inclusive alternative to China’s contentious Belt and Road Initiative (BRI).**
- It aims to address the geopolitical and economic weaknesses faced by many countries in the region.
- The SAGAR Initiative** unveiled in 2015 mainly focused on **South Asia and its immediate neighbors** like Sri Lanka, Maldives, and Seychelles.
- Now, in 2025, **MAHAGAR broadens India’s maritime focus beyond South Asia** to include the wider Indian Ocean and significantly, the **eastern coastal countries of Africa.**
- This change shows a clear shift from a more limited regional approach to a broader strategic vision.

## India’s Defence Exports 2025

- India’s defence exports have hit a **new record high of ₹23,622 crore** in the financial year (FY) 2024-25, the Union Ministry of Defence (MoD) announced.
- This pertains to a growth of **12.04% over the previous fiscal year.**
- Defence public sector undertakings (DPSUs)** have shown a significant increase of 42.85% in their exports in FY 2024-25.
- The Department of Defence Production** has a dedicated portal for the **application and processing of export authorisation** requests.
- India has evolved from a **largely import-dependent military force to one increasingly focused on self-reliance** and indigenous production.

## Gaurav

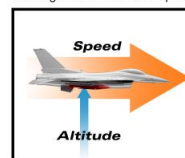
- The Defence Research and Development Organisation (DRDO)** successfully conducted release trials of the **Long-Range Glide Bomb (LRGB) ‘Gaurav’** from a Su-30 MKI fighter aircraft.
- The trials successfully demonstrated a range close to 100 kms with **pin-point accuracy.**
- LRGB ‘Gaurav’ is a **1,000 kg class glide bomb**, designed and developed indigenously by Research Centre Imarat, Hyderabad.
- The system has been realised with the support of Development-cum-Production Partners - Adani Defence Systems & Technologies, Bharat Forge and various MSMEs.

OFF  
BEAT

## The Glide Bomb War

How do Glide Bombs Work?

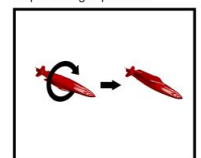
1. Jet aircraft carrying glide bomb gains altitude and speed



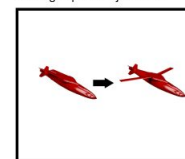
2. Jet aircraft releases attached glide bombs



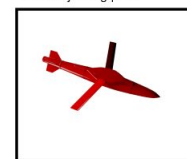
3. Glide bomb rotates into required flight position



4. Wings are deployed, allowing for flight path adjustment



5. Glide bomb travels to target while adjusting path



6. Glide bomb hits target with increased accuracy



## Defence Exercises

Exercise	Force	Participants	Description
Balikatan	Army-Navy	Philippines-US-Australia-Japan	Balikatan, meaning “ <b>shoulder-to-shoulder</b> ” in Tagalog, began in 2002. It focuses on humanitarian assistance, disaster relief, and military readiness. <b>Japan is participating for the first time</b> in this exercise.
Dustlik	Army	India-Uzbekistan	The 6th edition of this annual exercise was conducted at Aundh, Pune.
Desert Flag-10	Air Force	Multilateral Ex	The exercise is being hosted by the <b>UAE Air Force</b> , with participating contingents from the air forces of Australia, Bahrain, France, Germany, Qatar, Saudi Arabia, Republic of Korea, Turkey, UAE, United Kingdom, and United States of America in addition to the <b>Indian Air Force</b> .
Tiger Triumph	Tri-Service	India-US	This is the Fourth edition of Exercise. It focuses on Humanitarian Assistance and Disaster Relief (HADR).
Aikeyme	Navy	India-Africa (10 Nations - Tanzania, the Comoros, Djibouti, Eritrea, Kenya, Madagascar, Mauritius, Mozambique, Seychelles and South Africa.)	Aikeyme stands for <b>Africa-India key maritime engagement</b> . It was conducted off Dar-es-Salaam in Tanzania.



