

FORTUNE Prelims Precise

January 2025



FORTUNE IAS

Toppers in Top 100



P K Sidharth Ramkumar
2024



Meera K
2021



Sidharth B
2017



Ayan Jain
2024



Dilip K Kainikkara
2022



Hamna Mariyam
2017



Sreelakshmi Ram
2019



Vishnu Sasikumar
2024



Anand
2016



Arya V M
2023



Archana P P
2024



Safna Nazarudeen
2020



Renjina Mary V
2019



Dr. Arun S Nair
2020



Alfred O V
2022



Hari Kallikkat
2018



Benjo P Jose
2024



Aparna M B
2021



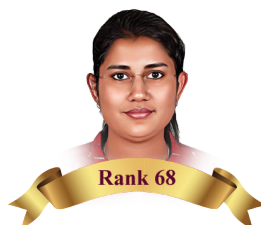
Dheenah Dastageer
2021



Akhil V Menon
2022



Arjun Mohan
2019



Kasturi Sha
2024



Fabi Rasheed
2024



Malini S
2023



Devi Nandana
2020



Annie George
2024



Kiran P B
2022

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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Polity & Governance

Decoding a Decade of NITI Aayog

- January 1st, 2025 marked the 10th anniversary of the **National Institution for Transforming India (NITI Aayog)** that **succeeded the Planning Commission**.
- NITI is a **policy think tank for the government** that designs and recommends policies and welfare programs and has the **Twin mandate**:
 - ➔ To oversee **the adoption and monitoring of the SDGs** in the country and
 - ➔ To promote **competitive and cooperative federalism** among States and UTs.

Composition of Niti Aayog

- Chairperson:** The Prime Minister of India serves as the Chairperson of NITI Aayog.
- Vice Chairperson:** The Vice Chairperson is appointed by the Prime Minister.
- Governing Council:** This is the main body of NITI Aayog and includes:
 - The Prime Minister
 - Chief Ministers of all states
 - Lieutenant Governors of Union Territories
- Regional Councils:** These are formed to address specific regional issues and consist of:
 - Chief Ministers of states in the region
 - Lieutenant Governors of Union Territories in the region
 - They are chaired by the Prime Minister or his nominee.
- Full-Time Members:** Experts in various fields, such as economics, science, and other relevant disciplines, are appointed as full-time members.
- Ex-Officio Members:** Up to four members from the Union Council of Ministers are nominated by the Prime Minister.
- Special Invitees:** Experts, specialists, and practitioners from various fields are invited by the Prime Minister to contribute their knowledge and insights.
- Chief Executive Officer (CEO):** The CEO is appointed by the Prime Minister and manages the day-to-day operations of NITI Aayog.

Subject	Programmes/Schemes/Indices
Planning	Vision: Goals and objectives of the country for the next 15 years . Strategies: Roadmap of development for the next 7 years . Action Agenda: Targets to be achieved in the next 3 years . Strategy for New India at 75
Governance	Aspirational Programme for Districts and Blocks Good Governance Index SDG India Index Agriculture Marketing And Farmer Friendly Reform Index
Health	Sustainable Action for Transforming Human Capital Project (SATH Project) Health Index District Hospital Index
Education & Training	School Education Quality Index Atal Innovation Mission/ Tinkering Labs/Incubation Centres India Innovation Index
Women	Women Transforming India Awards Women Entrepreneurship Platform (WEP)
Development/Energy	e-AMRIT (Accelerated e-Mobility Revolution for India's Transportation) portal for creating awareness about electric mobility . 'Methanol Economy' Programme

Draft UGC Regulations

- Recently released **draft University Grants Commission (UGC) rules** regarding Vice Chancellor appointments have come under criticism for violating federal principles.
- Currently, the **universities formed under state law** have their VCs appointed by the Chancellor (ex-officio the Governor), based on state government recommendations.
- However, the **new regulations recommend a 3-member committee** consisting of nominees from the Visitor/Chancellor, UGC Chairperson, and the university's apex body (e.g., Senate, Syndicate) to shortlist VCs.
- The Governor will make appointments from the list provided.
- VCs Background:** Besides professors, Individuals at senior levels in industry, public policy, public administration, or public sector undertakings, can also become VCs, says the draft.
- The **UGC** is India's higher education regulator, overseeing standards, funding, and accreditation of universities and colleges.
- Established under **UGC Act, 1956**, it operates under the **Ministry of Education**.

NEW FACULTY RECRUITMENT NORMS

Highlights of the latest draft UGC regulations	
Subject Flexibility: Candidates can teach based on their highest academic specialization, regardless of prior degree subjects or NET focus	Recognising Innovation: Criteria now include teaching innovations, digital content, and community engagement
Expanded Vice-Chancellor Eligibility: Professionals from fields like industry and policymaking with academic contributions are now eligible	Revised Librarian and Sports Roles: Emphasis on digitization, indigenous sports, and public health contributions
Inclusivity Focus: Relaxations for EWS and PwD categories alongside SC/ST/OBC, with emphasis on Indian languages in academia	Professor of Practice: Industry experts can join HEIs for teaching and research outside sanctioned posts
Transparent Recruitment: Teaching candidates will be assessed on practical teaching and research aptitude	Improved Leadership Selection: Vice-Chancellor appointments ensure transparency through expert-led committees
Fair Career Advancement: Promotions consider leave for maternity, childcare, or study.	Strict Compliance Measures: HEIs violating regulations risk penalties like exclusion from UGC schemes and degree programmes



Election Rules – Form 17C

- The Supreme Court (SC) has sought responses from the Union government and Election Commission of India (ECI) on a petition challenging government amendments to Election Rules.
- Rule 93 of the Conduct of Election Rules, 1961** allowed public inspection of all election papers, including **CCTV footage and Form 17C** (booth level vote details).
- But recent amendments limit public access only to those “specified” excluding electronic records.
- Form 17C**, part of the Election Rules, records votes:
 - ➔ **Part 1** (poll day vote total) is filled by the **Presiding Officer** and given to polling agents.
 - ➔ **Part 2** (candidate-wise vote count) is completed by the **Returning Officer** after pressing ‘Result’ on the EVM.
- Petitioners allege that the amendment **violates the fundamental rights** under Article 19 and 21.

Ad-Hoc judges

- To address the backlog of criminal appeals, the **Supreme Court has eased conditions for appointing retired judges as ad hoc judges** in High Courts.
- SC modified the Lok Prahari verdict of 2021 in this case as a way to tackle pendency..
- Around **sixty-two lakhs cases** were **pending** before the high courts in India as of January 25, 2025, of which more than eighteen-lakhs cases were criminal cases.
- Under **Article 224A**, retired High Court judges can be appointed as ad hoc judges.
 - 📖 The **chief justice of a high court**, with the **previous consent of the President**, may request a former judge of a high court to sit and act as a judge of the high court for that State.

☞ Every person so requested is **entitled to such allowances as the President may by order determine** and have all the jurisdiction, powers, and privileges of, but shall not otherwise be deemed to be, a judge of that high court.

- The latest order allows each High Court to appoint **2-5 ad hoc judges**, not exceeding **10% of its sanctioned strength**.
- The Bench also said that **ad-hoc judges would sit in a Bench presided over by a sitting high court judge** to decide pending criminal appeals.

Lokpal Foundation Day

- On **January 16, 2025**, the **Lokpal of India** celebrated its **Foundation Day**, commemorating **11 years** since its **establishment in 2014**.
- Established under the **Lokpal and Lokayuktas Act, 2013**, it is an independent statutory body.
- It is mandated to **investigate corruption allegations** against current and former Prime Ministers, Union Ministers, MPs, and government officials (Groups A to D).
- Its jurisdiction also covers officials in **boards, corporations, trusts**, and entities **funded by the Centre**, as well as those receiving **foreign contributions over ₹10 lakh**.
- The **Lokpal** consists of a **Chairperson** and **up to eight Members** (four Judicial, four Non-Judicial), appointed by the **President** based on recommendations from a **Selection Committee**.
- The Chairperson can be a **former Chief Justice of India or a Supreme Court Judge**, while Judicial Members include **former SC Judges or Chief Justices of High Courts**.
- **Lokpal** submits an **annual report to the President**, which is laid before Parliament.

Draft Rules on DPDP Act

- The **Ministry of Electronics and Information Technology (MeitY)** released the draft rules to operationalise the **Digital Personal Data Protection Act, 2023 (DPDP Act)**.

Key rights of data principals:

- ☞ **Access and Correction:** Data principals (individuals to whom the personal data relates) may access their personal data held by fiduciaries (entities that handle the data and decide its purpose), verify its accuracy, and request rectification of inaccuracies.
- ☞ **Erasure:** Data principals may request erasure of personal data.

Key obligations of fiduciaries:

- ☞ **Transparency and Consent:** Data fiduciaries must provide clear notices to data principals regarding data collection and processing, obtaining explicit consent.
- ☞ **Compliance with Governmental Restrictions:** This includes prohibitions on the transfer of sensitive personal data outside India.
- ☞ **Data Breach Notification:** Fiduciaries must notify data principals of data breaches impacting their personal data within a stipulated time frame.
- ☞ **Age-gating and Parental Consent:** Verifiable parental or guardian consent is mandatory for processing the personal data of children (under 18) and individuals with disabilities.

Compliance and enforcement:

- ☞ **Grievance Redressal:** Data principals may lodge complaints regarding data handling. Data fiduciaries are required to establish grievance redressal mechanisms.
- ☞ **Oversight:** The Data Protection Board will monitor compliance with the DPDP Rules by data fiduciaries.

Highlights of draft rules

Breaches must be notified

TO USERS

- Immediate notification
- Details of breach nature and possible consequences
- Safety measures

TO DATA PROTECTION BOARD

- Initial alert without delay
- Detailed report within 72 hours

Data retention and deletion obligation (for big platforms)

- Must delete data after 3 years of inactivity
- 48-hour advance notice before deletion
- Exception if retention required by law

Parental verification for children's data must be

- Through reliable ID;
- Via govt-authorised tokens

EXEMPT FROM PARENTAL CONSENT

- Healthcare services, child welfare services, educational activities, school transport safety and email account creation

Uttarakhand UCC

- Uttarakhand became the first state in independent India to roll out a **Uniform Civil Code (UCC)**, ensuring uniform laws for all citizens, irrespective of gender or religion.
- UCC is a directive principle under **Article 44 of the Indian constitution**.
- **Registration:** Covers marriage, divorce, live-in relationships, wills, inheritance, and grievances, with a 15-day to one-month processing time.
- **Bans:** Prohibits polygamy, child marriage, triple talaq, nikah halala, and iddat.
- **Inheritance Rights:** Recognizes children from live-in relationships as legitimate with equal inheritance rights.
- **Gender Equality:** Uses “child” instead of son/daughter to ensure equal rights.
- **Exclusion:** Does not apply to **Scheduled Tribes** to protect their rights.
- **Live-in Relationships:** Mandatory registration, with penalties for non-compliance (up to 3 months in jail or ₹10,000 fine).

US President Inaugurated

- Donald Trump took oath as the **47th president of the United States** winning both electoral and popular votes.
- The US has a unique electoral system where **elections happen in November**, but the **new President takes office in January** as per the constitution.
- The **U.S President and Vice President are elected together** on a joint ticket.
- Voters cast a single vote (popular vote) for a presidential candidate, who runs with a chosen vice-presidential candidate.
- The **Electoral College** then formally elects both based on the outcome of the popular vote in each state
- A candidate can win the popular vote but lose the electoral vote, as happened in 2016.

- Interestingly, the **President in India is also elected by members of an electoral college** consisting of elected members of both Houses of Parliament and Legislative Assemblies of the states
- The Indian president is elected through a system of proportional representation by means of a single transferable vote unlike in the US.



