

FORTUNE Prelims Precise

March 2025



FORTUNE IAS

Toppers 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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Polity & Governance

D-Voter

- The plight of **D-voters or Doubtful voters**, a concept unique to Assam, has been in news.
- Assam, which shares a 263 km border with Bangladesh, has witnessed decades of migration leading to nationalist insurgency.
- In 1985, as per the Assam accord with protesting groups, the Indian government declared that anyone entering Assam without valid documents after 24 March 1971 would be considered a foreigner.
- In 1997, the Election Commission marked people as "D" (Doubtful) voters after its officers found their citizenship questionable.
- Cases with "reasonable doubt" were referred to Foreigners Tribunals, where individuals had to prove citizenship with documents.
- The state still has around 97,000 people as **D-voters**. With some even in detention camps.

The Jan Vishwas Bill 2.0

- The Central government is set to decriminalise over 100 outdated legal provisions under Jan Vishwas Bill 2.0 to boost Ease of Doing Business.
- This follows the 2023 Jan Vishwas Act, which replaced 183 criminal provisions with civil penalties across 19 Ministries.
- The move aims to ease business operations, cut judicial backlogs, and attract more investment.
- The Joint Parliamentary Committee had recommended extending the exercise to further acts and the Department for Promotion of Industry and Internal Trade (DPIIT) has been tasked with it.

Recently, Vidhi Centre for Legal Policy, an independent think-tank, mapped 882 central laws, revealing 370 laws with criminal provisions covering 7,305 offences.

Of these, 5,333 attract jail terms, 982 have mandatory minimum sentences, 433 allow life imprisonment, and 301 carry the death penalty.

Notably, only 25% fall under criminal justice laws; the rest cover everyday matters like child care and public gatherings.

Global Free Speech Survey 2024

- A global survey by the **U.S.-based Future of** Free Speech ranked India 24th out of 33 countries on support for free speech, with a score of 62.6.
- The survey noted **global declines** in free speech support since 2021, especially in democracies like the U.S., Israel, and Japan.
- Norway and Denmark topped the index, while Indonesia, Malaysia, and Pakistan showed the most improvement.
- Some authoritarian-leaning nations Hungary and Venezuela scored unexpectedly high.
- In India, while most value free speech, support for criticizing government policies was below average—37% believed governments should be able to prevent such criticism, the highest among all countries surveyed.

Dramatic Performances Act of 1876

- The Prime Minister highlighted the need to eliminate outdated laws curbing individual freedoms, such as the Dramatic Performances Act (DPA) of 1876.
- Enacted by the British to suppress nationalist sentiment after the 1875 visit of Prince Albert Edward, the DPA allowed authorities to ban plays deemed scandalous or seditious and permitted warrantless searches with penalty.
- Though the Allahabad High Court ruled the DPA unconstitutional in 1956, it remained on the books in some states.
- It was formally repealed in 2018 as part of efforts to scrap obsolete laws.

Article 372 of the Constitution states that laws in operation at the time of Independence would continue to be in operation.

However, colonial laws do not enjoy the **presumption of constitutionality** – which means that when a colonial law is challenged, the government must defend the law for it to be valid.

Supreme Court Stays Lokpal Order on HC Judge

- The Supreme Court is hearing a case against a Lokpal order that took up a corruption **complaint** against a High Court judge.
- Section 14 of the Lokpal and Lokayuktas Act, 2013, outlines the jurisdiction of the Lokpal, the national ombudsman, specifying which individuals and entities are subject to its investigation.
- This **includes** the Prime Minister (with certain restrictions), Union Ministers, Members of Parliament, and group A, B, C and D union officials.
- Section 14 of the Lokpal Act allows it to probe bodies created by Acts of Parliament.
- Lokpal argued High Courts fall under this, unlike the Supreme Court, which is constitutionally created under article 124
- However, the SC, invoking Article 32, took suo motu cognisance, warning of the executive probing the judiciary.
- It noted all High Court judges take oath under the Constitution and thus fall outside Lokpal's ambit.
- Section 15 of the Bharatiya Nyay Sanhita, 2023 states that a judge cannot be charged with an offence if the allegation is related to the exercise of her official duties.
- In K. Veeraswamy v. Union of India (1991), a five-judge Constitution Bench held that judges are public servants under the Prevention of Corruption Act, 1988.
- It also ruled that **no criminal complaint** can be registered against a High Court or Supreme Court judge without prior consultation with the Chief Justice of India.

Supreme Court In-House Inquiry **Process**

- CJI Sanjiv Khanna has initiated a **three-member in-house inquiry** into a former Delhi HC judge following allegations that wads of cash were found at their residence after a fire incident.
- This internal judicial process is **separate from** impeachment under Article 124(4).
- It **begins with a complaint** received by the CJI (either directly or forwarded by the HC Chief Justice or the President).
- If found serious, the CJI may seek a **preliminary report** from the concerned HC CJ.
- If a deeper investigation is needed, the CJI forms a three-member committee.

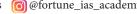
This in-house committee **typically comprises** two Chief Justices from other High Courts and one High Court judge.

In cases involving a High Court Chief Justice, the committee may include a Supreme Court judge and two Chief Justices.

In case of a complaint against a **Supreme Court** judge, the committee would consist of three Supreme Court Judges.

Doctrine of eminent domain

- The Supreme Court ruled that transferring land acquired by the government for public purposes back to the original owner through private agreements constitutes a fraud on the state's power of eminent domain.
- The doctrine of eminent domain is a legal principle that grants governments the authority to acquire private property without the owner's consent for public use, provided that just compensation is offered.
- In India, this power is governed by **Article 300A** of the Constitution, which states that no person shall be deprived of their property except by the authority of law.
- Additionally, Article 31A protects laws related to property acquisition from being invalidated on the grounds of violating fundamental rights.
- The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 has created a due process for operationalising this doctrine.



India's First National Cooperative University

- The Parliament passed the **Tribhuvan Sahkari** University Bill, 2025 to establish the country's first national cooperative university.
- The law will convert the **Institute of Rural** Management Anand, Gujarat (IRMA), currently a registered society, as the "Tribhuvan" Sahkari University.
- The headquarters will be Anand, Gujarat.
- It aims to revolutionise education, research and training in the cooperative sector.
 - The University is named after **Tribhuvandas** Kishibhai Patel (1903-1990), an Indian independence activist, lawyer, politician who is regarded as the father of the cooperative movement in India.
 - He founded the Kaira District Co-operative Milk Producers' Union in 1946, and the Anand Co-operative movement.
- TSU will be an **institute of national importance** and will impart technical and management education and research in the cooperative sector and attain the mission of "Sahakar se Samriddhi"...
- IRMA will become one of the schools of the university.

Habitual Offenders Laws

- The Union government disclosed that "habitual offender" laws remain active in 14 States and **Union Territories,** despite the Supreme Court's recent concerns about their misuse against denotified tribes (DNTs).
- These laws have **colonial origins**, notably the Criminal Tribes Act (CTA) of 1871, which labeled certain communities as inherently criminal.
- A habitual offender is a person repeatedly convicted of crimes, often subject to stricter surveillance or penalties under special laws
- Although the CTA was repealed in 1952, it was succeeded by the Habitual Offenders Act (HOA) 1952, perpetuating biases against DNTs.
- Following the repeal, the communities previously identified as "criminal tribes" were reclassified as "denotified, nomadic, and semi-nomadic tribes" (DNTs, NTs, SNTs).

- The HOA, 1952 shifted the focus from classifying entire communities as prone to crime to identifying individuals based on their criminal records.
- Various committees, including the Criminal Tribes Act Enquiry Committee (1949–50) and the B.S. Renke Commission (2008), have criticized these laws for reinforcing stigma.
- In October 2024, the Supreme Court deemed classifications "constitutionally suspect" and urged states to reconsider their continuation.

Business Advisory Committee

- Rajya Sabha Chairman Jagdeep Dhankhar recently left a Business Advisory Committee (BAC) meeting due to alleged lack of decorum by the Opposition.
- The BAC's role is to recommend time allocation for government legislation and private members' bills/resolutions.
- **Members** are nominated proportional to their representation in the houses.
- First formed on July 14, 1952, the Rajya Sabha's **BAC has 11 members**, including the Chairman (who presides, or the Deputy Chairman if the Chairman is absent), with a quorum of five.
- In contrast, the Lok Sabha's BAC has 15 members, chaired by the Speaker (ex-officio), with members nominated annually.
- The LS Speaker also invites unrepresented Opposition party leaders (with five or more members) as special invitees.

Economy

12th 3R and Circular Economy **Forum**

- The Ministry of Housing and Urban Affairs launched the Cities Coalition for Circularity (C-3) at the 12th Regional 3R and Circular **Economy Forum** in Jaipur, promoting city-tocity collaboration on sustainability.
- Regional 3R Forum in Asia was established at Japan's proposal in 2009 as a platform for broad cooperation on promotion of the 3Rs - reduce, reuse and recycle - in Asia
- The forum added "Circular Economy" in 2020 and is also supported by the United Nations Centre for Regional Development (UNCRD).
- UNCRD was established in 1971 Nagoya, Japan to promote sustainable regional **development** in developing countries
- The forum saw the adoption of Jaipur 3R and Circular Economy Declaration (2025-2035) - a non-binding roadmap for sustainable urban growth.
- The last Forum was hosted in 2023 by Cambodia.
- India has previously hosted the Forum in 2018, when the 8th edition was held in Indore.

A **circular economy** is an economic system aimed at eliminating waste and promoting the continual use of resources through reuse, recycling, and regeneration.

Time Use Survey (Jan-Dec 2024)

The National Statistics Office (NSO), under the Ministry of Statistics and Programme Implementation, has released the **second Time Use Survey**, highlighting gender disparities in unpaid work.