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AIR 321



SWATHY S  
AIR 377



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## Miscellaneous

### IISR Surya

- The **Indian Institute of Spices Research (IISR), Kozhikode**, has developed a new light-coloured **turmeric** variety specifically for the masala industry.
- The new variety, **IISR Surya**, features a **light-coloured rhizome** (underground plant stem that grows horizontally) that meets the specific needs of the modern powdering industry.
- The new variety with a **pleasant aroma** is a **high-yielding one which offers a 20% to 30% yield increase** compared to that of the existing light-coloured local varieties.

**Turmeric** (*Curcuma longa*) is native to **South Asia**, particularly **India**.

India is the largest **producer, consumer and exporter** of turmeric in the world **with more than 30 varieties of turmeric grown** in India and it is grown in over 20 states in the country.

The largest **producing states** of turmeric are Maharashtra, Telangana, Karnataka and Tamil Nadu.

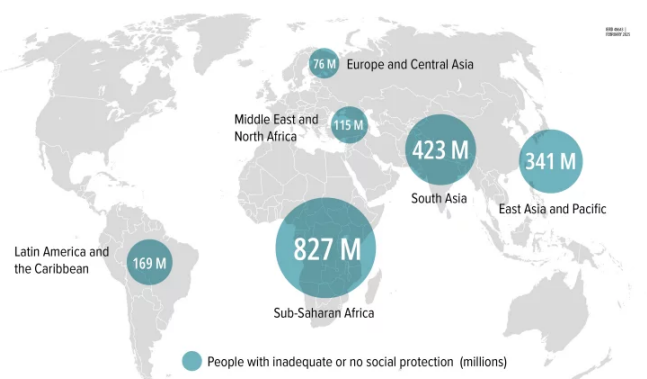
India has more than **62 per cent share of world trade** in turmeric.

In 2023, Central government established a **National Turmeric Board** and plans to **double turmeric production to 2 million by 2030**

### The State of Social Protection Report 2025

- Nearly two billion people in **low- and middle-income countries (LIC and MIC)** were without adequate social protection as of 2022, according to the **World Bank's State of Social Protection Report 2025**.
- **Social protection** is the set of **public measures that protect individuals and families** against economic and social distress, with the aim of ensuring a minimum level of wellbeing for all.
- The three pillars of social protection are **social assistance, social insurance, and labor market programs**.

- Report says that at current growth rates, it will take **18 years to achieve full coverage** for those living in extreme poverty and 20 years to cover the poorest 20% of households in LIC and MIC.



### Electronics Components Manufacturing Scheme (ECMS)

- In a major step toward **boosting the electronics sector and making India self-reliant**, the **Ministry of Electronics and Information Technology (MeitY)** has launched the Electronics Component Manufacturing Scheme (ECMS).
- ECMS is aimed at boosting **domestic value addition in electronics production**, Strengthen India's integration with **Global Value Chains (GVCs)**, and build robust electronics components and sub-assemblies manufacturing ecosystem.
- It also aims to Attract global and domestic investments & Enhance Domestic Value Addition (DVA).
- ECMS is seen as a **"horizontal scheme,"** as its benefits would extend beyond electronics to sectors such as industrial, power, and automobile manufacturing.
- **Note:** Electronics production in India has grown five-fold while exports have expanded more than six-fold, with a **compound annual growth rate (CAGR) exceeding 20% for exports and over 17% for production**.

### Frontier Technologies Readiness Index

- The **2025 Technology and Innovation Report** by UN Trade and Development (UNCTAD) ranked India **36th** in the 'Readiness for Frontier Technologies' Index, improving from **48th** in 2022.