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Economy

Producer Price Index

- India is planning a **Producers' Price Index (PPI)** to replace the **Wholesale Price Index (WPI)**.
- PPI measures **wholesale prices from the point of view of producers** of goods and services by tracking prices at different stages of production.
- It records fluctuation in the product prices at the producer level.
- India currently uses the **wholesale price index (WPI), adopted in the 1970s**, to measure wholesale rates of 117 primary articles, 16 fuel and power items and 564 manufactured products.
- Most developed economies use PPI to track producers' prices, in line with the **UN's global System of National Accounts (SNA)**.
- Unlike the WPI, the **PPI doesn't include indirect product taxes (GST or VAT), margins of the wholesaler and logistics cost**.
- WPI** causes **double counting** by including both raw material prices (eg: price of steel) and final product prices (eg: car price that also includes steel), leading to inflation being recorded multiple times.
- PPI captures **prices at different stages of production**, reflecting only the **value added** at each stage without double counting.

Interest Equalisation Scheme (IES)

- The Commerce Ministry has urged the Finance Ministry to extend the **Interest Equalisation Scheme (IES)** for MSME exporters.
- Launched in **2015**, IES is a government initiative that provides **subsidized interest rates** on export credit to eligible exporters.
- It helps them access **cheaper loans** for **pre- and post-shipment finance**, making Indian exports more competitive globally.
- Export credit** is a short-term loan provided to exporters to finance their business activities.

- It helps them cover costs like raw materials, production, and shipping before they receive payment from international buyers.
- Initially valid for five years, it has been extended multiple times, including during COVID-19.
- The scheme is **jointly monitored** by the **Directorate General of Foreign Trade (DGFT)** and RBI.

QS World Future Skills Index

- India ranked 2nd in **future of work** preparedness, including AI and green skills, in the **QS World Future Skills Index 2025**, behind the USA.
- However, it ranked **25th overall**, categorized as a **"future skills contender,"** while top-ranking nations like the USA, UK, and Germany were labeled "future skills pioneers."
- QS (Quacquarelli Symonds)** is a London based for-profit company that specializes in higher education analysis.

QS World Future Skills Index 2025

Transforming Higher Education for the Skills Economy

INDIA					
Indicator	Skills Fit	Academic Readiness	Future of Work	Economic Transformation	Overall
Score	59.1	89.9	99.1	58.3	76.6
Global position	37th	26th	2nd	40th	25th

Fiscal Health Index (FHI)

- NITI Aayog launched the **inaugural issue** of "Fiscal Health Index (FHI) 2025".
- The Aayog, using data from the Comptroller and Auditor General (CAG), released the index for **18 states**, which contribute 85% of the cumulative gross domestic product of all states.
- The report provides a comprehensive assessment **based on key sub-indices**

MAJOR SUB-INDICES	MINOR SUB-INDICES
1. Quality of Expenditure	1.1 Total Developmental Expenditure/Total Expenditure
	1.2 Total Capital Outlay/ GSDP*
2. Revenue Mobilization	2.1 State Own Revenue/ GSDP*
	2.2 State Own Revenue/ Total Expenditure
3. Fiscal Prudence	3.1 Gross Fiscal Deficit/ GSDP*
	3.2 Revenue Deficit/ GSDP*
4. Debt Index	4.1 Interest Payments/Revenue Receipts
	4.2 Outstanding Liabilities/ GSDP*
5. Debt Sustainability	5.1 Growth Rate of GSDP* - Growth Rate of Interest Payments

GSDP at current prices for the year 2022-23

- The States are divided into 4 categories namely **Achievers, Front Runners, Performers and Aspirational**.

HOW STATES FARE

Fiscal Health Index Score (out of 100)

TOP 5 ▲

1	Odisha	67.8	
2	Chhattisgarh	55.2	
3	Goa	53.6	
4	Jharkhand	51.6	
5	Gujarat	50.5	

BOTTOM 5 ▼

18	Punjab	10.7	
17	Andhra Pradesh	20.9	
16	West Bengal	21.8	
15	Kerala	25.4	
14	Haryana	27.4	

Source: NITI Aayog

- The global jobs gap stood at 402.4 million, including 186 million unemployed and 137 million discouraged workers.

National Critical Mineral Mission

- The Union Cabinet has approved the National Critical Mineral Mission (NCMM) which was announced in the previous Budget.
- The Mission envisages a budget of ₹16,300 crore and expected PSU investment of ₹18,000 crore.
- The NCMM will encompass **all stages of the value chain**, including mineral exploration, mining, beneficiation, processing, and recovery from end-of-life products.
- The mission aims to intensify the exploration of critical minerals **within the country and in its offshore areas**.
- The mission includes provisions for setting up of **mineral processing parks** and a **Centre of Excellence on Critical Minerals**.
- The **Ministry of Mines** had released a list of **30 critical minerals** for India. These minerals are Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.

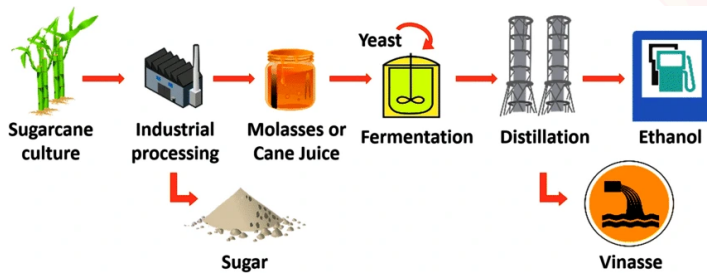
Ethanol Procurement Price

- The Cabinet Committee on Economic Affairs (CCEA)** has increased the ethanol procurement price for **Ethanol Supply Year 2024-25 (1st November 2024 to 31st October 2025)**.
- The **Ethanol Blending Programme (EBP)** of India targets to blend 20% ethanol into petrol by 2025-26, also known as the E20 target.
- India's ethanol production mainly comes from **fermentation of C Heavy Molasses (CHM)**.
 - ☞ Molasses is a **thick syrup byproduct of sugar production** from sugarcane.
 - ☞ A Heavy Molasses (AHM) has the highest sugar content, followed by B Heavy Molasses and C-Heavy Molasses (CHM) with the lowest sugar content.

World Employment and Social Outlook Report

- The ILO's World Employment and Social Outlook: Trends 2025 reports a slowing global economy, hindering full labour market recovery post-COVID-19.
- Key Findings:**
 - Global **unemployment remained steady at 5%** in 2024.
 - Economic growth slowed to 3.2% in 2024 from 3.3% (2023) and 3.6% (2022).
 - Wage growth lags behind pandemic-related losses due to weak employment and shifting labour market power.

- Ethanol Procurement Price refers to the ex-mill price at which **Public Sector Oil Marketing Companies (OMCs)** purchase ethanol from suppliers.
- The **ex-mill price** refers to the price at which ethanol is sold directly from the production facility (mill) before adding transportation, taxes, or other charges.
- The **Ministry of Petroleum and Natural Gas (MoPNG)** announced that Ethanol blending by OMCs has achieved an average **blending of 14.60%** in 2023-24.



Digital Payments Index (DPI)

- Digital payments across the country **registered an 11.11% year-on-year rise** as of September 2024, according to **the Reserve Bank of India's (RBI) digital payments index (DPI)**.
- DPI was launched in 2021 and it indicates the **extent of digitisation of payments across the country**.
- The RBI-DPI has been constructed with **March 2018 as the base period**, i.e., the DPI score for March 2018 is **set at 100**.
- The DPI index comprises **five broad parameters**:
 - ➔ Payment enablers (25% weightage in the index)
 - ➔ Payment Infrastructure: Demand-side factors (10%) & supply-side factors (15%)
 - ➔ Payment performance (45%)
 - ➔ Consumer centricity (5%)

International Relations

Silver Notice

- The INTERPOL has issued its first **Silver Notice** as part of a **pilot phase** that runs in 52 countries (including India) till November 2025.
- It allows **member nations to request information on assets** like properties, vehicles, and financial accounts associated with crimes such as fraud, corruption, and drug trafficking.
- The first Silver Notice was requested by **Italy** and seeks information on the assets belonging to a senior member of the mafia.
- INTERPOL (International Criminal Police Organization), a global body with **195 members**, assists in tackling crimes like terrorism, cybercrime, and drug smuggling but **does not conduct direct arrests or investigations**.
- Established in 1923 as International Criminal Police Commission (ICPC) and renamed in 1956, it is headquartered in **Lyon, France**.
- India joined in 1949**.
- India joined INTERPOL** in 1949 and has **CBI** as the National Central Bureau for liaison.



Panama Canal and Greenland

- US president Donald Trump suggested that he would consider using military force to gain control of the **Panama Canal and Greenland**.

Panama Canal

- ★ The Panama Canal handles 5% of global maritime trade and connects the **Atlantic (Caribbean Sea)** and **Pacific Oceans** through the **Isthmus of Panama**.
- ★ It features two **artificial lakes**—**Gatun Lake** (425 km²), formed by damming the **Chagres River**, and the smaller **Miraflores Lake**.
- ★ The canal spans **82 km (51 miles)** and includes **three lock systems**: Gatún, Pedro Miguel, and Miraflores.
- ★ It accommodates **Panamax ships** (294 m length, 32.3 m width) and, after its 2016 expansion, **Neo-Panamax vessels** (366 m length, 51 m width).
- ★ **Initially proposed by Spain** in the 16th century, a **French** attempt (1881-1894) failed due to disease and engineering challenges.
- ★ The **U.S. took over construction** (1904-1914) after failed attempts by Spain and France (who built the Suez Canal).
- ★ The U.S got the contract after **supporting Panama's independence** from Colombia, and control was transferred to Panama on December 31, 1999, under the **Torrijos-Carter Treaties**.



Greenland

- ✈ **Greenland, the world's largest island**, is an **autonomous territory of Denmark** (other being **Faroe Island**) located between the Arctic and North Atlantic Oceans.

- ✈ It has a population of around 56,000, mostly **Indigenous Inuit**, and its capital, **Nuuk**, is geographically closer to New York than Copenhagen.
- ✈ It is geographically part of the **continent of North America**
- ✈ Under **Danish rule since the 18th century**, Greenland gained **self-governance in 1979** and has had the **right to declare independence** via referendum since 2009.
- ✈ Though not part of the EU, it is associated as one of its **Overseas Countries and Territories (OCTs)**.
- ✈ The **U.S. occupied Greenland in 1941** during WWII, maintained a military presence at Pituffik Space Base (formerly Thule Air Base)

RED FLAG OVER GREENLAND

Trump has had a tense call with Denmark's PM

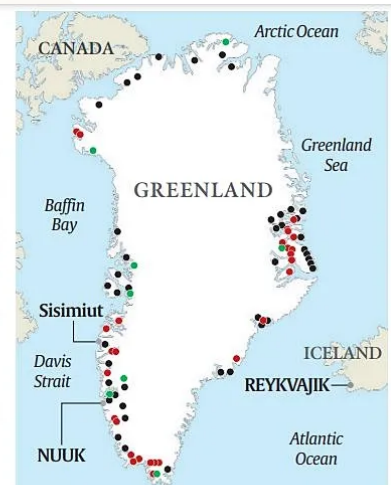


Donald Trump



Mette Frederiksen

- Critical Raw Material (CRM) deposit
- Non-Critical Raw Material (CRM) deposit
- Important Occurrence



Source: Geological Survey of Denmark and Greenland, Government of Greenland. CRM as defined by EC2023.

QUAD anniversary

- The **Quad Foreign Ministers** issued a joint statement that reaffirmed their commitment to a **free, open, and peaceful Indo-Pacific** on the 20th anniversary of Quad cooperation.
- The **Quadrilateral Security Dialogue (Quad)** is an informal strategic forum of the **USA, India, Australia, and Japan**, originating from the **2004 Indian Ocean tsunami** response.
- First formalized in **2007** by Japan's **Shinzo Abe**, it became dormant but was revived in **2017** due to concerns over China's influence.
- Often called the "Asian NATO" (without a mutual defense pact), the Quad has engaged in "**Quad-plus**" meetings with **South Korea, New Zealand, and Vietnam**, signaling possible future partnerships

- **7th QUAD Leaders Summit 2025** is to be hosted by India for the first time.