Key Findings:

Unpaid Domestic Work: Women (age 6+) spend 289 mins/day vs men's 88 mins; women aged 15-59 spend 305 mins/day (down from 315 mins in 2019).

- Caregiving: Women spend 137 mins/day vs men's 75 mins; 41% of women (15–59) participate vs 21.4% men.
- **Paid Work:** 75% of men (15−59) engaged in employment vs only 25% of women.
- Age Factor: Burden of unpaid work on women increases with age.
- **Economic** Govt estimates Value: women's unpaid domestic work to worth 15–17% of India's GDP.

About the Survey:

India joins countries like Australia, Japan, US, China in conducting and national-level time-use surveys. The first pilot was in 1998, followed national survey in 2019. а The survey tracks time spent by men and women on various paid and unpaid activities.

Zero-for-Zero Tariff Strategy

US President Donald Trump has announced reciprocal tariffs on India from April 2025.

India's Possible Strategy - Zero-for-Zero Tariff Deal:

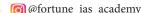
- India may propose a 'zero-for-zero' deal, eliminating tariffs on select US goods without harming its domestic sectors.
- In return, the US would remove tariffs on a comparable number of Indian goods.
- Thoughit may violate WTO's MFN principle, it can be justified under GATT Article XXIV by framing it as a free trade agreement.

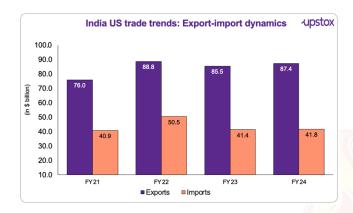
GATT Article XXIV – Key Conditions:

Eliminate barriers on **substantially all trade** among parties.0

Do so within a **reasonable period** (typically 10

Must not raise tariffs or trade restrictions on other WTO members (those outside the agreement) compared to what they were **before** the agreement.





Modified Ethanol Interest Subvention Scheme

- The **Department of Food Public Distribution** has announced an MEIS scheme to help Cooperative Sugar Mills (CSMs).
- The scheme aims to support CSMs in upgrading their existing ethanol production facilities, which currently rely solely on sugarcane, into multi-feedstock plants.
- This would allow them to use alternative raw materials such as maize and damaged food grains (DFG), which are unfit for human consumption but suitable for ethanol production.
- By diversifying feedstock sources, the mills can operate throughout the year, beyond the limited 4–5 month sugarcane crushing season.
- It will boost efficiency and support the target of 20% ethanol blending with petrol by 2025.
- The Centre will provide interest subvention at 6% per annum or 50% of the bank interest rate (whichever is lower) for five years (including one-year moratorium) on loans.

Crypto Strategic Reserve

- The U.S. President has announced the creation of a 'Crypto Strategic Reserve'.
- This marked a major policy shift by allocating part of national reserves to cryptocurrencies like Bitcoin, Ethereum, XRP, Solana, and Cardano.
- The plan, aimed at enhancing financial **stability** and hedging against inflation, sparked a surge in crypto markets.
- To fund this reserve, the U.S. may sell part of its gold reserves to buy 1 million Bitcoin (5% of total supply).

- Only three countries—El Salvador, Bhutan (partially only), and the Central African Republic—currently recognize crypto as legal tender.
- Both US and India allow buying and selling of cryptocurrencies but it is **not a legal tender.**
- India has imposed a 30% tax on crypto income and 1% TDS on transactions, treating it as a virtual digital asset.

Energy Statistics India 2025

The National Statistics Office (NSO) under the Ministry of Statistics and Programme Implementation (MoSPI) released the "Energy Statistics India 2025" report, highlighting a 7.8% growth in India's Total Primary Energy Supply (TPES) for FY 2023-24, indicating robust economic expansion.

Energy Composition:

- Coal: 48% It's a major source of electricity generation in India.
- Note: 28% primarily used in transportation and industry.
- Natural Gas: 8% primarily consumed by industry and used for power generation.
- Renewable Sources (solar, wind, hydro, biomass): 12%
- Nuclear: 4% India has 24 nuclear reactors in operation in 8 nuclear power plants,
- As of March 31, 2024, India's total renewable energy potential is estimated at 2,109,655 Megawatts, with wind power comprising approximately 55% of this potential, followed by solar and large hydro.
- Rajasthan, Maharashtra, Gujarat, and Karnataka collectively account for over half of this potential.
- The installed capacity for electricity generation from renewable resources has seen a Compound Annual Growth Rate (CAGR) of 10.36% between 2015 and 2024.
- The Energy demand is primarily driven by industrial growth (40%), transportation (25%), and residential use (20%).

The India BioEconomy Report

- India's bioeconomy reached a valuation exceeding \$165 billion in 2024, contributing over 4.2% to the nation's GDP.
- The Department of Biotechnology projects this sector to expand to approximately \$300 billion by 2030 and **\$1 trillion by 2047**.
- The bioeconomy refers to the production, utilization, and conservation of biological plants, resources—including animals, microorganisms, and their derived biomass to generate goods, services, and energy across various economic sectors.
- The **industrial sector**, focusing on biofuels and bioplastics, contributed roughly \$78 billion, accounting for nearly half of the bioeconomy's value.
- Recognizing the sector's potential, the government introduced the Biotechnology for Economy, Environment, and Employment (BioE3) policy in 2024 to establish India as a global hub for bio-manufacturing

VALUE OF INDIA'S BIOECONOMY | TOP CONTRIBUTING in billion dollars 165.7 151.1 137.2 106.3 2020 2021 2022 2023 2024 *in billion \$. Source: India BioEconomy Report

State	Value*	Share of total value
Maharashtra	35.45	21.4%
Karnataka	32.4	19.5%
Telangana	19.9	12%
Gujarat	12.9	7.8%
Andhra Pradesh	11.1	6.7%
Tamil Nadu	9.9	6%
Uttar Pradesh	7.7	4.6%

Gold Monetisation Scheme (GMS)

- The Indian government has discontinued the Medium-Term (5–7 years) and Long-Term (12-15 years) deposit options under the Gold Monetisation Scheme (GMS), effective March **26, 2025**, due to evolving market conditions and the scheme's performance.
- However, Short-Term Bank Deposits (1–3 years) will continue at the discretion of individual banks based on commercial viability.
- Launched in **November 2015**, the GMS aimed to mobilize idle gold held by **resident** individuals and institutions.

- The scheme allowed deposits of a minimum of 10 grams of raw gold (bars, coins, jewelry without stones or other metals) with no specified maximum limit.
- Authorized Collection and Purity Testing Centres (CPTCs), will issue a certificate indicating the gold's quantity and purity.
- This certificate was presented to a participating bank to open a **Gold Savings Account**, crediting the account with the deposited gold amount.
- Upon maturity, depositors could redeem the principal and interest either in gold or cash equivalent, as per the terms agreed upon at the time of deposit

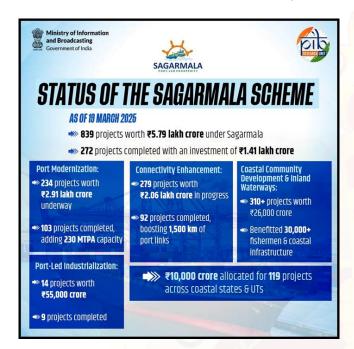
Abolition of Equalisation Levy

- The government proposed to abolish the Equalisation Levy or digital tax on online advertisements from April 1.
- As of now 6% is the Equalisation Levy on online advertisements and abolishing this levy will reduce the tax burden on digital ad consumers and costs on platforms like Google, X and Meta.
- The digital tax was introduced in India in 2016 as a measure to tax cross-border digital advertising transactions.
- It was specifically designed to target nonresident digital platforms that generated revenue from Indian advertisers, even when these platforms had no physical presence in India.
- The proposal to remove the Levy, according to experts, is aimed at showing an accommodative stance to the US, which has threatened to introduce reciprocal tariffs from April 2.

The Sagarmala Programme

- The Sagarmala Programme, launched in 2015 by the Ministry of Ports, Shipping, and Waterways (MoPSW), has completed 10 years.
- The program focuses on **port modernization**, industrial growth, job creation, sustainable coastal development, ensuring minimal infrastructure investment while maximizing economic impact.

- It is a key pillar of the Maritime Amrit Kaal Vision 2047 (MAKV), driving India's ambition to become a global leader in maritime affairs.
 - Building on Maritime India Vision 2030, MAKV aims to position India among the top five shipbuilding nations by 2047.



Changing Dynamics of India's Remittances

- The Reserve Bank of India's recent survey highlights a shift in India's remittance sources, with advanced economies surpassing Gulf nations.
- In FY24, the U.S. contributed 27.7% of total remittances, up from 23.4% in FY21, while the U.K.'s share increased to 10.8% from 6.8% in the same period.
- The **UAE remained the second-largest source** at 19.2%.
- States like Maharashtra (20.5%), Kerala (19.7%), and Tamil Nadu (10.4%) were the top recipients.
- Notably, remittances exceeding ₹5 lakh accounted for 28.6% of the total, whereas transfers of ₹16,500 or less constituted 40.6%



Becoming a High-Income Economy in a Generation

- A recent World Bank report, 'Becoming a High-**Income Economy in a Generation**,' indicates that India needs an average annual growth rate of 7.8% over the next 22 years to attain high-income status by 2047.
- Achieving this requires:
 - Boosting Investment: Increase real investment rate from 33.5% to 40% of GDP bv 2035. **Enhancing Employment**: Raise labor force participation, especially among women, by creating jobs in sectors like manufacturing and services.
 - **Promoting Productivity**: Shift resources from agriculture to more productive sectors and adopt advanced technologies.
 - Facilitating Inclusive Growth: Implement tailored policies for states at different development stages to ensure balanced progress
- India's Gross National Income (GNI) per capita, using the World Bank Atlas method, was reported at \$2,540 in 2023, making India a Lower Middle Income Country.