- The index assesses Information and Communications Technology (ICT) deployment, skills, R&D activity, industrial capacity, and access to finance.
- India ranks **99th** for ICT, **113th** for skills, **3rd** for R&D, **10th** for industrial capacity, and **70th** for finance.
- In AI investment, the **US** leads, with **China** second and **India** tenth.
- Among developing countries, **Brazil, China, India, and the Philippines** excel in technology readiness, while **Bhutan, India, Morocco, Moldova, and Timor-Leste** improved in human capital due to better schooling and more high-skill employment.



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## Places in News

### Etalin Hydroelectric Project



- A significant financial milestone was reached as Rs 269.97 crore was transferred to the **Dibang Valley district administration** for the 3097 MW **Etalin Hydroelectric Project**.
- The project is a combination of **two run-of-the-river schemes** with limited storage requiring concrete gravity dams on **rivers Tangon and Dri** (Both tributaries of Dibang River).
- The plant is in Anini Circle, **Dibang Valley district, Arunachal Pradesh**.

### Yellow Sea



- The ongoing dispute between **South Korea and China** over Chinese-constructed steel platforms in the Yellow Sea has **escalated into a critical geopolitical flashpoint**.

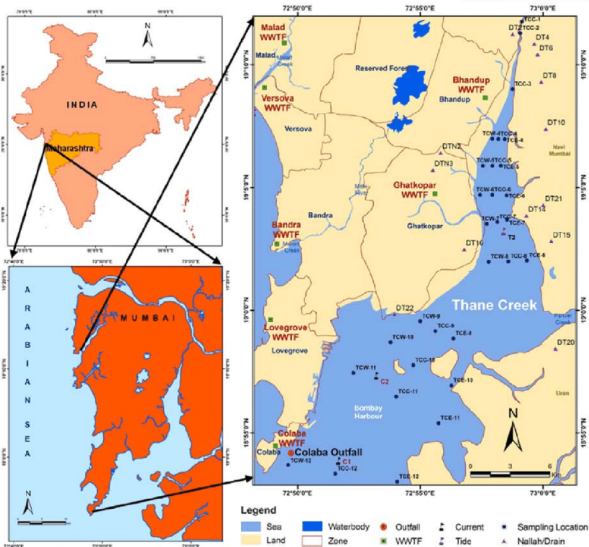


- It falls in the **western Pacific Ocean** and is bordered by the **Korean peninsula and the Japanese island of Kyushu** on the east and China on the north and west.

In the south is the East China Sea.

- Korea Bay and the gulf of Bo Hai** are its main inlets, shaped by the Liaodong Peninsula jutting from the north and the Shandong Peninsula from the southwest.
- The sea's name is derived from the **colour of the silt-laden water** flowing into it from major Chinese rivers.

## DPS Flamingo Lake



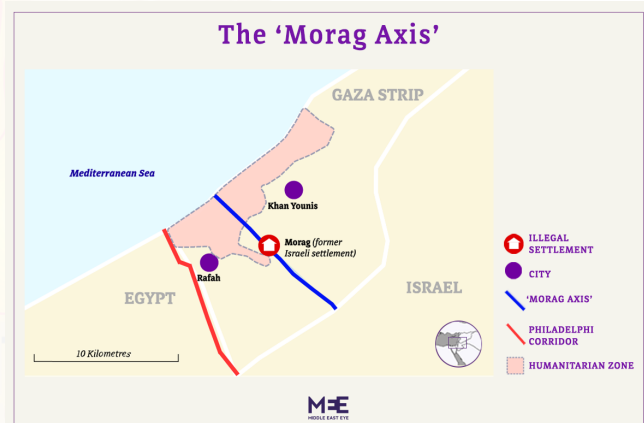
- The Maharashtra State Wildlife Board has declared the **30-acre DPS Flamingo Lake as a Conservation Reserve**.
- This makes it the first wetland connected to the **Thane Creek Flamingo Sanctuary (TCFS)** to receive such protection.
- The 30-acre lake serves as a critical resting and feeding ground for flamingos that migrate from TCFS during high tide.
- The Thane Creek falls under the **Marine Ecoregions of the World (MEOW)** but is fed by numerous freshwater sources, making the water brackish.