Gaza Ceasefire Agreement

- A ceasefire between Israel and Hamas is under way after 15 months of war.
- The **ceasefire agreement**, mediated by the **U.S., Egypt, and Qatar**, includes **three 42-day phases**:
 - **Phase 1:** Release of **33 Israeli hostages** (women, children, elderly, female soldiers) in exchange for **Palestinian prisoners** (30 per civilian, 50 per female soldier). **Temporary ceasefire**, Israeli forces withdraw to Gaza's edge (Philadelphi corridor), **600 aid trucks daily**, and displaced Palestinians return home.
 - **Phase 2:** This phase includes “**sustainable calm**”, **permanent ceasefire**, release of **all remaining hostages**, and **complete Israeli withdrawal** from Gaza.
 - **Phase 3:** Exchange of **mortal remains of hostages**, reopening of **border crossings**, and **Gaza reconstruction** under international monitoring. This is called the “day after” plan.

Philadelphi and Netzarim Corridors

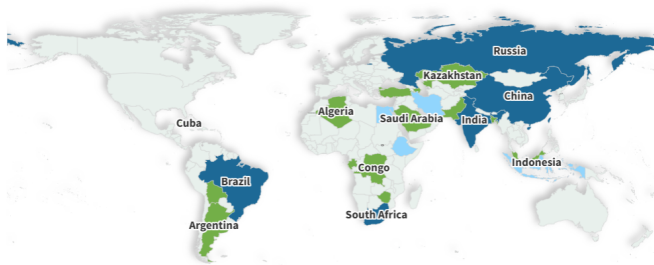


Hajj Agreement

- India set a Hajj quota of **1,75,025 pilgrims** under an agreement with Saudi Arabia.
- Hajj, an **annual Islamic pilgrimage** to Mecca and one of Islam's **Five Pillars**, is mandatory for financially and physically able Muslims, commemorating the faith of **Prophet Ibrahim, Hajira, and Ismail**.
- Typically, **2-3 million** Muslims perform Hajj each year, with India sending the **third-highest number** of pilgrims after Indonesia and Pakistan.
- Pilgrims aged **65+** must have a companion, and since **2022**, women can perform Hajj without a male companion.
- The Hajj quotas are **broadly allotted on the basis of the number of Muslims** that country has with the rule of around one pilgrim per every 1,000 Muslims

BRICS expansion

- **Indonesia** joined BRICS as a full member, while **Nigeria** became a Partner Country.
- This was announced by **Brazil**, who will **host the 2025 BRICS summit** in July.
- Saudi Arabia was invited in 2024 but has yet to accept.
- **BRICS, formed in 2009** by Brazil, Russia, India, and China, added South Africa in 2010 and expanded in 2023 to include Iran, Egypt, Ethiopia, and the UAE.
- Turkey, Azerbaijan, and Malaysia have **applied** for membership.
- Russia's 2024 BRICS presidency and the **summit in Kazan** established a new category of “**Partner Countries**” that will likely fall **short of a full membership**.
- Partner countries are **invited to participate in the Summit** and the Foreign Ministers' meeting and **may join other discussion sessions within the forum**, subject to consultation and consensus among member countries.
- Nigeria became the **ninth BRICS Partner Country**, joining Belarus, Bolivia, Cuba, Kazakhstan, Malaysia, Thailand, Uganda, and Uzbekistan



World Trade Organization (WTO)

- The WTO marked its **30th anniversary**, affirming its central role in global trade amid increasing demands for reform.
- The WTO began operations on **January 1, 1995** under the **Marrakesh Agreement (1994)**.
- It is the successor to the **General Agreement on Tariffs and Trade (GATT)**, which was created in 1947.
- Its **Ministerial Conference** is the top decision-making body, meeting biennially, while the **General Council** oversees daily functions.
- A **Secretariat** of over 600 personnel, led by the **Director-General**, provides administrative and technical support.
- The **WTO now has 166 member countries and territories, 23 observer countries and territories**, and dozens of international organizations granted observer status.

WTO works on the **principles** of Trade without Discrimination (Most Favoured Nation and National Treatment), Freer trade through negotiations, predictability through transparency, promoting fair competition, and encouraging development and economic reform.

History & Culture

Maha Kumbh



- The **45-day-long Maha Kumbh** in Prayagraj, is listed by **UNESCO** as the **largest peaceful religious congregation**.
- Devotees take a "Shahi Snan" at the Sangam, where the Ganga, Yamuna, and mythical Saraswati converge.
- Held rotationally every three years in **Prayagraj, Haridwar, Ujjain, and Nasik**, its schedule is based on planetary alignments, mainly of the Sun and Jupiter.
- The **Ardh Kumbh** occurs every six years in Haridwar and Prayagraj, the **Purna Kumbh** every 12 years in all four cities, and the **Maha Kumbh**, the rarest, every 144 years in Prayagraj.
- Mythologically, it marks the **spill of Amrit from the Samudra Manthan**.
- **Adi Shankaracharya**, in the 8th century CE, institutionalized these religious gatherings, founding the **monastery system and 13 Akharas**, whose warrior saints with tridents and swords are a key attraction
- Kumbh Mela is recognized by UNESCO as an **intangible cultural heritage of humanity**.

Gangasagar Mela

- The Gangasagar Mela is a Hindu festival that takes place annually on **Makar Sankranti** (Sun entering Capricorn) at the **Sagar Dwip** (Island) in West Bengal.
- It is also known as the **Gangasagar Snan or Gangasagar Yatra**.

- The festival is considered the **second-largest religious gathering** in India, following the Kumbh Mela.
- **Sagar Island** is located at the **confluence of the Hooghly River and the Bay of Bengal**.
- Mela is organised near the **Kapil Muni ashram**.
- Devotees pray to **Lord Surya, Goddess Ganga and Kapil Muni**.
- Gangasagar finds mention in the **Mahabharata** and **Kalidasa's Raghuvamsa**

World Monuments Watch

- The **Musi River Historic buildings in Hyderabad** and **Bhuj's Water Systems** are among 25 sites listed on the **World Monuments Fund's (WMF) World Monuments Watch**, which highlights threatened heritage sites.
- The Musi River corridor's historic landmarks, including the High Court and Osmania General Hospital, face risks from environmental decline and urbanization.
- **Bhuj's Water Systems**, which includes the sixteenth century **Hamirsar Lake** built during the reign of Rao Khengarji, and named after Jadeja ruler Rao Hamir (1472-1524), the founder of Bhuj, are in neglect.
- **World Monuments Fund (WMF)**, a non-profit founded in 1965 and based in New York, has worked on 700+ projects in 112 countries.
- Since 1996, its **World Monuments Watch** biennially identifies sites at risk from tourism, conflict, climate change, and disasters to drive preservation efforts.
- Notably, this year's list **includes the Moon**, marking the first time a site beyond Earth has been featured

Kanuma Panduga Festival

- **Kanuma Panduga**, is a key part of **Makar Sankranti** in Andhra Pradesh, dedicated to **cattle worship**.
- It marks the sun's northward journey, symbolizing **longer days and the arrival of spring**.

- Held on the **third day of Sankranti**, it honors **Lord Krishna**, who protected villagers and cattle by lifting **Govardhan Hill**.
- Farmers bathe, adorn, and worship their **decorated cattle** at temples.
- The festival also features **bullfights and wagers**, reflecting **community spirit and tradition**.



The Hatti Tribes



- The **Boda Tyohar** festival, the largest annual celebration of Himachal Pradesh's Hatti tribes, was celebrated.
- Also called **Magho ko Tyohar**, it spans a month and includes three **mini-festivals**—Bhatioj, Khoda, and Boidoot—highlighting **women's importance** in Hatti culture.
- At the **76th Republic Day parade**, the Hatti tribe's ancient folk dance **Sinhtoo** was performed.
- A **mask dance**, it features artists wearing handcrafted animal masks, with lion-masked performers taking center stage.
- The Hatti community's renowned folk dance remains **Natti**, which includes variants like **Sirmauri Natti and Kinnauri Natti**.
- Hatti tribe was accorded **Scheduled Tribe** status in 2023.
- They follow a **rigid caste system** and has a traditional council called **Khumbli** that decided village matters

Iron Age in South India

- The report Antiquity of Iron: Recent Radiometric Dates from Tamil Nadu reveals **evidence of iron use in Tamil Nadu dating back to 3345 BCE**.
- This challenges the belief that iron technology first emerged in Anatolia around 1300 BCE.
- Excavations at sites like **Sivagalai, Adichanallur, Mayiladumparai, and Kilnamandi** push India's Iron Age timeline further back from the previously estimated 1500–2000 BCE.

Radiometric dating measures the decay of radioactive isotopes to determine a material's age, using parent-daughter isotope ratios and half-lives to calculate time since formation.

It includes **Carbon-14 dating** (upto 50,000 years), **Uranium-Lead dating** (millions to billions of years) and **Potassium Argon dating** (thousands to billions of years)

Mannan Community

- Raman Rajamannan, **tribal king of the Mannan Community** from Kerala, attended the Republic Day celebrations in Delhi.
- The Mannan tribe, with around 3,000 people, **resides in 46 settlements across Idukki**.
- Originally from Tamil Nadu, they **fled during Chola-Pandya wars** and settled in Idukki's forests, forming a small kingdom.
- Following a **matrilineal system**, most work as farmers or daily wage laborers, with some in forest jobs.
- **Rajamannan, the first literate king**, holds an Economics degree.
- He has no palace, official vehicle, or civil authority but oversees community affairs with a **50-member council**, including four deputies and a prince.

Indus Script

- MK Stalin, the chief minister of Tamil Nadu, recently announced a **\$1m prize** for anyone who can crack the Indus script.

- The Indus script is the **earliest known writing system** developed in the Indian subcontinent, used by the **Indus Valley Civilization (c. 3300-1900 BCE)**.
- Most inscriptions are written from **right to left**, but some examples of **boustrophedon** (alternating direction) writing exist.
- It is said that the script was used mainly for commercial purposes and seals were mainly **used as tax stamps**, while the tablets were used as permits for tax collection, craft making or trading.



Challenges to deciphering the Indus script:

- ★ **Small number of scripts:** There are only about 4,000 of them, almost all on small objects such as seals, pottery and tablets.
- ★ **Brevity of each script:** Average length of about only five signs or symbols - with no long texts on walls, tablets or upright stone slabs.
- ★ **Not Bilingual:** There's also no bilingual artefact like the **Rosetta Stone**, which helped scholars decode Egyptian hieroglyphs.
- ★ **Such artefacts contain text in two languages**, offering a direct comparison between a known and unknown script.

Traditional Sports

- Mallakhamb was added as a medal sport, while Kalaripayattu remained a demonstration sport at the 38th National Games in Uttarakhand.
- **Kalaripayattu**, also known as Kalari, is an ancient martial art from Kerala, believed to date back to the Sangam period (600–300 BCE).

- The term combines 'Kalari' (training center) and 'Payattu' (fight/practice). Rooted in mythology and history, it is said to have been founded by **Parashurama**, the creator of Kerala.
- **Mallakhamb** originated in 12th-century Maharashtra and is named from Marathi words 'Malla' (wrestler) and 'Khamb' (pole).
- It involves performing **gravity-defying exercises on a vertical wooden pole**, enhancing strength, flexibility, and agility, traditionally serving as a wrestler's training regimen.