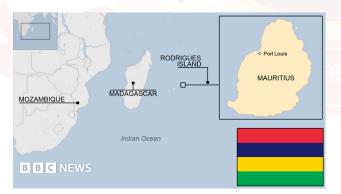
International Relations

Mission 300

- The World Bank (WB) and the African **Development Bank (ADB)**, supported by a host of other partners, have launched Mission 300 recently.
- Mission 300 is an ambitious initiative to connect 300 million people to electricity in Sub-Saharan Africa by 2030.
- Nearly 600 million Africans lack power, representing 83% of the global energy deficit.
- The mission seeks to achieve the goals by expanding the electricity grid and increasing connections in underserved areas and deploying mini-grids and standalone solar solutions to bring power to remote, off-grid communities.

The Grand Commander Award

- The Indian Prime Minister was conferred Mauritius's highest award, "The Grand Commander of the Order of the Star and Key of the Indian Ocean."
 - PM Modi is the first Indian to receive the honour.
- It is the **highest distinct order of merit** in the honours system of Mauritius established under the National Awards Act 1993.
- It was founded in 1992 to decorate people who have made a contribution to social progress in the nations of the Indian Ocean.



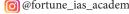
World Food Programme (WFP)

- The UN's World Food Programme (WFP), headquartered in Rome, is closing its southern Africa office due to US aid cuts.
- US president Trump has massively **cut down** its funding, having received \$4.4 billion from the US last year—about half its annual budget and over four times more than Germany, the next largest donor.
- WFP was **established in 1961** by the Food and Agriculture Organization (FAO) and the United Nations General Assembly to combat global hunger and aligned with **SDG 2: Zero Hunger.**
- It won the 2020 Nobel Peace Prize for fighting hunger and promoting peace in conflict zones.
- Its 36-member Executive Board is jointly elected by ECOSOC and the FAO Council.
- WFP manages United **Nations** the Humanitarian Air Service (UNHAS) and the **UN Humanitarian Response Depot (UNHRD)**, providing crucial logistics support to the wider humanitarian community.
- It is entirely funded by voluntary donations from governments, corporations, and private donors.

Alien Enemies Act

- The US President invoked the Alien Enemies Act to deport individuals linked to the Venezuelan gang Tren de Aragua.
- The Alien Enemies Act grants the **president of** the United States sweeping powers to order the detention and deportation of natives or citizens of an "enemy" nation without following the usual processes.
- It was passed as part of a series of laws in 1798 when the US believed it would enter a war with France.
- The act states that "whenever there shall be a declared war or any invasion or predatory incursion shall be perpetrated, attempted, or threatened" against the US, all "subjects of the hostile nation or government" could be "apprehended, restrained, secured and removed, as alien enemies".
- The act has only been previously used three times - all during times of conflict involving the US which includes World War II.





Lithuania Exits Cluster Bomb Convention

- Lithuania has quit an international convention banning cluster bombs, citing security concerns over neighbouring Russia.
- It is the **first country to leave the convention**, which was adopted in 2008, and the first European Union country to leave a multilateral arms regulation agreement.
 - Russia and Ukraine are not members of the convention and have both used cluster bombs in their three-year-long war.
- A cluster munition or a cluster bomb is a weapon containing multiple explosive submunitions that can disperse from 10 to several hundred bomblets over a target area.
- They can be dropped from an aircraft or fired in missiles or artillery shells and contain more explosive power and metal fragmentation, enabling them to cause multiple casualties.

The Convention on Cluster Munitions (CCM):

- Israel's indiscriminate use of the weapon in Lebanon in August 2006 resulted in more than 200 civilian casualties.
- This propelled the international community in 2008 to attempt a legally binding international instrument to curb the use of cluster munitions.
- The Convention was opened for signature in Oslo(Norway) on 3 December 2008 and entered into force on 1 August 2010.
- CCM has 112 state parties and 12 other signatories.
 - However, India was not a party to this Convention.
- It bans the use, production, stockpiling, and transfer of cluster munitions, and places obligations on countries to clear affected areas, assist victims, and destroy stockpiles.

How cluster bombs work

1. Munition is fired 2. Bomblets are 3. Bomblets fall to the ground – not all from the ground or air detonate immediately *** i*****

Ganga Water Treaty (GWT)

- A meeting of the technical teams of the **Joint Rivers Commission of India and Bangladesh** began in Kolkata on the Ganga Water Treaty (GWT), which is due for renewal in 2026.
- The GWT, also known as the Indo-Bangladesh Farakka Treaty, was signed in 1996 between India and Bangladesh for a 30-year term.
- It outlines the sharing of Ganga waters at the Farakka Barrage during the dry season (January 1 to May 31), dividing the flow into fifteen 10-day periods.
- The allocation is based on historical flow data from 1949 to 1988.
- If the flow is 70,000 cusecs or less, both countries receive **50%** each; for flows between 70,000 and 75,000 cusecs, Bangladesh gets **35,000 cusecs** and India receives the remainder; and for flows 75,000 cusecs or more, India gets 40,000 cusecs and Bangladesh receives the rest.
- **Rivers Commission** The **Joint** established in 1972, monitors compliance and addresses disputes, with members from India, Bangladesh, and West Bengal.

Hague Service Convention

The **U.S. Securities and Exchange Commission** (SEC) recently invoked the Hague Service Convention (HSC) of 1965 to serve summons on Indian billionaire Gautam Adani for a securities and wire fraud case.

- The HSC, officially known as the **Convention** on the Service Abroad of Judicial and Extrajudicial Documents in Civil **Commercial Matters**, is a multilateral treaty adopted on **November 15, 1965**, in The Hague, Netherlands.
- This multilateral treaty ensures defendants sued in foreign jurisdictions (in this case, Gautam Adani in India by a US court) receive timely and actual notice of legal proceedings while also facilitating proof of service.
- India, a signatory since 2006, processes such requests solely through its Ministry of Law and Justice, acting like a special delivery service for international court documents.
- The Indian government will check the request from the US and can refuse if they think it's a threat to India's rules.
- Upon approval, the Ministry of Law and Justice will deliver the papers to Adani as if an Indian court had asked, and this process typically takes six to eight months for completion and official confirmation back to the US,

Minimum Dietary Diversity (MDD) Indicator

- A new Minimum Dietary Diversity (MDD) indicator was adopted at the 56th UN Statistical Commission in New York to track progress towards SDG 2 (Zero Hunger).
- MDD focuses on the variety of consumed foods, crucial for health and well-being beyond just calorie intake.
- It monitors the intake of 10 food groups (plus other vegetables and fruits) over 24 hours in sample populations.
- Managed jointly by FAO and UNICEF, MDD is a binary indicator (yes/no) assessing if women and children of reproductive age consumed at least five of these food groups in the preceding 24 hours.
- This ensures a focus on nutritious food consumption for these key demographic groups.

Honorary Order of Freedom of Barbados

- Prime Minister Narendra Modi has been bestowed with the prestigious 'Honorary Order of Freedom of Barbados' award in recognition of his "strategic leadership" and "valuable assistance" during the Covid-19 pandemic.
- Barbados is an island country in the southeastern Caribbean Sea, situated about 160 km east of Saint Vincent and the Grenadines.
- Roughly triangular in shape, the island measures some 32 km from northwest to southeast and about 25 km from east to west at its widest point.
- The capital and largest town is Bridgetown, which is also the main seaport.
- Barbados was in the past heavily dependent on the export of sugar as its main revenue earner, but in recent decades the economy has diversified into tourism and finance.
- It is a former British colony which became independent in 1966, and a republic in 2021.



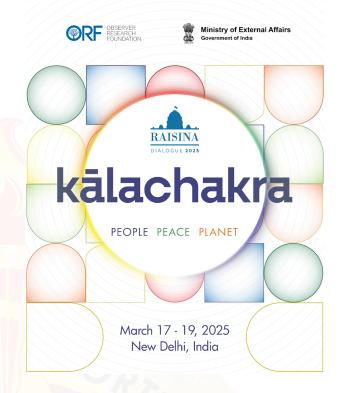
SMILE Programme

- The Strengthening Multimodal and Integrated Logistics Ecosystem (SMILE) Programme was recently launched.
 - 🕤 It is an initiative funded by **the Asian** 🌡 **Development Bank (ADB).**

- The SMILE program aims to establish and operationalize a comprehensive policy framework to enhance logistics efficiency through
 - strengthening the institutional bases for multimodal logistics infrastructure development at the National, State, and City levels;
 - standardizing warehousing and other logistics assets to strengthen supply chains and incentivize greater private sector investment;
 - improving efficiencies in external trade logistics; and
 - adopting smart systems for efficient and low-emission logistics.
- The program also aims to develop a **mechanism** for gender audit of land ports as part of the "gender inclusion in trade" mandate of the National Trade Facilitation Action Plan (2020-

The Raisina Dialogue

- The 10th edition of the Raisina Dialogue was held recently and the theme of the 2025 edition is "Kālachakra - People, Peace and Planet".
- The Raisina Dialogue is a multilateral conference held annually in New Delhi, since 2016.
- It is India's premier conference on geopolitics and geoeconomics committed to addressing the most challenging issues facing the global community.
- Every year, leaders in politics, business, media, and civil society converge to discuss the state of the world and explore opportunities for cooperation on a wide range of contemporary matters.
- The conference is hosted by the **Observer Research Foundation** in partnership with the Ministry of External Affairs.