## Morag axis

- Israeli Prime Minister Benjamin Netanyahu recently announced the capture of an area that he referred to as the **“Morag axis” in the southern Gaza Strip**.

- This area consists mainly of **agricultural land located between Khan Younis and Rafah**, stretching from east to west across the Gaza Strip.

- It includes parts of what the Israeli military had previously designated as a **“humanitarian zone”**, where they had told internally displaced Palestinians to seek refuge.
- The area had not been identified as an “axis”, also known as a “corridor”, until Netanyahu’s announcement.
- Netanyahu declared the **purpose of capturing** such an axis or corridor is to force Hamas to release **Israeli hostages** but is also reportedly to enable the Israeli forces to push out the Palestinians from the territory for complete take over by the Israeli forces.



## Mount Spurr




- Dozens of mini-earthquakes have rattled **Alaska’s Mount Spurr** over the past week, sparking fears of a major eruption.

- Mount Spurr is a **stratovolcano**, also known as a **composite volcano**, is a typically conical volcano built up by **many alternating layers (strata) of hardened lava**.
- It is one of a **string of volcanoes on the Aleutian Arc**, an arc of islands with more than 80 named volcanoes **stretching the Southwest tip of Alaska to the Kamchatka Peninsula of the Russian Federation**.
- Mount Spurr is one of the volcanoes that **makes up the Ring of Fire**, created by the Pacific plate sinking below the North American plate.
- Standing 3,374 meters tall, and it is located near **Anchorage, Alaska's largest city**.

## India's longest Rail Tunnel

### ABOUT THE PROJECT

The rail line will be a boon for locals as well as pilgrims



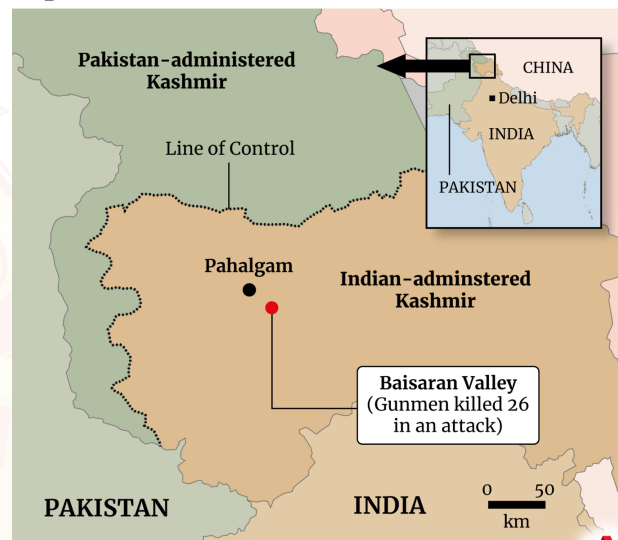
- The rail project will have the country's longest tunnel of 15.1 km between Devprayag and Lachmoli
- The rail link will cut down the travel time between Rishikesh and Karnprayag from seven hours to two hours
- The project has been delayed by six years mainly due to the Union environment and forest ministry's initial objections to handing over the possession of forestland to Rail Vikas Nigam Ltd.

**₹16,200 cr**  
The current cost of the proposed 125-km rail link is about four times the original cost

- The Ministry for Railways informed about the **"tunnel breakthrough" of tunnel no. 8** on the Rishikesh-Karnaprayag railway in the Himalayas.
- Spanning a length of 14.58 km, **tunnel no. 8, or the Janasu tunnel**, falls on the Devprayag to Janasu stretch of the **Rishikesh-Karnaprayag line**.
- At present, the **longest rail tunnel** in India is the 12.75 km long **Katra-Banihal Section** of the Kashmir line or the **Udhampur-Srinagar-Baramulla Rail Link (USBRL)**.
- The **longest road tunnel** is the Atal tunnel on the Manali-Leh highway, which is 9.02 km long.
- A **tunnel breakthrough** is the point or moment when a **tunnel being excavated from both ends finally connects**, marking the completion of a **critical phase of tunnel-building**.