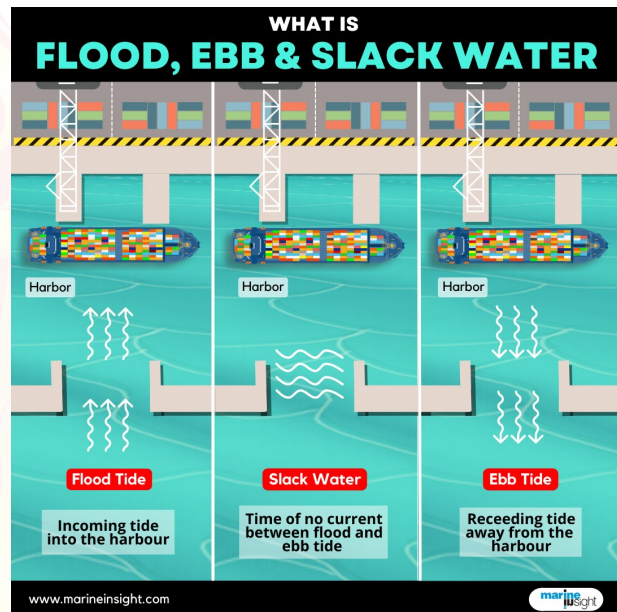
Kho Kho

- India won the inaugural men and women's **Kho Kho World Cup** held at New Delhi.
- Kho Kho is a **traditional Indian sport** and its origins are as old as Mahabharata.
 - The **chasing team** must tag out the **defenders** within a set time.
 - The team that tags out the most players wins.
 - **Kho is a voice signal sent to communicate** to other players to indicate their turn to chase.
 - Each kho-kho team consists of **12 players**, but during a match only **9 players on the field**.
- In 1959 **first National Championship was held** under the Kho Kho Federation of India (KKFI) which was set up in the year 1955.



Geography

Slack Tide



- A prolonged **high tide slack** in **Kochi, Kerala** caused **severe flooding**, as water remained still for over **two hours** instead of the usual **10-15 minutes**.
- **Slack tide** is a short period when tidal movement **pauses** before changing direction.
- It occurs between **flood (incoming tide)** and **ebb (outgoing tide)**.
- The extended slack tide allowed water to spread over a wider area causing flooding.
- The cause remains **uncertain**, and its recurrence is **unpredictable**.

Deccan Volcanism

- Study shows that **Deccan Volcanism** (~66 Million years ago) contributed to faunal extinctions (e.g., dinosaurs, ammonoids) but **promoted tropical rainforest diversification**.
- This massive volcanic event in western and central India **formed the Deccan Traps**, releasing lava, ash, and greenhouse gases for thousands of years.

- While it **wiped out gymnosperms and dinosaurs**, it created fertile, undisturbed habitats ideal for **angiosperms**.
- Despite global warming, **tropical flora recovered rapidly**.
- The study suggests **undisturbed rainforests can regenerate** under favorable conditions, offering insights into climate resilience.

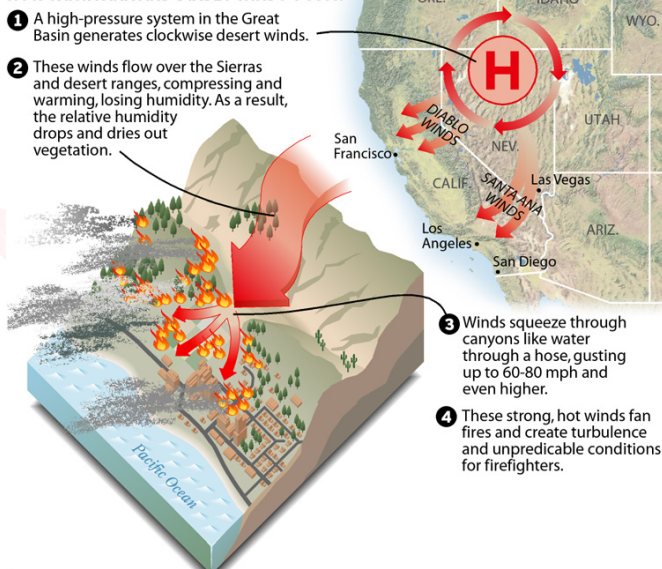
The California wildfires

- Ferocious wildfires erupted in California state of The United States, an unusual event for winter, driven by powerful Santa Ana winds and dry conditions.
- **Wet-to-Dry Cycle:** Unusually wet years (2022-23) led to excessive vegetation growth.
 - However, this winter's exceptionally dry conditions turned the vegetation into dry fuel for fires.
- **Santa Ana Winds:** These strong, dry winds from the Great Basin normally blow from October to January towards the Pacific.
 - This year, they were unusually strong, rapidly spreading the flames.
- **Climate Change Impact:** Rising global temperatures have caused longer, more intense dry seasons, early snowmelt, and vegetation moisture stress, increasing wildfire risks.

Diablo and Santa Ana Winds at a Glance

This is how the hot, powerful Santa Ana winds in Southern California and Diablo winds in Northern California increase the regions' fire risk.

HOW SANTA ANA AND DIABLO WINDS OCCUR



SOURCES: National Weather Service; Inside Climate News research

PAUL HORN / Inside Climate News

150 years of IMD

- The India Meteorological Department (IMD), under the **Ministry of Earth Sciences**, celebrates 150 years of service since its establishment in **1875**.
- It was founded after disasters like the **1864 Calcutta cyclone** and monsoon failures (1871) highlighted the need for centralized meteorological services.
- IMD is one of the **six Regional Specialized Meteorological Centers (RSMCs)** recognized by the **World Meteorological Organization (WMO)** for issuing cyclone advisories in the **Indian Ocean region**.
- IMD uses **Doppler Radars** for real-time weather monitoring that feeds the **Numerical Weather Prediction** to prepare forecasts for short to medium range forecasts (up to 10 days) and extended range.
- IMD's **Vision-2047** aims for **zero-error** severe weather forecasts at the block level by 2047.

Advancements in Forecasting:

- ✓ **40% improvement** in forecast accuracy over the last decade.
- ✓ **INSAT 3DR & 3DS** provide round-the-clock weather monitoring.
- ✓ **Heatwave prediction** accuracy rose from 50% (2014) to **95%** (now).
- ✓ **Thunderstorm detection** improved from 50% (2017) to **86%** (hourly).
- ✓ **Heavy rainfall prediction** accuracy increased from 50% to **78%** (3 days in advance).
- ✓ **Cyclone track prediction** improved by **35-40%**, reducing human casualties to near zero.

India's Coastline Recalculated

- India's coastline **expanded by almost half in just over five decades** according to a Ministry of Home Affairs report.
- The expansion is due to a **new measurement approach** that accounts for complex coastal features like **bays, estuaries, and inlets**, replacing older straight-line methods.

- Accordingly, India's coastline expanded by **47.6%**, growing from **7,516 km (1970) to 11,098 km (2023-24)**.
- 📍 **Gujarat** saw the largest increase, nearly doubling from **1,214 km to 2,340 km**.
- 📍 **West Bengal** had the highest percentage rise (**357%**), from **157 km to 721 km**.
- 📍 **Puducherry's** coastline shrank by **10.4%**.
- Unlike older methods that relied on **straight-line distance measurements**, the scientifically updated approach incorporates the **measurement of complex coastal formations** such as bays, estuaries, inlets, and other geomorphological features.

NEW PARAMETERS

➤ While earlier method relied on straight-line distance, new one **factored in complex coastal formations such as bays, estuaries and inlets**

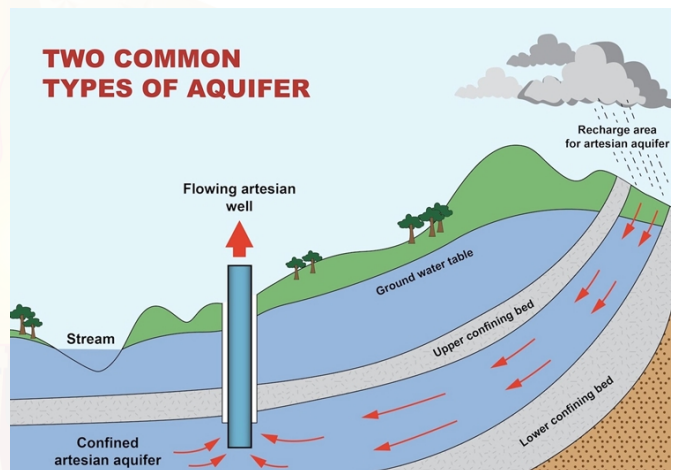
➤ Tamil Nadu's coast, with a revised length of 1,068km, has overtaken Andhra (1,053km)

➤ **Puducherry's coastline shrinks 4.9km**, a departure from general upward revision

- They are often found in areas where there are **layers of sedimentary rock**, such as sandstone and limestone

How It Works:

- ◆ **Confined Aquifer:** Water is held between two impermeable layers, preventing it from escaping freely.
- ◆ **Hydraulic Pressure:** Water in the aquifer is under pressure due to its elevation difference.
- ◆ **Drilling or Natural Rupture:** When a well or crack reaches the aquifer, the pressure forces the water to rise without pumping, sometimes even flowing to the surface as an **artesian well**.



Planet Parade



Artesian Condition

- In **Taranagar village, Rajasthan**, a rare phenomenon occurred when water gushed out forcefully from the ground after a farmer drilled a tube well up to 850 feet.
- This is known as the '**artesian condition**' or '**confined water**'.
- The **artesian condition** occurs when groundwater is trapped under pressure between layers of impermeable rock or clay which becomes a confining bed.
- This creates an **artesian aquifer**, which is a body of rock or sediment that can hold groundwater.

- A rare **planet parade** occurred recently, with **Venus, Saturn, Jupiter, and Mars** forming a stunning arc in the night sky.
- Uranus and Neptune** were also visible with a telescope.
- A "planet parade," also sometimes called a **planetary alignment**, is a celestial event where several planets **appear close together** in the same area of the sky due to their unique orbits around the Sun.

- It's **not a perfect line-up**, but rather a grouping where the planets are visually clustered when viewed from Earth.
- The last such alignment was in **May-June 2024**, when all solar system planets were visible.



New
PRELIMS CUM MAINS
BATCH

STARTS ON MARCH 5, 2025

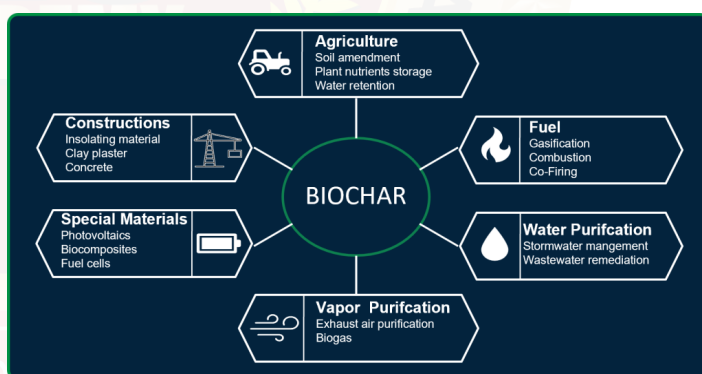


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Environment & Ecology

Remediating DDT-contaminated Soils

- Researchers have tested a method to **reduce DDT (dichlorodiphenyltrichloroethane) contamination** in soil using **biochar**.
- Biochar binds DDT, preventing its uptake by soil organisms. **reducing toxicity and bioaccumulation risks**.
- **Biochar** is a charcoal like material made from organic waste that's been partially burned in a limited amount of oxygen (**pyrolysis**).
- It's used as a **soil amendment** to improve plant health and store carbon.
- It is **highly porous, lightweight, with ~70% carbon**, plus nitrogen, hydrogen, and oxygen among others.
- DDT is linked to cancer, reproductive issues, and neurological problems.
- The **Stockholm Convention** on Persistent Organic Pollutants banned the use of DDT for agricultural purposes worldwide in 2001.
- **India** banned DDT for agriculture in **1972**.
- However, DDT is still permitted in small quantities for **malaria disease vector control** in countries that need it.



Chhattisgarh Green GDP

- **Chhattisgarh** has become the first state to link forest ecosystems with Green GDP.
- **Green Gross Domestic Product (Green GDP)** is a concept that subtracts environmental costs, like pollution and deforestation, from traditional GDP

- The state introduced an innovative plan that connects the ecosystem services of its forests with the Green GDP.

★ Chhattisgarh has **44% of its land covered by forests**.