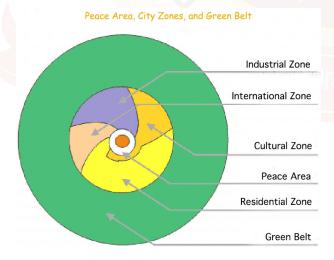
Trends in International Arms Transfers, 2024

- According to the **Stockholm International** Peace Research Institute (SIPRI), from 2020 to 2024, Ukraine became the world's largest importer of major arms, accounting for 8.8% of global imports.
- India ranked second with an 8.3% share, despite a 9.3% decline from the previous period, reflecting its push for domestic defense production.
- Russia remained India's top supplier, though its share decreased from 55% to 36%, while imports from France, Israel, and the U.S. increased.
- Notably, 28% of France's arms exports were to India, nearly double the combined share to all European countries.
- China was the fourth-largest exporter, with a 5.9% share of global arms exports during this period.
- SIPRI is an independent organization established in 1966 in Stockholm, Sweden, focusing on research related to conflict, armaments, arms control, and disarmament.

History & Culture

Auroville

- Auroville, an experimental township in Viluppuram district, mostly in the state of Tamil Nadu, India, with some parts in Puducherry, celebrated its 57th anniversary on February 28.
- Founded in 1968 by Mirra Alfassa, known as "the Mother," Auroville embodies Sri Aurobindo's vision of a universal town promoting human unity.
- In 1988, the Government of India enacted the Auroville Foundation Act, establishing a Governing Board of seven members appointed by the Central Government to oversee the township's development.
- The city's design resembles a spiral galaxy centered around the Matrimandir, symbolizing the community's spiritual aspiration
- Sri Aurobindo (1872–1950) was an Indian philosopher, yogi, poet, and nationalist. Educated in England at St. Paul's School, London, and King's College, Cambridge, he returned to India in 1893, becoming involved in the independence movement.
- Arrested in 1908 for sedition, he experienced spiritual realizations imprisonment, leading him to shift focus from politics to spirituality. Settling in Pondicherry, he developed Integral Yoga, aiming to integrate spiritual and material life. His major works include "The Life Divine," "Savitri," and "Essays on the Gita."



Banjara Community

- Lok Sabha Speaker addressed the Banjara community's celebration of their 286th birth anniversary of Sant Sewalal Maharaj in Delhi.
- The Banjara (Labana, Lambadi), a historically nomadic trading group likely from Rajasthan, have a **distinct "Gor" identity** and rich culture.
- While multilingual, "Banjara" is widely used (except "Banijagaru" in Karnataka) with a significant presence across central and southern India.
- Sant **Sewalal Maharaj** (born 1739 in Karnataka) was a key social reformer and spiritual leader who travelled India, using his knowledge to reform tribal communities.
- His revered Samadhi Sthal, "Banjara Kashi," is in Maharashtra.

Mudumal Menhirs

CUBOID ROCK MARKS URSA MAJOR

 India submitted dossier on Mudumal's standing stones to Unesco on Feb 11

 Menhirs theories range from marking celestial events to sacrificial sites



- Mudumal stands out for its precise
- This indicates advanced | Cuboid mathematical & alignment of menhir | astronomical knowledge
- rock signifies Ursa Major
- Mudumal Megalithic Menhirs Telangana's Narayanpet district, dating back 3,500-4,000 years, have been added to India's tentative list of UNESCO World Heritage Sites.
- This site, potentially South India's largest megalithic burial area, features around 80 tall menhirs (10-14 ft), nearly 3,000 alignment stones in rows, and circular stone formations across 80 acres.

Revered locally as 'Niluralla Thimmappa' with one worshipped as Goddess Yellamma, these stones demonstrate a connection to ancient funerary rites and, significantly, align with solar events like equinoxes and solstices, suggesting their use for calendrical calculations and astronomical observation.

Ursa Major, Latin for "Great Bear," is a prominent constellation in the northern sky and the third largest overall, covering over 3% of the night sky.

It is best known for containing the Big Dipper asterism, a group of seven bright stars forming a distinctive scoop-like shape.

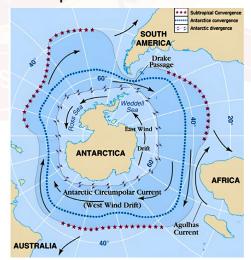
The Big Dipper has been used for navigation and timekeeping for centuries



Geography

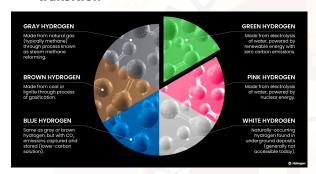
Antarctic Circumpolar Current

- A groundbreaking study has revealed that the Antarctic Circumpolar Current (ACC), the world's most powerful ocean current, is slowing down due to melting ice sheets.
- As the only ocean current connecting the Atlantic, Pacific, and Indian Oceans, the ACC is five times stronger than the Gulf Stream and over 100 times more powerful than the Amazon River.
- Beyond climate regulation, the ACC acts as a natural barrier, preventing non-native marine species from reaching Antarctica.
 - If it weakens, species like bull kelp, shrimp, and mollusks could invade, disrupting the delicate Antarctic food web and threatening native species such as penguins.
- The melting ice sheets dump vast quantities of fresh water into the salty ocean.
- This sudden change in ocean 'salinity' has a series of consequences - including the weakening of the sinking of surface ocean water to the deep (called the Antarctic Bottom Water), and, based on this study, a weakening of the strong ocean jet that surrounds Antarctica.
- A weaker current may also allow more warm water to penetrate southwards, exacerbating the melting of Antarctic ice shelves and contributing to global sea-level rise.
- Faster ice-melting could then lead to further weakening of the current, commencing a vicious spiral of current slowdown.



White Hydrogen

- French scientists have discovered a significant deposit of natural hydrogen, known as white hydrogen, approximately 1,250 meters underground in **Folschviller**, Lorraine's Moselle area.
- Initially searching for methane, researchers found hydrogen concentrations increasing with depth—14% at 1,100 meters and 20% at 1,250 meters—suggesting a substantial reservoir.
- White hydrogen is naturally occurring and does not require industrial processing, distinguishing it from green hydrogen, produced using renewable energy, and gray hydrogen, derived from fossil fuels.
- This discovery could **bolster France's economy** by creating thousands of jobs and positioning the nation as a leader in Europe's clean energy transition



Plastic Ice VII

- Scientists have experimentally confirmed the existence of Plastic Ice VII, a previously theorized phase of water that forms under extreme conditions.
- Unlike conventional ice, where water molecules are fixed in place, Plastic Ice VII features a rigid cubic lattice structure allowing the molecules to rotate freely while maintaining solidity.
- This phase emerges at pressures exceeding 3 gigapascals (about 30,000 times Earth's atmospheric pressure) and temperatures **above 450 Kelvin** (177°C).
- Researchers utilized quasi-elastic neutron **scattering (QENS)** to observe this phenomenon, revealing that water molecules in Plastic Ice VII exhibit rapid rotational motion akin to liquid water, despite being in a solid state.

- This discovery enhances our understanding of water's behavior under extreme conditions and has significant implications for planetary science, suggesting that such ice phases may exist in the interiors of icy moons and exoplanets.
- The designation "Ice VII" refers to a specific crystalline phase of ice identified in the sequence of ice polymorphs, each assigned a Roman numeral as they were discovered

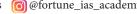
QENS:

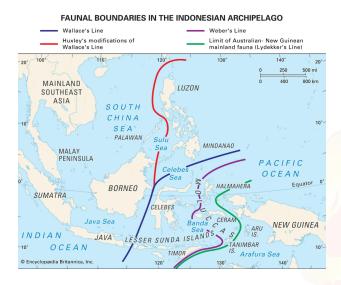
Quasielastic incoherent neutron scattering (QENS) is a key tool for the exploration of complex systems, such as liquids, polymers, glasses, and biomolecules.

The technique uses neutrons to study the dynamic processes of atoms and molecules in materials, particularly their motions and diffusion, by measuring the small changes in neutron energy during scattering events.

Wallace Line and Biodiversity

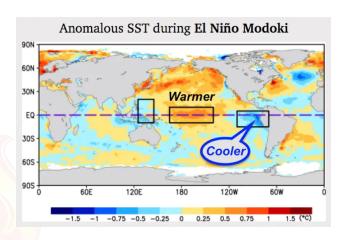
- Rising temperatures and habitat loss are potentially dissolving the Wallace Line, a biogeographical boundary identified by **Alfred** Russel Wallace in the 19th century.
- This invisible oceanic barrier, running between islands like Bali and Lombok and Borneo and Sulawesi, marks a sharp division between Asian and Australian fauna.
- Sulawesi is an exception, hosting species from both regions due to its geological history and continental drift theory.
- A 2023 study suggests that warmer, wetter conditions in Malay's tropical islands acted as stepping stones for Asian species moving towards Australia, while Australian species, adapted to cooler climates, faced difficulties crossing towards Asia.
- This **historical balance may now be disrupted** by climate change and habitat destruction, facilitating unprecedented species dispersal across the once distinct Wallace Line..





Dateline El Nino

- Tropical Pacific sea surface temperature (SST) patterns have shown an unexpected evolution since early 2024.
- Initial forecasts strongly suggested a La Niña developing in the latter half of the year, seemingly supported by early cold SST anomalies in the far eastern Pacific.
- However, these cold anomalies strangely shifted westward towards the international dateline, while warm anomalies appeared in the far east by early summer 2024.
- Unusual wind patterns accompanied this, with easterly anomalies in the central-western Pacific and westerly anomalies in the far east.
- This unusual configuration of **cold SSTs west** of warm SSTs persists, contrasting with the more common Dateline or Central Pacific El Niño pattern of recent decades.
- Dateline El Niño, also known as "El Niño Modoki", refers to climatic phenomena characterized by the warming of sea surface temperatures (SSTs) in the central Pacific Ocean, near the International Date Line.
- While La Niña typically has a consistent cold SST pattern in the eastern to central Pacific, El Niños exhibit "flavours" with warm SSTs in either the east or central Pacific.
- The underlying cause of this novel SST anomaly pattern remains unknown.