## Pahalgam

### Apr 23 attack in Kashmir



- The recent **terror attack** in Pahalgam claimed the lives of 26 civilians on April 22.
- The attack was claimed by **The Resistance Force (TRF)**, an offshoot of Pakistan based terror group, **Lashkar-e-Taiba**.
- Pahalgam is a town in Anantnag district of Jammu & Kashmir, **91 kms from the Srinagar city**.
- It is situated at 2,200 metres altitude in the **Lidder Valley along the Lidder River**.
- The town is the starting point of the annual pilgrimage to the **Amarnath Temple**, which takes place in the month of **Sawan (July / August)**.
- The **Baisaran meadow**, also called as 'mini Switzerland' is located about 6 km from Pahalgam town.



## Species in News

### Russell's viper



- Recent research has revealed innovative **“venom maps”** that predict the venom characteristics of Russell's viper (**Daboia russelii**), a highly dangerous snake prevalent in India.
- The toxic effects of a snake's venom are caused by **concentrations of enzymes**, which are influenced by factors, such as **climate and availability of prey**.
- Temperature and rainfall were found to partly explain the **region-to-region variation in snake-venom composition**.
- The breakdown of proteins, or **“protease activity”**, was found to be higher among snakes in **drier regions** of India, and using this data, the team created a map of expected venom types of Russell's vipers across its range in India.
- The snake is named after **Patrick Russell**, 18th century British surgeon and naturalist who worked in India and is considered the **“Father of Indian Ophiology** (the branch of zoology that deals with snakes)”
- Russell's Viper is among the **“Big Four” snakes of India**, responsible for the majority of snakebite fatalities in the country, that includes the Indian Cobra, Common Krait, and Saw-scaled Viper.

### Dire wolf

- Colossal Biosciences, a Texas-based company, claims to have revived the extinct **dire wolf (Aenocyon dirus)**, which vanished around 12,500 years ago, using advanced genetic engineering.
- Dire wolves resembled but were larger than **today's grey wolves (Canis lupus)**, sharing 99.5% of DNA yet remaining distinct.

- This would mark the **second species revived** and then re-extinct, after the **bucardo** (Pyrenean ibex) in Europe.



- Critics, however,** argue these revived pups are actually grey wolves with edited genomes and not dire wolves in reality.

### Vembur sheep



- Vembur sheep, an **indigenous hair sheep breed in Tamil Nadu** faces threat from industrial plans.
- The Vembur sheep (also called **“pottu aadu”**) is one of **Tamil Nadu's five indigenous hair sheep breeds**, alongside Madras Red, Macheri, Chevadu, and Kilakarasal.
- They are **tall and have white-colour skin** with red-colour spots all over their body.
- It also holds significant **cultural and economic importance for farmers** who depend on them for their livelihood.
- Another significant quality of the breed is that **it does not rely on commercial cattle fodder**, but entirely on natural grazing grounds.
- Recognising its uniqueness, the **National Bureau of Animal Genetic Resources** officially registered the breed in 2007.

### Theobaldius konkanensis



- A team of researchers from **India and the U.K. have discovered a species of land snail from the Konkan region of Maharashtra** and named it, '**Theobaldius konkanensis**'.
- This snail is endemic to the northern Western Ghats.
- The species was principally found in **tropical evergreen and semi-evergreen forests**.
- It is **active during the day and night**, with live individuals being easily found in the afternoon in **well-shaded places under the forest canopy**.
- Land snails are **excellent bioindicators**
  - **Heavy metal accumulation:** Snails absorb heavy metals like lead, cadmium, and zinc from soil and vegetation. Their tissues and shells can be tested to monitor pollution.
  - **Habitat sensitivity:** They are vulnerable to changes in temperature, humidity, and habitat quality, which reflects broader environmental degradation.
- However, some land snails like Giant African Land Snail (**Achatina fulica**) and Rosy Wolfsnail (**Euglandina rosea**) are considered **invasive**.