- The new approach assesses the **benefits that forests provide**, such as regulating the climate, enriching soil quality, purifying water, absorbing carbon dioxide among others.
- To accurately estimate the economic value of forests, the scientists will assess the essential ecosystem services they provide. This includes:

➤ **Clean Air:** Amount of CO₂ absorbed by trees and converted into Oxygen will be quantified and its market value will be added to Green GDP.

➤ **Water Conservation:** The water provided by forest through rivers, springs will be calculated for its economic impact.

➤ **Biodiversity:** The contribution of forest fauna (animals, birds, insects) to maintain ecological balance and aiding farming.

Rhodamine B

- Various states in India have banned the use of Rhodamine B in human consumables like cotton candy and gobi manchurian.
- **Rhodamine B** is a synthetic dye known for its bright pink hue, commonly utilised in industries such as textiles, paper, cosmetics, and leather.
- Its application **extends to scientific research** due to its fluorescent properties.
- Studies have indicated that Rhodamine B can induce DNA damage, which is a **precursor to cancer**.
- However, Rhodamine B is **not officially classified as a carcinogen** by the World Health Organization (WHO).
- **Rhodamine B** appears **green in its powdered form**, but when dissolved in water or another solvent, it turns **bright pink or fluorescent red**.
- **FSSAI** has banned the use of Rhodamine B in foods.
- Some of the **FSSAI approved synthetic colours** are Ponceau 4R, Carmoisine, ErythrosineZ, Tartrazine and Sunset Yellow FCF, Indigo Carmine and Brilliant Blue FCF, Fast Green FCF etc.

Chinar Aadhaar



- The J&K government launched the **“Tree Aadhaar” mission** to conserve chinar trees by tracking each tree’s status.
- As part of the Mission, Chinar trees **across Kashmir and the Chenab region** have been mapped and assigned a unique Tree Aadhaar ID.
- **Chinar (Platanus orientalis var. cashmeriana)** is a Maple-like tree with a wide canopy, thriving in cool, water-rich areas.
- **Takes 30-50 years to mature** and up to 150 years to reach full size.
- In autumn its deep **green leaves may change to blood red**, amber, and yellow.
- Mughals expanded chinar plantations, considering it a **royal tree**.
- Jahangir established **Naseem Bagh**, a famous chinar garden in Srinagar.
- The **native distribution** spreads from Italy to the Balkans and Iran and to some pockets of the North Himalayas.

Wetland City Accreditation (WCA)

- **Indore and Udaipur** have become the **first two Indian cities** to join the Wetland City Accreditation (WCA) under the **Ramsar Convention on Wetlands**.
- WCA is a **voluntary scheme** established under **12th Conference of the Parties (COP12)** to the Ramsar Convention of 2015 held in Uruguay.
- The city is notified based on **6 criterias** which includes presence of a Ramsar site, measures for wetland and ecosystem conservation, wetland restoration measures, proper land-use planning, local participation and awareness creation.

➔ **Indore:** Sirpur Lake (Ramsar Site) recognised for water bird congregation and is being developed as a bird sanctuary.

➔ **Udaipur:** Surrounded by five major wetlands, namely, Pichola, Fateh Sagar, Rang Sagar, Swaroop Sagar, and Doodh Talai.

- The **accreditation is for 6 years** and will have to be renewed

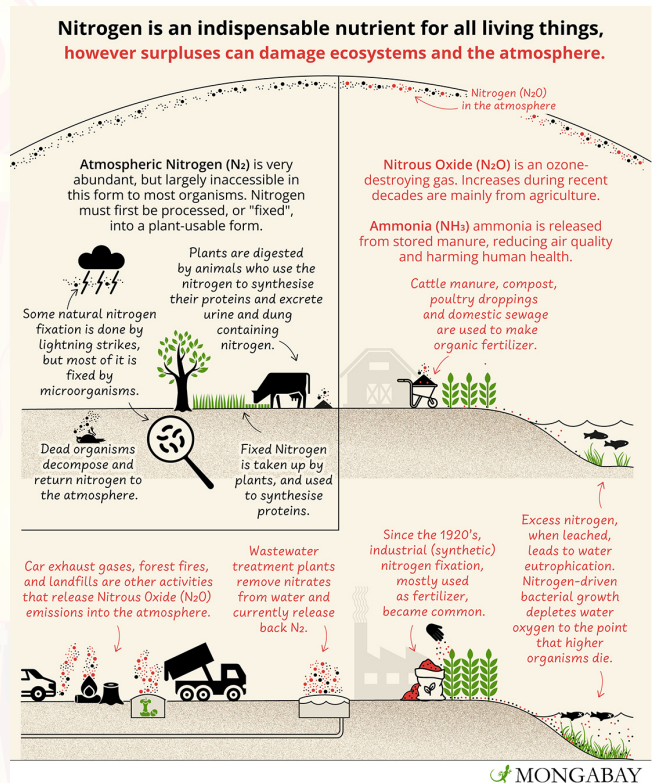
Organophosphate

- Doctors suspect **organophosphate poisoning** as the cause of 17 deaths in Jammu and Kashmir's Rajouri district.
- Organophosphates (OPs) are a class of chemicals that are used as **insecticides, herbicides, and nerve agents (chemical warfare)**.
- They are also used in the manufacturing of **plastics and solvents**.
- OPs are formed when **phosphoric acid and alcohol** are combined through an **esterification** process.
- **Atropine injections** are commonly used to treat organophosphate toxicity.

Nitrogen Pollution

- Studies show that humans are adding **reactive nitrogen** to the Earth's land surface each year through agriculture and industry adding to nitrogen pollution.
- While nitrogen makes up 78% of earth's atmosphere, plants cannot directly use nitrogen from the air because atmospheric nitrogen (N_2) is in a stable, inert form.
- Nitrogen is a key component of **proteins, DNA, and chlorophyll** of plants.
- Farmers add nitrogen-based fertilizers (**urea, ammonium nitrate**) to boost plant growth since they can absorb **nitrate (NO_3^-)** and **ammonium (NH_4^+)** from the soil.
- Livestock secretes **large amounts of nitrogen** in manure and urine.
- This nitrogen can volatilize as **ammonia (NH_3)** or leach into water sources as **nitrate (NO_3^-)**, leading to pollution.

- Clearing forests for grazing or feed production or industry **disrupts natural nitrogen cycles** and increases nitrogen release.
- Nitrogen pollution causes **water and air pollution, biodiversity loss**, and climate change, while also harming human health through **respiratory problems and other ailments**.



FORTUNE IAS ACADEMY

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5 TOPPERS IN FIRST ATTEMPT

 KASTURI SHA AIR 68	 FABI RASHEED AIR 71	 SIDDHANT KUMAR AIR 114	 MANJIMA P AIR 235
 PARVATHY GOPAKUMAR AIR 282	 SWATHI S BABU AIR 522	 DEVIKRISHNA P AIR 559	 OORMILA I S AIR 561
 MIRIDUL DARSAN AIR 630	 SAYANTH K AIR 701	 ANUSHA R CHANDRAN AIR 791	 SWATHY S AIR 827
 SACHIN ANAND AIR 855	 RAVEEN K MANOHARAN AIR 888		

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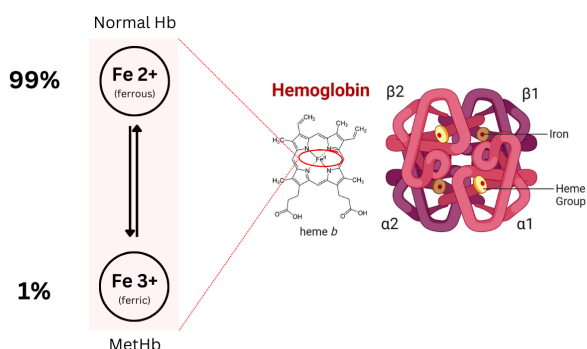
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Science & Technology

Methemoglobinemia

- The Central Ground Water Board (CGWB) annual assessment found excessive **nitrate (NO_3^-)** in groundwater.
- Nitrate levels above 45 mg/L pose health risks, especially **methemoglobinemia (Blue Baby Syndrome)**.
- When **nitrate** is ingested, it is converted into **nitrite (NO_2^-)** by bacteria in the body.
- This nitrite then **oxidizes the iron (Fe^{2+}) in hemoglobin to Fe^{3+}** , forming **methemoglobin**, which cannot bind and transport oxygen effectively.
- Infants have lower levels of **methemoglobin reductase** (responsible for converting methemoglobin back to hemoglobin) in their RBCs or erythrocytes and are consequently more vulnerable to these agents than adults.

Hemoglobin and Methemoglobin



Esterase

- Indian researchers have successfully used an enzyme esterase from soil bacteria **to break down diethyl hexyl phthalate (DEHP) plasticizer**.
- The esterase enzyme is produced by soil bacteria *Sulfobacillus acidophilus*.
- Plasticizers are **chemicals added to plastics and personal care products** to enhance flexibility and shine.

- DEHP** plasticizer is found in baby toys, shampoos, and food containers, plasticizers pose health risks due to skin absorption.
- The enzyme degrades DEHP into **mono-(2-ethylhexyl) phthalate (MEHP)** and **2-ethyl hexanol**.
- It can also bind to **polypropylene**, aiding in plastic removal from water.
- The enzyme remains active for **about a month and catalyzes the degradation of DEHP plasticizer** with significant efficiency.

Trichophyton (T.) indotineae

- Dermatologists from India and 13 other countries, including Germany, have **objected to the region-specific nomenclature** given to a novel species of fungus — *Trichophyton (T.) indotineae*.
 - T. indotineae* causes widespread and **hard-to-treat skin infections** and is resistant to most anti-fungal medicines.
 - The fungal species has turned up in over 40 countries and its **origin currently remains unknown**.
 - Strains now referred to as *T. indotineae* had been detected **not just in India but also in other countries** like Australia, Oman, and Iran.
- Hence dermatologists object naming the fungus after India as unjustified and incorrect

ISRO's Third Launch Pad



- The Union Cabinet approved a **third launchpad** at **Satish Dhawan Space Center (SDSC), Sriharikota**.

- The SDSC became operational on **October 9, 1971**, with the flight of 'Rohini-125', a small-sounding rocket, and was initially known as SHAR (Sriharikota Range).
- The **Sriharikota Range (SHAR)** was renamed the **Satish Dhawan Space Centre (SDSC)** on **September 5, 2002**, in honor of **Satish Dhawan**, former ISRO chairman.
- The **Second Launch Pad (SLP)** was **commissioned in 2005** and the first launch from this pad was **PSLV-C6** on **May 5, 2005**.
- Sriharikota is a sand dune formed as a **barrier island** in Andhra Pradesh.
- It was selected for India's **space program** due to its **proximity to the equator** (rockets gain an **extra velocity of ~450 m/s**) and **safe launch trajectories over the sea**

Toxic Male Technique

- A new study by Australian scientists has suggested that the toxic male technique could be used to **address the prevalence of mosquito-borne illness**.
- The technique employs **genetically modified male mosquitoes with semen laced with venomous proteins** to curb the spread of tropical diseases.
- When these males mate with females, the **proteins are transferred, significantly reducing female lifespan** and their ability to spread disease.
- Female mosquitoes are the **primary vectors for diseases such as malaria and dengue fever**, making them the target of this innovative approach.

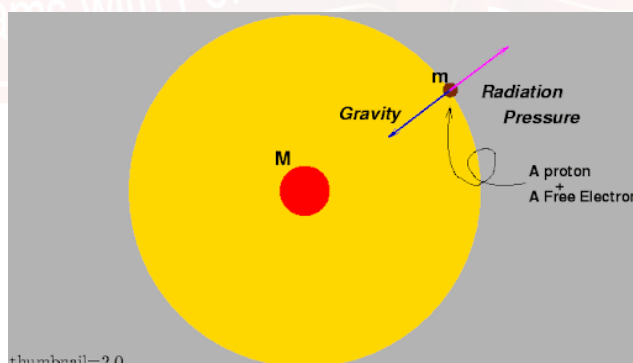
Methylcobalamin

- The **Food Safety and Standards Authority of India (FSSAI)** has provided clarity on use of methylcobalamin, **a form of Vitamin B12**, in health supplements, medical purposes and nutraceutical products.
- The permitted forms of Vitamin B12 currently include **cyanocobalamin and hydroxocobalamin**.