Earth's Oldest Meteorite Impact Crater

- The oldest meteorite impact crater on Earth was recently discovered in the Pilbara region of Western Australia.
- The crater formed more than 3.5 billion years ago, making it the oldest known by more than a billion years.
- The impact would have been phenomenal, creating a crater over 100km (62 miles) wide and sending debris spinning around the globe.
- The team identified the crater through distinctive rock formations known as "shatter cones".
 - Shatter Cones are distinctive "hut-like" rock formations, some several metres tall, which only form under the intense pressure of a meteorite strike.
- The energy from these impacts may have played a crucial role in forming Earth's **crust** and contributing to the development of continents.

OLDEST METEOR CRATER The ancient strike site was discovered in north-west

Australia - just where scientists predicted



Sagaing Fault

Myanmar sits on a tectonic fault line



- 1 The Indian plate collides with the Eurasian plate
- Friction builds up along the Sagaing fault
- The fault slips along a 200km section, which releases energy felt as an earthquake

Source: USGS, Advancing Earth and Space Sciences

ВВС

- The recent earthquake in Myanmar had its source in central Myanmar, about 20 km from Mandalay, the country's second-largest city.
- Mandalay, located on the east bank of the Irrawaddy river, is close to one of the most seismically active faults in the region, called the Sagaing fault, named after a town not far from Mandalay on the river's opposite side.
- The north-south running Sagaing fault forms the tectonic boundary between the Central Myanmar Lowlands and the Indo-Burman Range.
- An elongated micro-tectonic block that exists between the Indian plate and the Sagaing fault is commonly called the Burma plate or the **Burma Sliver.**
 - It owes its origin to the strain partitioning occurring at the subduction front.
- Unlike the vertical motions of fault blocks along the frontal part of the convergence zone, where one tectonic block is pushed up on the other, the movement is horizontal on the Sagaing fault, with the blocks sliding past each other.
 - The San Andreas fault in the western U.S. is another such example.
- Classified as a typical ridge-trench transform fault, the Sagaing fault system runs 1,400 km between the spreading centre under the Andaman Sea in the south to the eastern Himalayan bend in the north.

Note: Operation Brahma: India launched Operation Brahma to provide necessary support, including Search and Rescue (SAR), humanitarian aid, disaster relief and medical assistance, following the devastating earthquake that struck Myanmar.





Orans

- The Supreme Court had last year directed Rajasthan to map and classify "orans" (sacred groves) as forests.
- Orans are the sacred groves of Rajasthan that are deeply revered by local communities as 'forests'.
- Orans also known as 'malvan', 'deo ghat', and 'baugh', number around 25,000 and cover about six lakh hectares of the State.
- By augmenting tree and grass cover, orans trap surface runoff and support in-situ rainwater harvesting.
- According to the study, 41% livestock is dependent on Orans in Barmer district of Rajasthan.

T.N. Godavarman:

In T.N. Godavarman v. Union of India, the Supreme Court ordered that 'forest land' in Section 2 of the Forest (Conservation) Act, 1980, "will not only include 'forest' as understood in the dictionary sense, but also any area recorded as forest in the government record irrespective of the ownership of the land".

Sacred Groves of India:

India has the highest number of sacred groves in the world.

They are called 'devara kadu' in Karnataka, 'devban' in Himachal Pradesh, 'kavu' and 'sarpa kavu' in Kerala, 'sarna' in the Chota Nagpur Plateau region, 'devbani' in Chhattisgarh, 'jahera' or 'thakuramma' in Odisha, 'devgudi' by the Muria, the Madia, and the Gond adivasis of Maharashtra and Chhattisgarh, 'ki law lyngdoh', 'ki law kyntang' or 'ki law niam' in Meghalaya, 'sabarkantha', 'dahod' or 'banaskantha' in Gujarat, and so forth.

India's First Frozen Zoo

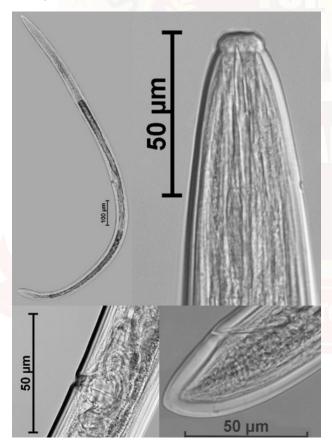
- Padmaja Naidu Himalayan Zoological Park in West Bengal's Darjeeling has become India's first zoo to preserve DNA samples of wildlife found exclusively in snowy regions.
- This is a **Cryogenic conservation initiative**, in collaboration with the Centre for Cellular and Molecular Biology, Hyderabad.
- As India's highest-altitude zoological park, it preserves the DNA of Himalayan wildlife in steel tanks filled with liquid nitrogen at temperatures plunging to -196°C.
- It aims to ensure that if these species face extinction, their preserved genetic material can aid in research and future conservation efforts.
- There are fewer than a dozen such facilities around the world, with the first frozen zoo being established in 1975 by Kurt Benirschke at the Institute for Conservation Research in San Diego.

Loss and Damage Fund

- The United States recently announced its intention to withdraw from the United Nations' fund to respond to loss and damage.
- "Loss and damage" refers to the adverse consequences brought about by climate change, and resulting in a range of impacts, such as loss of human lives, damage to **infrastructure** and buildings, loss of property and crops, as well as the deterioration of ecosystems.
- These impacts extend beyond the purely **economic realm** to encompass a broader spectrum of both economic and non-economic losses.
- While the fund was officially established at the 2022 United Nations Climate Change Conference in Egypt, known as COP27, it was operationalized this past year at COP29 in Azerbaijan.
- An executive director of the fund was appointed and initial financing agreements with the **World Bank** were finalized.
- United Nations Development Program (UNDP) serves as a member of the Technical Support Unit advising the UNFCCC with respect to the Fund.

Crassolabium Dhritiae

- Scientists from the Zoological Survey of India (ZSI), Kolkata, have announced the discovery of a species of soil-dwelling nematode in Odisha's Keonjhar district.
- The identified newly species, Crassolabiumdhritiae, is named in honour of Dr. Dhriti Banerjee, current director of ZSI, in recognition of her outstanding contributions to zoology and taxonomic research.
- A **nematode** is a roundworm belonging to the phylum Nematoda, an exceptionally diverse and abundant group found in nearly all habitats globally.
- Crassolabium dhritiae is characterised by its medium-sized, slender body, rounded lip region, wide odonto style, long pharynx, specific features in its female reproductive system, and a distinct tail shape.
- Crassolabium dhritiae brings the total number of known Crassolabium species worldwide to 39, with nine now recorded in India.
- These microscopic organisms are vital to soil health and play a crucial role in nutrient **cycling** and organic matter decomposition.



The Blue Flag Certification

- The Rushikonda Beach wins back the Blue Flag tag which was temporarily withdrawn after complaints of poor maintenance of amenities.
- Denmark-based Foundation for Environment Education (FEE) accredits the International eco-label "Blue Flag".
- Blue Flag certification, which attests to compliance in 50 countries with 33 criteria, strongly emphasizes water quality, waste management, awareness programs for sustainable tourism, and biodiversity protection measures.

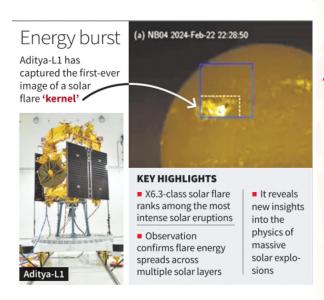


Mexico's Constitutional Reform on **Native Corn Protection**

- Mexico adopted a constitutional amendment banning domestic cultivation of "genetically modified" corn.
- This ruling deemed Mexico's restrictions on GM corn a violation of the U.S.-Mexico-Canada Agreement (USMCA), stating that it lacked sufficient scientific evidence and caused unfairly restricted U.S. market access.
 - US corn farmers export nearly \$5 billion worth of GM corn to Mexico annually, primarily for livestock feed.
- The phrase Sin maiz, no hay pais—"Without corn, there is no country" reflects its significance not only as a dietary staple but also as a national symbol.
- The crop originated in Mexico nearly 9,000 years ago when Mesoamerican farmers domesticated **teosinte**, a wild grass.

Science & Technology

Solar Ultraviolet Imaging Telescope (SUIT)



- The Solar Ultraviolet Imaging Telescope (SUIT) onboard the Aditya-L1, has captured an unprecedented view of a powerful solar flare 'kernel' in the lower solar atmosphere.
- SUIT is a unique space telescope developed by Pune's Inter-University Center for Astronomy and Astrophysics (IUCAA).
- The SUIT telescope will address fundamental questions such as the existence of a higher temperature atmosphere above the cooler surface of the Sun and the origin and variation of near-ultraviolet radiation and high-energy solar flares.
- Solar flare kernels are compact features located in the solar chromosphere that are the sites of rapid heating and plasma upflow during the rise phase of flares.
- It is an energy release site in the corona that leads to either a stream of non-thermal particles or a thermal conduction front being directed down the coronal loop legs toward the photosphere.
- Heating then occurs in the chromosphere leading to flare ribbons and brightenings, and hot plasma rises toward the flare site, giving bright post-flare loops.