### Woolly Flying Squirrel



- **The wildlife wing of Himachal Pradesh Forest Department (HPFD)** has captured the first-ever photographic evidence of the elusive Woolly Flying Squirrel at **Miyar Valley in Lahaul and Spiti district**.
- Woolly Flying Squirrel (**Eupetaurus cinereus**), **endemic** to the north-western Himalayas, was long believed to be extinct until it was rediscovered in 1994.
- Like other flying squirrels, it has **elastic membranes on each side** of the body connecting the fore and hind legs.
- It is nocturnal and is classified as '**Endangered**' under the **IUCN Red List**.

### Small Hive Beetle (SHB)

- An invasive beetle **threatening honeybee populations** globally has been recorded for the first time in India.
- The **small hive beetle (Aethina tumida)** was found in a colony of European honeybees (**Apis mellifera**) in West Bengal's North 24 Parganas district.
- **Native to sub-Saharan Africa** and first described in 1867, it has since spread worldwide, recently to parts of Asia like the Philippines, South Korea, and China.
- The **5–7 mm reddish-brown beetle** enters hives to lay eggs.
- Its larvae consume stored pollen, honey, and bee eggs, while also defecating in honeycombs, **making honey inedible** and harming the apiculture industry.



### Long-Snouted Vine Snake

- A rare long-snouted vine snake (**Ahaetulla longirostris**) has been rediscovered in the **Dudhwa Tiger Reserve in Lakhimpur Kheri, Uttar Pradesh**.



- This marks its first documented sighting in the state and only the second recorded instance in India, after being recorded once in Valmiki Tiger Reserve, Bihar last year.
- The species is **commonly found in Southeast Asia**.
- It is **arboreal** (lives on **trees**) and is **diurnal** (active during the day).
- It is **mildly poisonous**, its poison is not very dangerous for humans.



## Keywords

1. **Liberation Day (USA):** President Trump proclaimed April 2, 2025 as the “Liberation Day”. It is the day Trump announced the **most sweeping tariff hike** on its trade partners since the **Smoot-Hawley Tariff Act, 1930**, best remembered for triggering a **global trade war and deepening the Great Depression**.
2. **Jaya Sri Maha Bodhi:** It is a **historical sacred bo tree (Ficus religiosa)** in the Mahamevnāwa Garden in the **historical city of Anuradhapura, Sri Lanka**. This is believed to be a tree grown from a cutting of the southern branch from the historical sacred bo tree, **Maha Bodhi**, which was destroyed during the time of **Emperor Ashoka, at Bodh Gaya in India**, under which Siddhartha Gautama (Buddha) attained Enlightenment.
3. **Niveshak Didi Initiative:** It is a unique initiative launched by **Investor Education and Protection Fund Authority (IEPFA) under Ministry of Corporate Affairs in collaboration with the India Post Payments Bank (IPPB)** that trains women postal workers and community leaders to act as **financial educators** within their local regions.
4. **Hatsushima Train Station:** This railway station in Arida, Japan became known as the **world’s first 3D-printed train station**. First opened in 1938, the old wooden station was replaced by 3D printed components assembled on-site **in less than six hours**.
5. **Anti-semitism: Semitic peoples** are a group of ethnic groups who historically speak (or spoke) **Semitic languages**, which are a branch of the Afroasiatic language family that includes Arabs, Jews (Hebrews), Assyrians, Arameans, and others. However, the term “anti-Semitism” was coined in **19th-century Europe (by Wilhelm Marr in 1879)** to refer specifically to **hatred of Jews**.
6. **Standing Deposit Facility:** It was introduced by the **Reserve Bank of India (RBI) on April 8, 2022** as a liquidity management tool, allowing **banks to park their excess funds** with the RBI **without providing collateral**. It has replaced the collateralised Fixed Reverse Repo under **Liquidity Adjustment Facility**, though FRR continues to be a tool available for RBI.
7. **Non-Tariff Barriers:** They are trade barriers that restrict the import or export of goods through means other than tariffs. The World Trade Organization (WTO) identifies various non-tariff barriers to trade, including **import licensing, pre-shipment inspections, rules of origin**, custom delays, and other mechanisms that prevent or restrict trade.
8. **Chlorpyrifos:** It is a white, crystal-like **insecticide** with a strong odor. It **doesn’t mix well with water** and is usually blended with oily liquids or used in capsule formick collars. Countries are on track to **eliminate its use**, with certain exemptions for India and some other nations, under the **Stockholm Convention**
9. **India Skills Accelerator Initiative:** The **Ministry of Skill Development and Entrepreneurship** in collaboration with the **World Economic Forum** launched the initiative which will function as a **public-private collaboration platform** to enable cross-sectoral efforts for unlocking innovative ideas
10. **De-extinction:** A US company, Colossal Biosciences claims to have “resurrected” **dire wolves (Aenocyon dirus)**, that had gone extinct over 10,000 years ago using gene-editing CRISPR technology. They claim to have genetically modified **grey wolves (Canis lupus)**, that are genetically identical to the extinct species, in what is said to be a process of de-extinction. This would mark the **second species revived** and then re-extinct, after the **bucardo (Pyrenean ibex)** in Europe.