- Most of the Indian population is deficient in methylcobalamin due to a number of factors and most important among them is **the higher vegetarian population**.
- Best source for methylcobalamin is milk and milk products.
- Vitamin B12, **a crucial water-soluble vitamin**, is integral to DNA synthesis, red blood cell production, and neurological function.
- Deficiency in this vitamin can lead to **serious health consequences**, often requiring supplementation.

Eddington limit

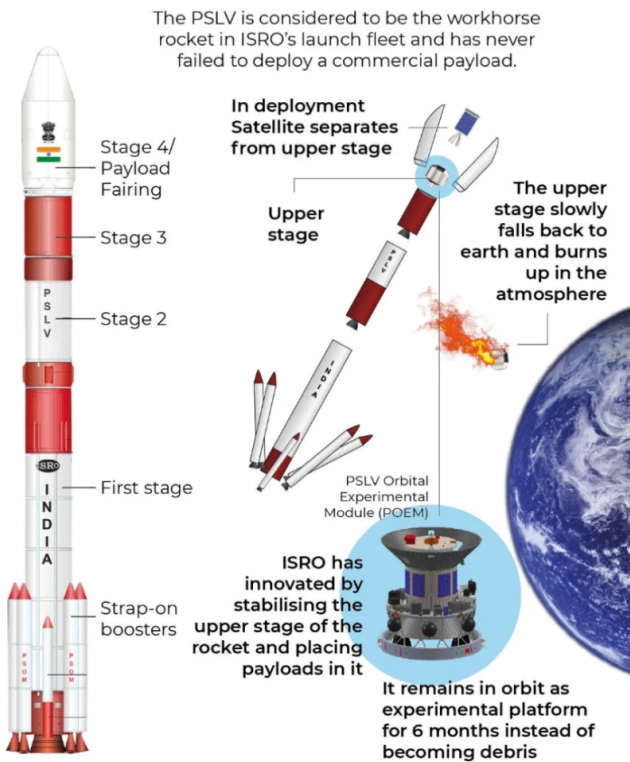
- An international team using NASA's James Webb Space Telescope (JWST) and Chandra X-ray Observatory discovered **LID-568**, a low-mass supermassive black hole that existed **1.5 billion years after the Big Bang**.
- Though **nothing escapes a black hole**, infalling matter heats up and emits radiation like **X-rays**, revealing the matter feeding (accretion) activity of black holes.
- At a point the **outward pressure from radiation** balances the **inward pull of gravity from black hole** and prevents further matter accretion.
- This balancing point is called the **Eddington limit** (or **Eddington luminosity**) and is the maximum luminosity a celestial object, such as a **black hole or a star**, can achieve.
- At this limit, the radiation force **prevents additional matter from falling into the black hole**.
- If the luminosity exceeds this limit, the object undergoes **super-Eddington accretion**, where it continues feeding at an unusually high rate.
- LID-568 is feeding at **40 times the Eddington limit**, surpassing the expected upper threshold.



CROPS

- ISRO's **cowpea seedlings** have sprouted in space, marking its first **biological experiment** under the **CROPS (Compact Research Module for Orbital Plant Studies)** program.
- CROPS, developed by **Vikram Sarabhai Space Centre**, is an **automated platform** for growing plants in microgravity.
- It housed **eight cowpea seeds** (*Vigna unguiculata*) in a controlled, airtight environment onboard **POEM-4**.
- POEM-4 (PS4-Orbital Experiment Module)** repurposes the **PSLV's spent fourth stage** for in-orbit **microgravity experiments**, extending its use up to **three months** instead of becoming space debris.

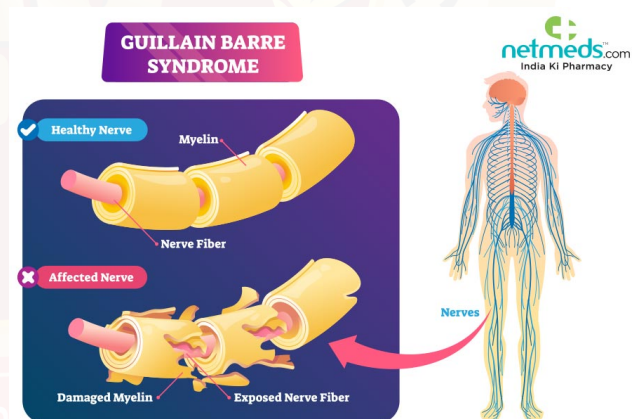
PSLV Orbital Experimental Module (POEM)



- However, this new study reveals that certain cells can exhibit a bias, **selectively inactivating one parent's copy of a gene**.
- By studying specific immune cells in typical individuals, the researchers found that these **cells inactivated either the maternal or paternal gene copy** in approximately 1 out of every 20 genes the cells use.
- This explains why people with the same genetic mutation can have **different symptom severities**.

Guillain Barre Syndrome

- Pune reported an outbreak of **Guillain-Barré Syndrome (GBS)** with 73 cases.
- GBS is a rare **autoimmune neurological disorder** where the immune system attacks the **peripheral nerves**, damaging the **myelin sheath**—an insulating layer that helps nerve signals travel efficiently.
- This leads to **muscle weakness and potential paralysis**.
- GBS can affect any age but is more common in **adults and males**, with an incidence of **1-2 per 100,000** people.
- According to the **WHO**, infection with **Campylobacter jejuni** (a cause of gastroenteritis) is a major risk factor, along with **viral infections and vaccinations**.



Selective Silencing

- Columbia University research reveals why some individuals with disease-causing genes remain symptom-free.
- Every cell in the body (except sperm and eggs) contains two copies of each gene, one inherited from each parent, and that both copies **contribute equally to cellular function**.

Nano Urea

- A study found that **nano-urea** reduced **protein content** in **rice and wheat** grains by **35% and 24%**, respectively.

- Promoted by **IFFCO**, nano-urea is a **foliar spray** alternative to conventional **urea**, which is heavily subsidized in India.
 - A **45-kg bag** costs **₹3,000** but is sold at **₹242** to farmers, providing **20 kg of nitrogen**.
 - IFFCO claims **500 ml of nano-urea** can replace **52 kg of nitrogen per hectare**.
- Unlike conventional **urea**, applied to **roots**, **nano-urea** is sprayed on **leaves** at **two flowering stages**.
- Study showed that the nano-urea spray proved ineffective, leaving the plants reliant on existing soil nutrients, thus likely resulting in reduced crop yields.
- New formulations with **8% and 20% nitrogen** also failed to **increase yields**.

Lower Sodium Salt Substitutes

- The WHO recommends **lower-sodium salt substitutes (LSSS)** and reducing sodium intake to **less than 2 g/day** to prevent cardiovascular diseases.
- High sodium intake causes **1.9 million deaths annually**
- Potassium chloride (KCl)**, a naturally occurring mineral, is used as a **salt substitute** as it helps lower hypertension.
- While sodium intake is excessive globally, potassium intake remains below the WHO-recommended **3510 mg/day**, making KCl a promising alternative
- However, **low-NaCl with KCl salts** are **costlier** than regular salt.
- Also, KCl poses risks for those with kidney disease, heart conditions, or certain medications.
- Excess intake may cause **hyperkalemia**, leading to irregular heartbeats, muscle weakness, or cardiac arrest.

Graphics Processing Unit (GPU)

- Various AI models have been in news trained on **Graphics Processing Unit (GPU)**

- The Ministry of Electronics and Information Technology's** IndiaAI Mission seeks to make a cluster of 18,693 GPUs available virtually to start-ups and researchers.
- Graphics Processing Unit (GPU) is a specialized **processor originally designed to render images and graphics** efficiently for computer displays.
- GPUs are characterized by their **high parallel processing power**, which allows them to **perform thousands of computations simultaneously**.

CPU	GPU
Central Processing Unit	Graphics Processing Unit
4-8 Cores	100s or 1000s of Cores
Low Latency	High Throughput
Good for Serial Processing	Good for Parallel Processing
Quickly Process Tasks That Require Interactivity	Breaks Jobs Into Separate Tasks To Process Simultaneously
Traditional Programming Are Written For CPU Sequential Execution	Requires Additional Software To Convert CPU Functions to GPU Functions for Parallel Execution

Silicon Carbide

- Researchers at **IIT-Madras** successfully extracted **silicon carbide (SiC)** from simulated lunar soil.
- Silicon carbide (SiC)**, also known as carborundum, is an extremely hard, synthetically produced crystalline compound of silicon and carbon
- It is an efficient heat conductor, chemically resistant and can be used as a semiconductor.
- The current research opens the **possibility of producing SiC on Moon** that can help build lunar habitats for humans in the future
- The researchers used a **lunar stimulant** that mimics the composition of the Moon's highland terrain, which is rich in **silicon, aluminum, and calcium**.
- ★ Moon has two distinct terrains - the plains, known as **maria (plural for mare)**, and highlands and the **highlands are rich in silicon** (among other elements such as aluminium and calcium).

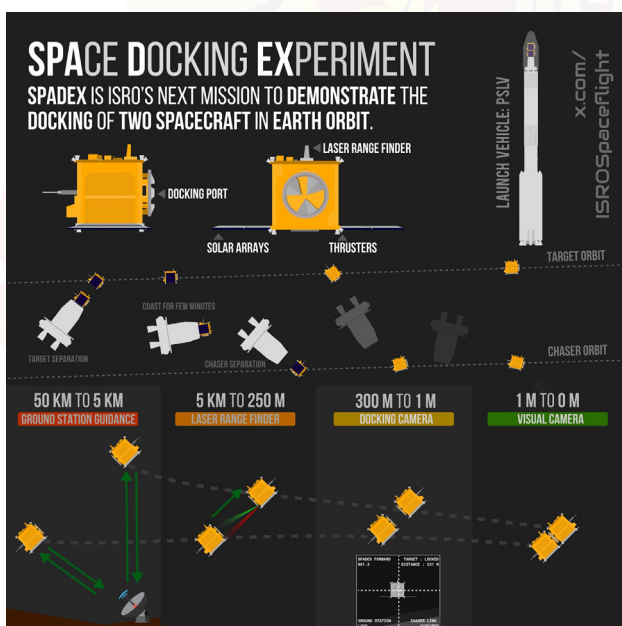
- However, the Moon lacks significant **carbon to produce SiC**, so researchers propose **using CO₂ exhaled by astronauts** as a carbon source.
- The researchers propose using the **Sabatier process** to first convert the **CO₂** to methane

and water using hydrogen.

- Then, the highland regolith on the moon can be **heated with methane** at high temperatures, leading to a reaction that forms silicon carbide.

Space Docking Experiment (SpaDeX)

- ISRO successfully executed the **SpaDeX docking experiment** making India the **fourth country** after the USA, Russia and China this historic feat.
- The two satellites **SDX01 (Chaser)** and **SDX02 (Target)** which were launched by the PSLV C60.
- The mission uses **androgynous spacecraft**, which means that either of the two satellites can act as the active spacecraft during docking.
 - This is different from older systems where one spacecraft had a “male” part and the other a “female” part.
- The SpaDeX mission is designed to develop and demonstrate the technology needed for **spacecraft rendezvous, docking and undocking**.
- This is crucial for future missions like **lunar sample return, astronaut missions, and the Bharatiya Antariksh Station (BAS)**.
- The experiment also tested **power transfer between docked spacecraft**, enabling **in-space robotics, composite spacecraft control, and payload operations** after undocking.



Defence

Combat Air Teaming System (CATS)



- Hindustan Aeronautics Limited (HAL) is successfully testing its **Combat Air Teaming System (CATS)** programme.
- CATS is an advanced **unmanned-manned teaming (UMT) system** developed by **Hindustan Aeronautics Limited (HAL)** for the **Indian Air Force (IAF)**
- A **manned fighter jet (Mothership)** controls **multiple UAVs/UCAVs**.
- It enables **deep strikes, close air support, and surveillance** while minimizing human risk.