Selenium

- Sudden hair loss ('acute onset alopecia totalis') in Maharashtra's Buldhana district is linked to excessively high selenium levels in wheat in local ration shops.
- Selenium is a trace mineral crucial for metabolism, DNA production, and protection against cell damage and infections (via selenoproteins)
- It has a Recommended Dietary Allowance (RDA) of 55 micrograms daily for adults, with a Tolerable Upper Intake Level (UL) of 400 micrograms daily.
- Selenium finds **industrial applications** in glass manufacturing for decolorizing and creating red/bronze hues, as a pigment in red enamels, ceramics, steelware, plastics, paints, dyes, and inks, in metallurgy to enhance machinability and casting.
- It is also used as an **additive** in rubber for improved resistance, in agriculture as a feed supplement and insecticide, and in other chemical processes as an oxidizing agent and catalyst.

Vikram & Kalpana

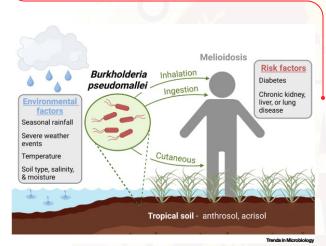
- The Indian Space Research Organisation (ISRO) recently announced the development of two advanced 32-bit microprocessors, Vikram 3201 and Kalpana 3201.
- Vikram 3201 is India's first fully indigenous 32-bit microprocessor qualified for use in the harsh conditions of launch vehicles.
- It is an advanced version of the 16-bit Vikram **1601 microprocessor,** which has been operational in Isro's launch vehicles since 2009.
- **Kalpana 3201** is also a 32-bit microprocessor designed to be compatible with open-source software toolsets and has been tested with flight software, making it versatile for various applications.



Supersolid Light

- Researchers have achieved a scientific first by transforming light into a "supersolid," a paradoxical state exhibiting both the rigidity of a crystal and the frictionless flow of a superfluid.
- Unlike typical supersolids made from **ultracold** atoms, this breakthrough utilized photons interacting with ridges on an aluminum gallium arsenide semiconductor
- They form quasiparticles called **polaritons** that self-organize into the supersolid state due to the physical constraints.
- This novel creation could enhance our understanding of supersolids and quantum phase transitions, potentially leading to future applications in quantum technologies like coolants and high-capacity batteries.

Melioidosis in Odisha

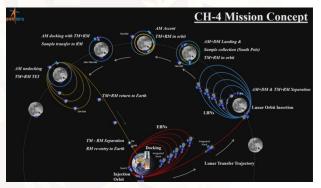


- A study in Odisha has shown a clear seasonality for melioidosis, a tropical bacterial disease caused by **Burkholderia pseudomallei** found in soil and water.
- Infections peak during and after the monsoon, highlighting the influence of rainfall, temperature, and humidity.
- Globally, South Asia, including India, accounts for a significant portion (44%) of the estimated 1,65,000 annual melioidosis cases.
- The disease presents with diverse symptoms, from minor skin infections to severe pneumonia and potentially fatal sepsis (up to 50% mortality in septicaemic cases).

- **Humans and animals can contract it** through contact with contaminated soil or water, often through skin abrasions, inhalation, or ingestion.
- Treatment requires lengthy antibiotic courses and currently there is no widely available vaccine for melioidosis.

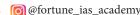
De-docking Mission

- ISRO successfully completed the de-docking of the Space Docking Experiment (SpaDeX) satellites, SDX-01 (Chaser) and SDX-02 (Target), launched on PSLV-C60 on December 30, 2024.
- This **precise separation in space**, achieved on March 13, 2025, followed their successful docking on January 16, 2025.
- De-docking is the process of carefully separating two spacecraft that have previously been connected (docked) in the microgravity environment of space.
- Key steps included extending SDX-2 and releasing capture levers, culminating in a flawless separation via de-capture commands.
- This achievement positions India as the fourth nation globally to demonstrate space docking technology.



Viral Meningitis

- Five students in Kalamassery, Ernakulam, Kerala, are receiving medical treatment for suspected viral meningitis.
- Meningitis is the inflammation of the **protective membranes** (meninges) covering the brain and spinal cord, caused by viral, bacterial, or fungal infections.



- Viral meningitis, generally less severe than bacterial, typically resolves without complications with symptoms like fever, headache, nausea, vomiting, and photophobia, requiring close observation, pain relief, fluids, and nutritional support.
- Most cases clear up within one to two weeks, often caused by enteroviruses that spread from the mouth or respiratory tract to the meninges.
- In contrast, bacterial meningitis is a medical **emergency** needing immediate diagnosis and antibiotic treatment to prevent severe complications or death.

Blue Ghost Mission

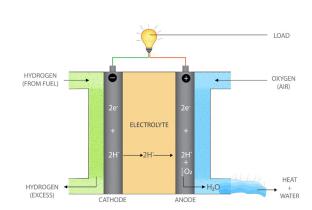
- The US private agency Firefly Aerospace's Blue Ghost lunar lander, carrying NASA scientific instruments, successfully landed on the Moon's Mare Crisium region.
- This marks the first successful private lunar landing without crashing.
- Mare Crisium is located on the northeastern edge of the Moon's near side.
- This achievement places Firefly alongside only five national space agencies (Russia, US, China, India, and Japan) that have accomplished soft lunar landings.
- Launched on a SpaceX Falcon 9 on January 15, 2025, the Blue Ghost carries 10 NASA payloads under the Commercial Lunar Payload Services (CLPS) program to study lunar heat flow and plume-surface interactions, aiming to improve our understanding of the Moon's interior and landing techniques.



Proton Exchange Membrane Fuel Cell

- The Centre for Fuel Cell Technology (CFCT) at ARCI, an autonomous institute under the Department of Science and Technology, has developed a fuel cell-based uninterrupted **power suppl**y for telecom towers.
- Utilizing PEM (Proton Exchange Membrane) **Fuel Cell**s, this clean energy solution offers reliable backup power during grid outages, featuring quick start-up and low-temperature operation as a viable alternative to diesel generators.
- PEMFCs generate electricity with only water vapor as a byproduct, providing an environmentally friendly, high power density, and compact solution that runs on storable hydrogen fuel and requires less maintenance than traditional backups.
- Their operation involves an electrochemical reaction where hydrogen is oxidized at the anode, protons travel through a membrane, and react with oxygen at the cathode to produce electricity and water..

FUEL CELL



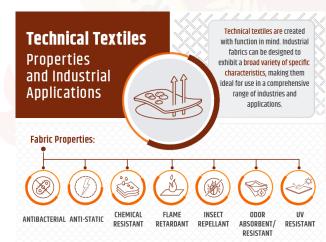
Bollgard-3

- Ahead of Punjab's cotton sowing season, there's high demand for the unapproved Bollgard-3, a Monsanto-developed Bt cotton variety.
- Bollgard-3 cotton variety has 3 Bacillus thuringiensis (Bt) proteins Cry1Ac, Cry2Ab, and Vip3A for improved pest resistance against whiteflies and pink bollworms, which have severely impacted yields and reduced cotton cultivation in the region.
- **Bacillus thuringiensis (Bt)** is a soil-dwelling bacterium with potent insecticidal properties.

- While **Bollgard-1 and -2 are ineffective** against these pests that arrived in Punjab in 2015-16 and 2018-19, respectively.
- The Cotton Association of India highlights Brazil's success with Bollgard-5, achieving significantly higher yields (2400 kg/hectare vs. India's 450 kg/hectare) due to its protection against multiple pests and weeds.

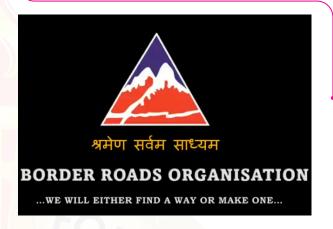
Technical Textiles

- Recently the 5 Years of National Technical Textiles Mission was celebrated.
- National Technical Textiles Mission (NTTM) launched in 2020 by the Ministry of Textiles to boost technical textiles in India.
- NTTM has 4 key components:
 - Research, Innovation and Development, Promotion and Market Development, Export Promotion & Education, Training, and Skill Development.
- **Technical textiles** are fabrics made for specific functions and performance, rather than for looks.
 - These textiles are designed to meet the needs of various industries like cars, construction, farming, healthcare, and safety.
- India is the 6th largest exporter of textiles globally, with a 3.9% share in world textile exports.
 - It contributes nearly 2% to the country's GDP.





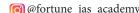
Border Roads Organisation



- Fifty workers were rescued after an avalanche **struck** a Border Roads Organisation (BRO) camp in high-altitude Mana village, Chamoli district, Uttarakhand.
- Formed in 1960 to secure India's borders and develop infrastructure in remote northern and northeastern states, the BRO develops and maintains road networks in India's border regions and neighboring countries like Afghanistan, Bhutan, Myanmar, Tajikistan, and Sri Lanka, operating across 19 states and three union territories.
- BRO was brought entirely under the **Ministry** of Defence in 2015 (previously funded by the Ministry of Surface Transport) and has its motto "Shramena Sarvam Sadhyam,"
- It is part of the Indian Armed Forces' Order of Battle, providing critical support during emergencies and military operations.

'No Money for Terror' Conference

- The 4th No Money for Terror (NMFT) Ministerial Conference was recently hosted by Germany.
- The Financial Action Task Force (FATF) is participating for the first time in this Security Conference held in Munich.
- Participants discussed and reaffirmed their commitment to the Conference's four key themes:



- Multilateral Cooperation, Digital Channels of Terrorist Financing, Financial Inclusion and Risk-Based-Approach, and Organized Crime and Terrorism Financing.
- The inaugural edition of this conference was held in Paris, France, in 2018.
- The second edition of the NMFT took place in Melbourne, Australia, in 2019 and third in India (2022).