# കേരളം പറയുന്നു IAS നേടാൻ ഭാഗ്യമല്ല FORTUNE ആണ് വേണ്ടത്



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PCM



**SONNET JOSE**  
AIR 54  
PCM



**REENU ANNA MATHEW**  
AIR 81  
Sociology Test Series



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AIR 95  
IMP



**KRISHNA C**  
AIR 139  
MTS, IMP



**AMAL P V**  
AIR 158  
PSIR, PTS, MTS, IMP



**ALEX ABRAHAM P J**  
AIR 165  
MTS, IMP



**RAJATH R**  
AIR 169  
PCM Working Professional,  
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AIR 185  
MTS, IMP



**SOWMYA KRISHNAN**  
AIR 196  
PCM, Malayalam  
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MTS, PTS PRO,  
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Open Mock MTS



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MTS, IMP



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MTS, Sociology, IMP



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PCM, Sociology



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IMP



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AIR 377  
PCM, Malayalam  
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**MICHAEL JOM**  
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Sociology, IMP



**NADIYA ABDUL RASHEED**  
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PTS, MTS



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MTS, Malayalam Optional,  
IMP



**ADARSH C S**  
AIR 457  
IMP



**ANAND PYARELAL**  
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MTS, IMP



**GREESHMA K B**  
AIR 559  
IMP



**OORMILA J S**  
AIR 563  
PCM, Sociology



**HEMA V**  
AIR 569  
MTS, Sociology, IMP



**AKSHAY RAJ P**  
AIR 641  
MTS, IMP



**VAISAKH C R**  
AIR 656  
IMP



**ANJALI P**  
AIR 702  
PCM, Malayalam  
Optional



**NESRIN P FASIM**  
AIR 703  
IMP



**AJAY R RAJ**  
AIR 730  
IMP



**YEDU K RAJAN**  
AIR 785  
IMP



**GANGA GOPI**  
AIR 786  
PCM



**PRANAV P MANANGATH**  
AIR 800  
PCM



**ADHIL SHUKOOR**  
AIR 822  
IMP



**KIRAN G**  
AIR 835  
IMP



**NISA UNNIRAJAN**  
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PCM



**SAGAR MOHANDAS**  
AIR 1003  
IMP

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