Major Components:

- CATS Warrior** – A **stealth Unmanned Combat Aerial Vehicle (UCAV)** that flies alongside fighters for strikes.
- CATS Hunter** – A cruise missile with a **500+ km range**.
- CATS ALFA-S** – Swarm drones launched from aircraft.
- CATS Infinity** – A **high-altitude, solar-powered drone** for long-endurance missions.

Eurodrone programme

- India has, as an **observer state**, officially joined the Eurodrone programme.
- The Eurodrone programme is a major European initiative to develop a next-generation, **medium-altitude, long-endurance (MALE)** remotely piloted aircraft system (RPAS), also known as a drone
- Eurodrone is a **four-nation initiative** involving Germany, France, Italy, and Spain.
- The programme, led by Airbus Defence and Space (Germany), includes Leonardo (Italy),

Dassault Aviation (France), and Airbus (Spain) as major subcontractors.

- **Japan** joined as an observer state in 2023.
- Programme seeks to develop a **twin-engine drone** with around 40 hours endurance with first flight by 2026 and deliveries in 2028.

Bhargavastra

- India has successfully tested its **first indigenous micro-missile system**, Bhargavastra, designed **to counter swarm drone threats**.
- It is developed by **Economic Explosives Ltd (EEL)**, a subsidiary of Solar Group.
- The system features a **Command-and-Control Centre** equipped with advanced C4I (Command, Control, Communications, Computers, and Intelligence) technology.
- Its radar can detect **medium to large UAVs up to 10 kilometres away** and small drones at a range of 6 kilometres.
- An **Electro-Optical/Infrared (EO/IR) system** also ensures precise detection of low Radar Cross-Section (RCS) targets.
- It neutralizes threats using guided micro-munitions and **can be mounted on mobile platforms** for rapid deployment.

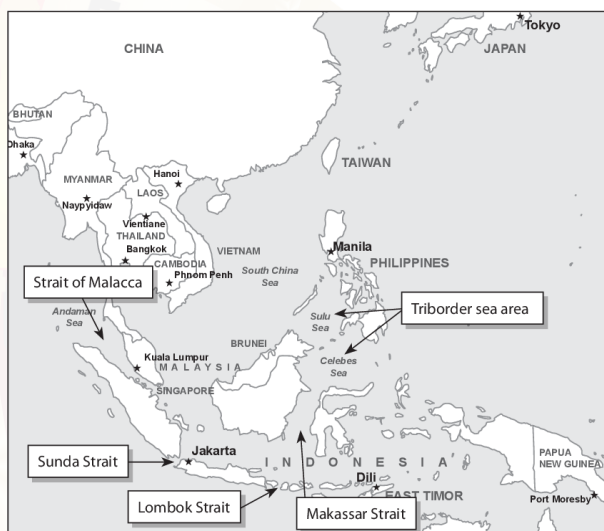


- The Pralay missile is a **short-range, surface-to-surface weapon** with a payload capacity ranging from 500 to 1,000 kg.
- Developed as a canisterised system, it boasts an operational **range of 150 to 500 kilometres**.
- The Pralay missile's **lethal edge lies in its quasi-ballistic nature**, allowing it to follow a **low trajectory** while **retaining the ability to manoeuvre** during flight.



A quasi-ballistic missile is a type of missile that **combines features of ballistic and cruise missiles** and can **maneuver in flight and change direction and range**, unlike a ballistic missile that follows a high-arching trajectory.

Exercise La Perouse



- The destroyer vessel Indian Naval Ship (INS) **Mumbai** participated in the **fourth edition** of the exercise La Perouse.
- Exercise La Pérouse is a **biennial, multinational naval exercise** that focuses on maritime security in the **Indo-Pacific region**.
- The naval exercise is being held in the straits between the Indian Ocean and the Pacific Ocean: Malacca, Sunda and Lombok.
- The exercise is conducted by the French Navy and involves navies from other countries.
- This includes **India, the US**, Canada, Malaysia, Indonesia, Australia, the UK and Singapore

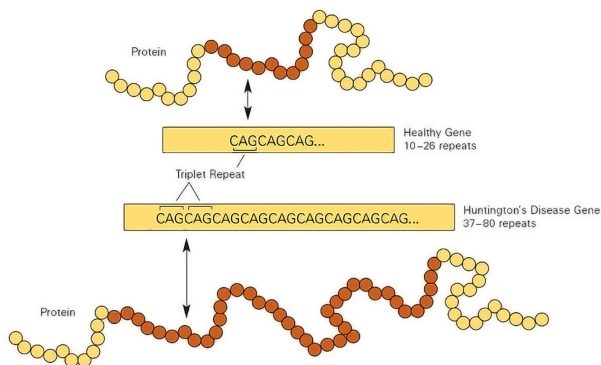
Pralay Missile



- The Pralay missile was showcased for the first time at the Republic Day parade at Kartavya Path in New Delhi.
- The missile is India's **first indigenously developed tactical quasi-ballistic missile**.
- Designed by the Defence Research and Development Organisation (DRDO), the missile can carry **both conventional and nuclear warheads**.

Miscellaneous

Huntington's Disease (HD)



- A new study explains why **Huntington's disease (HD)** symptoms appear in **midlife** despite the gene mutation being **present from birth**.
- Genes are composed of sequences made from four nucleotide bases—**adenine (A), cytosine (C), guanine (G), and thymine (T)**—arranged in various combinations.
- Huntington's disease is caused by an inherited mutation in the **Huntington (HTT) gene** in which a three-letter DNA sequence, **C-A-G, is repeated at least 40 times**.
- HD damages the nerve cells (neurons) that help to control voluntary (intentional) movement, as well as other areas.
- People living with HD **develop uncontrollable dance-like movements (chorea)** and abnormal body postures, as well as problems with behavior, emotion, thinking, and personality.

Entity Locker:

- **The National eGovernance Division (NeGD)**, under the Ministry of Electronics and Information Technology (MeitY) has developed Entity Locker.
- It is a digital platform, as part of India's Digital Public Infrastructure, designed to transform the management and **verification of business/organisation documents**.

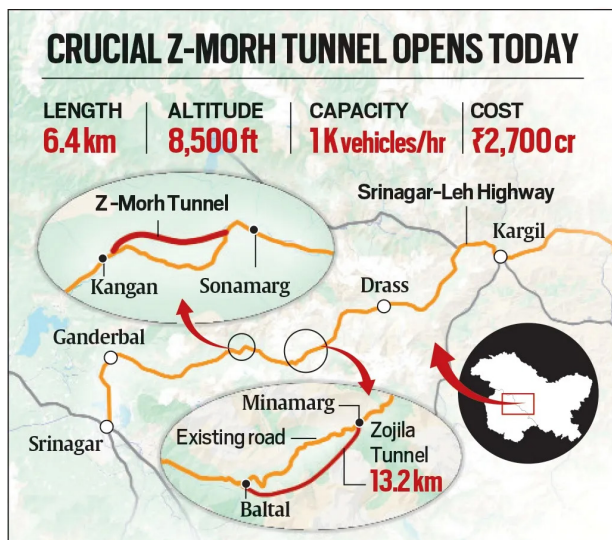
- Entity Locker is a secure, **cloud-based solution** that simplifies the storage, sharing, and verification of documents for a wide range of entities, including large organisations, corporations, micro, small, and medium Enterprises (MSMEs), trusts, startups and societies.
- Entity Locker is **seamlessly integrated** with the Ministry of Corporate Affairs, the Goods and Services Tax Network (GSTN), the Directorate General of Foreign Trade (DGFT) and other regulatory institutions.

Subhash Chandra Bose Aapda Prabandhan Puraskar

- The **Indian National Centre for Ocean Information Services (INCOIS)**, Hyderabad, has been selected for the 7th **Subhash Chandra Bose Aapda Prabandhan Puraskar 2025**.
- The annual award is given by the Government of India to recognize individuals and organizations for their **work in disaster management** since 2019.
- It is announced on **January 23**, the birth anniversary of Netaji Subhash Chandra Bose.
- **INCOIS** was established in 1999 as an autonomous organization under the Ministry of Earth Sciences.
- It operates the Indian **Tsunami Early Warning Centre (ITEWC)** and is recognised by **UNESCO as a top Tsunami Service Provider**.
- Provides forecasts for high waves, cyclones, and storm surges, ensuring coastal safety.
- INCOIS also provides **Potential Fishing Zone (PFZ) advisories** for fishermen.

Places in News

Z-Morh Tunnel



- The 6.5 km-long **Z-Morh tunnel** at Sonamarg was inaugurated recently.
- The project was developed by the **National Highways and Infrastructure Development Corporation Limited (NHIDCL)**.
- The Z-Morh tunnel is part of the **Zojila tunnel project** that aims to provide all weather connectivity from **Srinagar to Ladakh throughout the year**.
- The tunnel will provide **all-weather connectivity to Sonamarg**, a famous tourist destination on the Srinagar-Leh highway.
- The tunnel situated at an altitude of over **8,500 feet** has acquired its name for the **Z-shaped road stretch** at the place where the tunnel has been constructed.

Anji Khad Rail Bridge

- The Railways has successfully conducted a trial run of a tower wagon on the Anji Khad Bridge, in Jammu and Kashmir's Reasi district.
- Anji Khad Bridge is the country's "**first cable-stayed bridge**" connecting Katra and Reasi in Jammu and Kashmir.

- The bridge is a part of the national project, the **Udhampur-Srinagar-Baramulla Rail Link (USBRL)** Project which provides rail connectivity between the **Kashmir Valley and the rest of the country**.

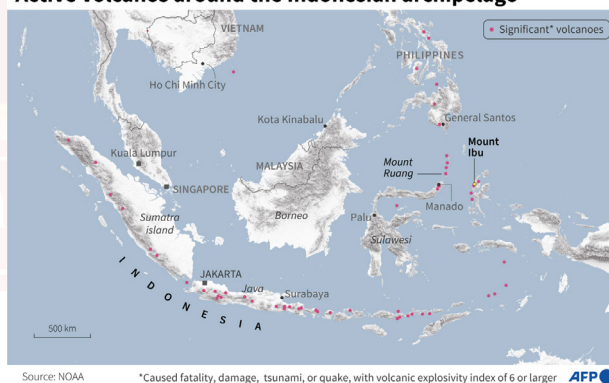
- The Bridge with a total length of 473.25 metres is the second-highest railway bridge after the arch bridge over the Chenab at Kauri.

➔ Chenabi Bridge is the **world's highest railway bridge at 359 metres** above the riverbed 35 metres higher than the Eiffel Tower in Paris.



Mount Ibu

Active volcanoes around the Indonesian archipelago



- The Ibu volcano in eastern Indonesia has erupted **at least a thousand times** this month and has sent a column of smoke up to 4 km into the sky in an eruption.

- Mount Ibu is a **stratovolcano** at the north-west coast of **Halmahera island**, Indonesia.
- 👉 A **stratovolcano**, also known as a **composite volcano**, is a **tall, conical volcano** built up by multiple layers of **lava, ash, and volcanic rocks**.
- Indonesia, a vast archipelago, experiences frequent seismic and volcanic activity as it lies along the **Pacific Ring of Fire**.
- **Mount Lewotobi Laki-Laki** of Flores Island & **Mount Ruang** in North Sulawesi province are other active volcanoes in Indonesia.