Exercise

Exercise	Participants	Place	Details
Desert Hunt	India	Tri-Services	The exercise held in Jodhpur involved elite Para (Special Forces) from the Indian Army, the Marine Commandos from the Indian Navy along with the Garud (Special Forces) from the Indian Air Force
Bongosagar	India-Bangladesh	Navy	It was held at the Bay of Bengal.
Maritime Security Belt	Iran-Russia-China	Navy	Held at the Gulf of Oman and marks the fifth year of military drills together.
Khanjar-XII	India-Kyrgyzstan	Special Forces Exercise	The 12th edition took place in Kyrgyzstan
INIOCHOS	Multilateral Ex (United States, France, Italy, Israel, Saudi Arabia, and, more recently, India.)	Air Force	It is hosted annually by Greece's Hellenic Air Force (HAF).
INDRA	India-Russia	Navy	This is the 14th edition of the exercise
AIKEYME	India-10 African Nations (Comoros, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Sri Lanka, South Africa & Tanzania)	Navy	AIKEYME stands for Africa India Key Maritime Engagement. 'AIKEYME', which means 'Unity' in Sanskrit, is being co-hosted by the Indian Navy and Tanzania Peoples' Defence Force (TPDF) and conducted at/off Dar-es-Salaam, Tanzania. This is the First Edition.
Sea Dragon	Multilateral Multination ea Dragon (Australia, India, Japan, Korea, and the U.S.) warfare (AS)		It is hosted by the United States Navy's 7th Fleet. Held at Andersen Air Force Base, Guam, in the Southwest Pacific.
Varuna	India-France	Navy	The 23rd edition was held at Visakhapatnam.
Tropex	ropex India Navy		Theatre Level Operational Exercise (TROPEX) is an operational level exercise is conducted biennially with participation by all operational Indian Naval units along with substantial participation of Indian Army, Indian Air Force and Coast Guard assets.

Miscellaneous

Khelo India Winter Games

- The 2nd phase of 5th Khelo India Winter Games 2025 commenced at popular ski resort, Gulmarg in North Kashmir.
- The 2nd Phase features four disciplines, including alpine skiing, Nordic skiing, ski mountaineering, and snowboarding.
- Under the Khelo India Scheme, the Ministry of Youth Affairs & Sports (MYAS) organizes National-level competitions.
 - This includes: Khelo India Youth Games, Khelo India University Games, Khelo India Para Games and Khelo India Winter Games.
- Starting in 2020, so far four editions of the Khelo India Winter Games have been successfully conducted with the participation of 36 States/ UTs.
- The fifth edition of Khelo India Winter Games 2025 is being staged in two parts.
 - The first phase was held in the UT of Ladakh.
 - J&K is hosting the second and final portion in March.
- Apart from tapping talent, Khelo India Winter Games also showcase a region's art, culture, heritage, and promote tourism through sports.

'Scam Se Bacho' Campaign

- The **Department of Telecommunications** (DoT) and WhatsApp have launched the 'Scam Se Bacho' campaign to educate citizens on fraud identification and reporting.
- It seeks to enhance digital safety through workshops and proactive measures against telecom misuse.
- A key element involves train-the-trainer workshops for DoT officials, Sanchar Mitras, (student volunteers) and Telecom Service Providers (TSPs).
- The **Sanchar Mitra program** aims to improve mobile security awareness, clarify radiation myths, promote DoT initiatives, and prevent mobile-related fraud, creating a link between the DoT and citizens on telecom issues.

Glass-Ceiling Index

- In honor of International Women's Day, The Economist released its annual glass-ceiling index which analyzes working conditions for women across the 29 countries in the Organization for Economic Co-operation and Development (OECD).
- The countries were ranked based on ten measures: Higher education, GMAT exams taken by women, Labor-force participation rate, Gender wage gap, Women in managerial positions, Women on company boards, Women in government, Net child-care costs, Paid leave for mothers, & Paid leave for fathers.
- Political Front: The OECD observed an average increase in women's parliamentary representation to 34%.
 - Japan and Britain recorded significant gains, with representation rising to 16% (up from 10%) and 41% (up from 35%), respectively.
 - In contrast, the United States experienced a slight decline, with representation falling to 28.7%.
- **Economic Front:** There is a rise in the percentage of women on corporate boards, reaching 33%.
 - Also there is an increase in women's labour-force participation, which grew to 66.6%, up from 65.8% the previous year.
 - However, it remains lower compared to men at 81%.

The "glass ceiling" is a metaphor describing the invisible barriers that prevent women and minorities from advancing to higher-level positions within organizations, regardless of their qualifications or achievements.

These barriers are often the result of implicit biases, stereotypes, and organizational cultures that favor certain groups over others.

The Organisation for Economic Co-operation and Development (OECD) is an international organization founded in 1961 to promote policies that improve the economic and social well-being of people worldwide.

It provides a platform for its 38 member countries to collaborate, share experiences, and develop solutions to common challenges.

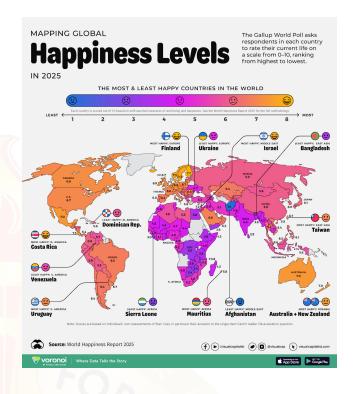


The World Happiness Report 2025

- The recently released World Happiness Report 2025 has placed India at 118 out of 147 countries.
- World Happiness Report 2025 is published by the Wellbeing Research Centre at the University of Oxford.
- The country rankings are based on a threeyear average of each population's average assessment of their quality of life.
- The report also considers the following six variables:
- GDP per capita, Social Support, Healthy life expectancy, Freedom, Generosity & Freedom of corruption.

Key Findings:

- Finland leads the world in happiness for the eighth year in a row.
 - The country reported an average score of 7.736 (out of 10).
- Upward trend seen in countries such as Lithuania (16th), Slovenia (19th) and Czechia (20th).
- The United States (24th) falls to its lowestever position
- The United Kingdom (23rd) reported its lowest average life evaluation since the 2017 report.
- India ranks 118th out of 147 countries, with a happiness score of 4.389.
 - This places it below its neighbors Nepal, Bangladesh, and China.
 - The drop is linked to growing mental health concerns, exacerbated by the challenges of the COVID-19 pandemic and increasing economic pressures.







Places in News

Reunion Island



- At least four people died after cyclone Garance struck the French overseas territory of La Reunion, bringing wind speeds of up to 155 kph (96 mph).
- It is an island in the western Indian Ocean and is located about 680 kilometers east of Madagascar & 180 km southwest of Mauritius.
- It was a French colony until 1946, when it became a French overseas department.
- It is volcanic in origin, and its landform is dominated by volcanic cones, craters, and high plateaus.
 - Frequent tropical cyclones result in abundant annual rainfall.
- The economy is **largely based on sugar**, which makes up about three fourths of Réunion's total export.
- French is the official language, but Creole is the language in common use.

Amrabad Tiger Reserve (ATR)

- Rescue operations were underway to trace the eight missing personnel inside the Srisailam Left Bank Canal (SLBC) tunnel in Nagarkurnool which falls under the Amrabad Tiger Reserve forest area.
- The ATR was notified as a sanctuary in 1983 and was declared an **official Tiger Reserve** in 2014 following the bifurcation of the Telugu States.
- The Reserve which is part of the Nallamala Forest track falls under the national conservation initiative 'Project Tiger.'

- This is the second-largest Tiger Reserve in terms of core area but the sixth-largest tiger reserve in terms of total area among 51 Tiger Reserves in India.
- The reserve was established on the lands of the Chenchu Indigenous People.



Kanger Valley National Park (KVNP)



- The Kanger Valley National Park (KVNP) has been included in UNESCO's Tentative List of World Heritage Sites under the Natural Heritage category.
- The KVNP is located in Jagdalpur within the Bastar District of Chhattisgarh.
- The park draws its name from the Kanger River, meandering from the northwest to the southeast.
- Designated in 1982 under the Wildlife (Protection) Act of 1972, the national park encompasses an area of 200 square kilometres.

The Chagos Archipelago

- Ahead of Prime Minister Narendra Modi's visit to Mauritius, India affirmed its support for the island country's claim over the Chagos archipelago.
- Chagos has long been the subject of a **dispute** between Mauritius and the UK, which held on to these islands for decades after granting independence to Mauritius in 1968.
- It was only last year that **London officially** recognised Mauritius' sovereign rights over all of Chagos, although it retained control over Diego Garcia.

- Diego Garcia is the largest island in the archipelago and home to a strategically important joint UK-US military base.
- The Chagos archipelago comprises more than 60 low-lying islands in the Indian Ocean roughly 1,600 km to the northeast of the main island of Mauritius.
- Chagos has a land area of only 56.1 sq km, with Diego Garcia alone spread over 32.5 sq km which is about the same as the land area of Lakshadweep.
- The Great Chagos Bank, spread over 12,642 sq km, is the world's largest atoll structure.
- The Islands closest inhabited neighbour Addu, the southernmost Maldivian atoll, lies 500 km away.



Torkham Border Crossing

- The Pakistani and Afghan security forces traded fire at the recently closed main border crossing between the two countries, the Torkham border crossing.
- Torkham borders Pakistan's Khyber Pakhtunkhwa province and Afghanistan's Nangarhar province.
- It is along the Durand Line, the **2,640-kilometer** (1,640-mile) international border between Afghanistan and Pakistan.
- It was established in 1893 through an agreement between Sir Mortimer Durand, a British diplomat of British India, and Abdur Rahman Khan, the then Emir of Afghanistan.
- However, it controversially cut through the **Pashtun tribal areas,** dividing ethnic Pashtuns and Baloch people who have historically lived on both sides.

While Pakistan recognizes the Durand Line as its official border, Afghanistan has never officially accepted it as a legitimate international boundary, viewing it as a colonialera imposition that divided their people.