Point Nemo



Goma



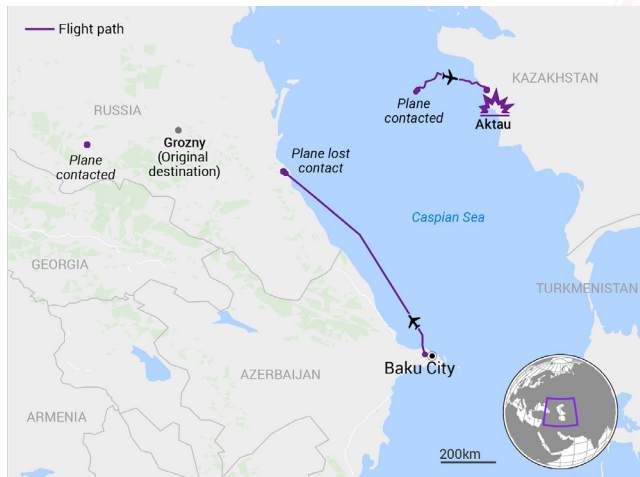
- Rwanda-backed M23 rebels captured Goma in **Democratic Republic of the Congo's (DRC)**
- Goma is the capital and largest city of the North Kivu Province.
- The infamous **Rwandan Genocide of 1994** saw the mass execution and exodus of Tutsis at the hands of majority Hutus.
- 👉 The M23 claims to be fighting for the **rights of the Tutsi ethnic group** in the DRC, alleging discrimination and marginalization by the government
- Goma is situated on the shores of **Lake Kivu at the Rwandan border**.
- It is flanked by two active volcanoes, **Nyiragongo** and **Nyamuragira**.

- Lieutenant Commanders Dilna K and Roopa A, aboard **INSV Tarini**, crossed Point Nemo recently as part of a circumnavigation expedition by the Indian Navy.
- The expedition for circumnavigation the globe on INSV Tarini by Indian Navy's Women Naval Officers is called **Navika Sagar Parikrama**.
- INSV Tarini, named after the Tara Tarini temple (Odisha), is a 56-foot long second sailboat commissioned in 2017
- **Point Nemo** is located in the South Pacific Ocean, approximately 2,688 kilometers (1,670 miles) away from the nearest land.
- Geographically, this mystery point is **located at the intersection of the equator**, the International Date Line, and the 90th meridian west.
- Officially called an **"Ocean Point of Inaccessibility,"** it is a watery graveyard for titanium fuel tanks and other high-tech space debris.

Plane crashes - places

- Plane crashes were reported across the world..
- **Azerbaijan Airlines** flying from **Baku** (Azerbaijan) to **Grozny** (Chechnya, Russia) crashed near **Aktau** International Airport in **Kazakhstan**.
- It is suspected to be an **anti-aircraft missile** that damaged the aircraft since the Grozny area was under attack from Ukraine and Russia had placed defence installations on high alert.
- **GPS spoofing** is alleged to have misdirected the flight into the conflict zone.

- **Jeju Air** was flying from **Suvarnabhumi Airport in Bangkok**, Thailand, to **Muan International Airport** in x'Muan County, South Korea.
- It is suspected to have faced a **bird strike/hit** that might have damaged its controls.
- It tried a **belly landing** at the airport as the landing gear did not deploy, but overshot the runway and **crashed** into a concrete structure holding the airport navigation system.



Jeju Air flight crashed on landing at Muan airport



SOURCE: AFP
STRAITS TIMES GRAPHICS



Species in News

Tarantula



- New species of **tarantulas**, including one new genus, was discovered from the Western Ghats.
- **Tarantulas are spiders** that exhibit interesting behaviors, such as females carrying their egg sacs under their mouth parts (or chelicerae) or creating hammock-like web structures to protect their eggs.
- They act as **biological pest controllers** and form part of the diet of other species like spider wasps and small carnivores.
- News Species include **Haplocastus bratocolonus** (meaning “tree dweller”), and **Haplocastus montanus** (living at elevations higher than 2,000 metres) in mountain forests.
- The new genus of tarantulas called **Cilantica**, named after the Tamil word for spider, was also discovered.
- India is home to **over 60 species of tarantulas**.

New Indo-Burmese Pangolin Species

- The **Zoological Survey of India (ZSI)** identified a new species of pangolin called the Indo-Burmese pangolin species (**Manis indoburmanica**).
- They had diverged from the **Chinese pangolin (Manis pentadactyla)** about 3.4 million years ago.

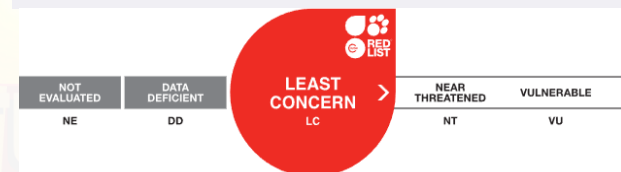
- Indo-Burmese pangolin has been found in Arunachal Pradesh and Assam, it may also inhabit Nepal, Bhutan, and Myanmar.
- Eight species of Pangolin exist** in the world across Asia and Africa, with two, Indian pangolin and Chinese pangolin found in India.
- Pangolins are uniquely covered in tough, overlapping scales.
- These mammals **eat ants and termites** using an extraordinarily long, sticky tongue, and are able to quickly **roll themselves** up into a tight ball when they feel threatened. .



The Golden Jackal

- In recent times, the Golden Jackal has been increasingly spotted in Navi Mumbai, highlighting the **growing impact of urbanisation on their natural habitats**.
- Golden jackals (Canis aureus)**, with an estimated population of 80,000 across India, are commonly **found in the mangroves lining the Mumbai Metropolitan Region's coastline**.
- These creatures are protected **under Schedule I of the Wildlife Protection Act, 1972**, due to threats such as diseases, hunting, and habitat destruction.
- Canis aureus** is listed as **Least Concern**.

- They are **considered crepuscular to nocturnal**, with their activities peaking at dawn and dusk.



Indian Grey Wolf



- The Indian grey wolf gave birth to eight pups in Karnataka's first Wolf Sanctuary - **Bankapur Wolf Sanctuary**.
- Indian Grey Wolf (Indian wolf, **Canis lupus pallipes**) is found in peninsular India and is listed as **Endangered according to IUCN**.
- It is protected under **CITES** and under schedule I of Wildlife Protection Act.

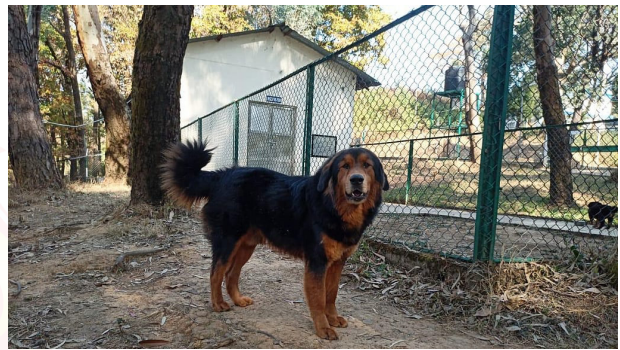
- It is a subspecies of grey wolf inhabiting semi-arid and arid areas and has a wide distribution range that extends from the **Indian subcontinent to Israel**.
- India is also home to the **Himalayan wolf (*Canis lupus chanco*)** found in the Upper Trans-Himalayan range.
- It is also called Tibetan wolf and is reported as a **Vulnerable** under IUCN red list.
- The 332-hectare **Bankapur Wolf Sanctuary** is made up of scrub forests, hills and natural caves.

Utricularia



- A rare and unique carnivorous plant 'Utricularia' has been found in Rajasthan's Keoladeo National Park in large numbers this season
- Commonly called **bladderworts**, this plant is typically found in regions like **Meghalaya and Darjeeling**.
- They occur in freshwater and wet soil as terrestrial or aquatic species across every continent except Antarctica.
- Utricularia is a fascinating species of **carnivorous plants** (over 240 species) **that prey on small organisms** using its bladder-like traps.
- They are highly specialized plants with vegetative organs not distinctly separated into roots, leaves, and stems.
- They lack a root system.

Gaddi Dog Breed



- The **Himalayan "Gaddi" dog** has been recognised as a breed by the National Bureau of Animal Genetic Resources (NBAGR) in Karnal, Haryana.
- **NBAGR under Indian Council of Agricultural Research (ICAR)** is the nodal agency for registering new breeds of livestock and poultry in India.
 - NBAGR was established in 1984 in Bangalore and moved to Karnal in 1985
- The Gaddi dog is the **fourth indigenous canine breed to be registered**, following the Rajapalayam and Chippiparai breeds of Tamil Nadu and the Mudhol Hound of Karnataka.
- This dog guards and is very steady, thus kept by the **Gaddi community, to guard their flocks from theft**.
 - **Gaddi community** is a semi-nomadic tribe of Himachal Pradesh and Jammu Kashmir.
 - They are known for their **transhumant pastoralism**, where they migrate with their livestock to find greener pastures.

Keywords

- **Phos-Chek:** It is a **flame retardant, bright red and pink powder** used to fight blazes in the US since 1963, and was recently used in California wildfires. The exact formula of Phos-Chek is not public but the product has 80% water, 14% fertiliser-type salts, 6% colouring agents and corrosion inhibitors.
- **Mea Culpa** - It is a Latin phrase that means **“through my fault”**. It’s used as an expression of remorse or apology for a mistake. Mark Zuckerberg, the founder and CEO of Meta, has expressed “mea culpa” for statements on Indian elections .
- **Doctrine of Merger:** It is a common law principle that states that when a higher court rules on a case, the lower court’s judgment is no longer valid. The higher court’s ruling becomes the final and binding judgment. It helps to maintain the decorum of the hierarchy of courts.
- **WASP-127B:** It is an exoplanet in the milky way galaxy far **approximately 520 light years** from the earth where astronomers have detected supersonic jet-stream winds howling at about **33,000 km per hour**. When compared to the earth’s upper atmosphere, the jet stream blows at a speed of 442 km per hour, and on Neptune wind speeds at 2,000 km per hour.
- **National Startup day:** Observed annually on **January 16th**, promotes the startup ecosystem and its role in economic growth and job creation. Now in its **ninth year**, it fosters a supportive environment for entrepreneurs.
- **Global Risks Report 2025:** It is published annually by the **World Economic Forum (WEF)** before its Davos meeting, analyzes major global risks. 2025 report gives state-based armed conflict as the **most immediate threat**, followed by climate change, societal polarization, extreme weather events, and cybersecurity threats
- **Cyclical Slowdown:** It is a temporary economic decline caused by **fluctuations in the business cycle**, such as reduced consumer demand, lower investment, or external shocks. It is usually short-term and reverses as economic conditions improve as opposed to a Structural slowdown, which is a long term decline due to deep-rooted issues like weak infrastructure, rigid labor laws, or declining productivity.
- **Pig Butchering Scam:** It is a type of financial fraud where scammers slowly build trust with victims, often through social media or dating apps, before persuading them to invest in fake schemes. Once the victim has invested significant amounts, the scammers disappear, stealing all the funds. It gets its name from the practice of **fattening a pig before slaughter**.
- **Firenado:** aka **fire tornado** is a **spinning column of hot air and gases rising up from a blaze**. When the air and gases rise, they also carry smoke, debris, and fire. It then creates a cloud called **a pyrocumulus, or “fire cloud.”** Sometimes a fire tornado can reach hundreds of feet into the air, but only last for a few minutes at a time.
- **HIMKAVACH:** (DRDO) has developed the **‘HimKavach’ clothing system** to protect **troops operating in the Himalayas**. The system, designed to function in temperatures ranging from **20°C to -60°C**. The HimKavach system is **made up of multiple layers**, each tailored for insulation, breathability, and comfort.

No.1

IAS ACADEMY IN KERALA

Our students leading Kerala
as officers



Sreelakshmi R IAS
Joint Commissioner
SGST



Akhil V Menon IAS
Asst Collector
Thiruvananthapuram



Alfred O V IAS
Asst Collector
Palakkad



Sreedhanya Suresh IAS
Inspector General of
Registration



Meera K IAS
Sub Collector (SDM)
Ernakulam



Safna Nazarudeen IAS
Sub Collector (SDM)
Thiruvalla



Kiran P B IPS
Asst. Commissioner
of Police
Malappuram



Ankit Asokan IPS
City Police
Commissioner
Thrissur



Arun S Nair IAS
Asst Collector
Idukki



Jeeva Maria Joy IFS
Regional Passport officer
Trivandrum



Dilip K Kainikkara IAS
Asst Collector
Kasargod



Arya V M IAS
Assistant Collector
Malappuram

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