Okjökull Glacier

- Satellite images spanning over three decades document the disappearance of Iceland's Okjökull, the first glacier officially declared **dead** due to human-caused climate change.
 - "Okjökull" means "Ok glacier" in Icelandic, and it was a dome-shaped glacier atop the 3,940-foot-tall **shield volcano Ok**, northwest of Reykjavík.
- Once covering 39 sq km in 1901, **Okjökull was** declared dead in 2014 when its ice thinned too much to move by gravity.
- In 2023, Iceland also established the world's first iceberg graveyard, creating symbolic headstones for 15 major glaciers, including Okjökull, listed as dead or critically endangered by the UN.





Species in News

Olive Ridley Turtle

- A 16-year-long assessment of trends in turtle populations in India says the numbers of the Olive Ridley (Lepidochelys olivacea) species suggest a "steady or growing" population.
- The species is among the smallest of the world's sea turtles and is found primarily in the tropical regions of the Pacific, Indian, and Atlantic oceans.
- Sea turtles are long-lived, late-maturing, and highly migratory species.
- A striking natural phenomenon is the 'arribada' or mass nesting of the Olive Ridley turtle, when tens or hundreds of thousands of female turtles come ashore to nest simultaneously.
- Gahirmatha and Rushikulya in Odisha are two of the largest 'rookeries' or nesting grounds worldwide, with other similar sized ones found only in Mexico and Costa Rica.



Narwhals



- Scientists have, for the first time, studied and filmed Arctic narwhals using their distinctive tusks (elongated upper left canine teeth) for hunting.
- These elusive "whales with one tooth and one horn" prefer areas with dense pack ice, using cracks to breathe.
- While known for "tusking" behavior, potentially for social signaling, recent footage also documented interactions with fish and birds, including attempted **kleptoparasitism**.
- Tusking behavior in narwhals refers to instances where two or more of these whales simultaneously raise their tusks almost vertically out of the water and cross them.
- **Kleptoparasitism** is a feeding strategy where one animal obtains food by stealing it from another animal.
 - In the context of the narwhal study, it refers to instances where glaucous gulls attempted to steal Arctic char that the narwhals had captured near the water's surface.
- The IUCN lists narwhals as Least Concern globally but Vulnerable in Europe.

Civet

A rare civet cat, typically found in the Seshachalam **forests** near Tirumala, was spotted near Tadepalli Guntur



district, Andhra Pradesh.

- Civets are long-bodied, short-legged carnivores of the family Viverridae.
- Civets are found in Africa, southern Europe, and
- Civets are usually solitary and live in tree hollows, and among rocks, coming out to forage at night.
- India is home to eight species of civets, some of which are widely distributed across the country, while others are confined to more specific, limited areas.
 - Binturong (Arctictis binturong Vulnerable), Large Indian Civet (Viverra zibetha - Least Concern) & Malabar Civet (Viverra civettina - Critically Endangered) are few examples.

Gum Arabic

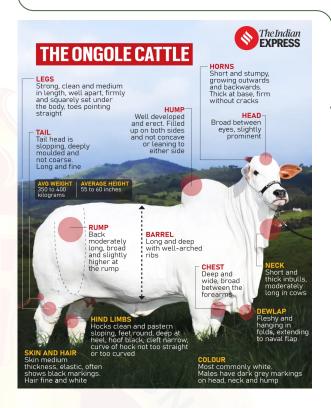
Gum arabic, a vital ingredient used in everything from Coca-Cola to M&M's sweets, is increasingly being trafficked from rebel-



held areas of war-torn Sudan, which accounts for around 80% of the world's gum arabic supply.

- Gum arabic acts as an organic emulsifier in consumer goods around the world.
- The primary source of gum arabic is the hardened sap exuded from the trunks and branches of various species of the Acacia tree, particularly Senegalia senegal (formerly Acacia senegal) and Vachellia seyal.
- It grows across Africa, from Senegal to Kenya, but the millions of acacia trees that grow in a sandy 2,00,000 square mile belt across southern Sudan is the heart of production.
- However, since the civil war erupted in April 2023, the paramilitary Rapid Support Forces (RSF) have taken control of major gumharvesting regions in Kordofan and Darfur from the Sudanese Armed Forces (SAF).

Viatina-19



- As per the Guinness World Record, the cow, Viatina-19, was sold for Rs 40 crore at an auction in Minas Gerais, Brazil in 2023.
- Viatina-19 belongs to the Nelore breed, also known as the Ongole breed, which was first brought to Brazil in the 1800s.
- Reports suggest that this muscular breed originated from the Prakasam district of Andhra Pradesh.
- It was first introduced by the **Aryans** around 2,000 years before the Christian era.
- The Nelore breed, which makes up the **majority** of Brazil's cattle stock, is primarily raised for meat.

Conocarpus Trees

- Telangana is taking steps to remove **Conocarpus** trees planted in large numbers on the main thoroughfares and highways.
- Conocarpus trees are an evergreen plant species with dark green shiny leaves.
- They are not palatable for wild herbivores or domestic animals.
- Known for its **fast growth** and evergreen foliage, Conocarpus has been a popular choice

in greening initiatives along roadsides, in road medians, and public gardens.

- During the flowering season, the tree releases large amounts of pollen, which can spread across surrounding areas, affecting people living and working nearby.
- Numerous cases of pollen-related illnesses have been reported in Tamil Nadu.
- Also, the plant is a water-guzzler and can affect the water tables.



The African penguin

- African penguins (Spheniscus demersus), found along the coasts of Namibia and South Africa, have been reclassified by the IUCN as critically endangered from endangered.
- This is due to a staggering 97% population decline, indicating a severe risk of extinction without immediate intervention.
- These small, flightless birds are recognizable by their black and white feathers, distinctive chest stripe, and pink skin around their eyes.
- Their unique pattern of **black spots** on their chest and belly, similar to human fingerprints, allow for individual identification.
- The patches of bare, pink skin above their eves become more intensely pink when the bird is hot, aiding in thermoregulation.
- They are also known as "jackass penguins" due to their loud, braying calls that sound like a donkey.



Dog-Faced Water Snake:

The dog-faced water snake (Cerberus rynchops) is a mildly venomous, semi-aquatic species typically



found in coastal brackish waters.

- They have been recorded for the **first time in** northeast India, with five individuals spotted in the floodplains of Assam's Nalbari district.
- This is approximately 800 km inland from its known habitat along the Indian coast and nearby Bangladesh.
- This sit-and-wait predator of fish and crustaceans has been documented along various Indian coastal regions but rarely inland, making this a significant and unexpected finding.
- It is classified as "Least Concern" by the IUCN Red List.

Caracal

Rajasthan has announced the first photographic evidence of a Caracal (Caracal caracal) in Mukundra Hills Tiger Reserve.



The caracal, a mediumsized wild cat with distinctive black-tufted

ears—its name derived from the Turkish 'karakulak' meaning 'black ears'—is primarily nocturnal and known for its agility in hunting birds mid-flight.

- Also known as Desert lynx or Persian lynx, it is native to Africa, the Middle East, Central Asia, and arid areas of Pakistan and northwestern India.
- Historically, caracals were used in hunting during medieval India, as referenced in texts like Khamsa-e-Nizami and Shahnameh.
- Once widespread across 13 Indian states, their population has declined by over 95% from 2001 to 2020.
- IUCN red list classification: Least Concern



- Alawites: They are a minority ethnoreligious group primarily residing in Syria, with beliefs originating from **Shia Islam** but incorporating distinct syncretic elements. Historically marginalized, they gained political prominence with the Assad family's rule in Syria from 1971 until 2024.
- **<u>Light Fishing:</u>** It is a **nighttime technique** using **artificial lights** to attract fish and squid, making them easier to catch, but it raises ecological concerns like overfishing and bycatch. While India banned it in its EEZ, enforcement challenges persist.
- Predatory Pricing: a controversial and often illegal business strategy where a dominant company sets the price of its products or services very low, often below their cost of production, with the primary intention of driving out competitors from the market or preventing new ones from entering.
- Bond Central: SEBI, in collaboration with the Online Bond Platform Providers Association (OBPP Association), has launched "Bond Central," a free, centralized database portal for corporate bonds in India, aiming to provide investors with a single, authentic source of comprehensive information.
- Reinsurance: It is a contract where an insurance company transfers a portion of its risk to another insurance company (the reinsurer) to reduce its potential losses from large claims by sharing risks. IRDAI nod for first private reinsurance firm. Currently, public sector General Insurance Corporation (GIC Re) is the only reinsurance company operating in India.
- **DNA fingerprinting:** also known as **DNA profiling,** is a laboratory technique used to determine the probable identity of a person based on the nucleotide sequences of certain regions of human DNA that are unique to individuals. This method analyzes specific DNA sequences, primarily short tandem repeats (STRs), which are highly variable regions of non-coding DNA
- 75/25 Initiative: Launched in 2023 by Union Ministry of Health, it aims to provide standardized care to 75 million **hypertension and diabetes** patients by December 2025
- Al Kosha: A secure platform launched by Ministry of Electronics and Information Technology (MeitY) with datasets, models, use cases, and a sandbox for AI innovation, alongside the IndiaAl Compute Portal for GPU access, both being key components of the IndiaAl Mission's India Datasets Platform pillar.
- Official Language of USA: A presidential executive order has made English the first official language of the USA. This rescinds a policy from 2000 that required federal agencies to provide language assistance to non-English speakers.
- **Hantavirus:** They are **rodent-borne viruses** that can cause severe respiratory illness (Hantavirus Pulmonary Syndrome (HPS) in the Americas) or kidney-related disease (Hemorrhagic Fever with Renal Syndrome (HFRS) in Europe and Asia) in humans through inhalation or contact with rodent waste.



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