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SEPTEMBER

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Particularly Vulnerable Tribal Groups

The Ministry of Tribal Affairs requested the Registrar General and Census Commissioner of India (RGI) to consider enumerating particularly vulnerable tribal groups (PVTGs) separately in the upcoming Census.

About Particularly Vulnerable Tribal Groups

- PVTGs are a sub-category of Scheduled Tribes (STs) and are more vulnerable among the tribal groups in India.
- The criteria for identifying Particularly Vulnerable Tribal Groups are:
- A declining or stagnant population,
- Geographical isolation,
- Use of pre-agrarian practices (such as hunting and gathering),
- Economic backwardness and relatively low literacy
- This category was created based on the recommendations of the Dhebar Commission (1960-61) — led by former Member of Parliament U N Dhebar.
- At present there are 75 tribal groups considered as PVTGs and they are currently spread across 18 states, and the Union Territory of Andaman and Nicobar Islands.
- As per the recent survey, there were an estimated 47.5 lakh PVTGs across India. Madhya Pradesh had the highest estimated population of PVTGs, followed by Maharashtra with an estimated population of 6.7 lakh, and Andhra Pradesh.
- Livelihoods: PVTGs depend on various livelihoods such as food gathering, Non Timber Forest Produce (NTFP), hunting, livestock rearing, shifting cultivation and artisan works.
- Welfare scheme for PVTGs
- PM JANMAN scheme: Under this the government rolled out the Rs 24,104 crore with an aim to improve the socio-economic status, health, education, livelihoods and amenities for PVTGs in more than 200 districts.

Sample Registration Survey Statistical Report

The Sample Registration System (SRS) Statistical Report 2023 reveals that seniors make up 9.7 per cent of the population, up from 8.6 per cent in 2011.

About Sample Registration Survey Statistical Report

- It is carried out by the Office of the Registrar General & Census Commissioner, India (ORGI).
- It provides the fertility and mortality indicators, also includes data on crude birth rate, crude death rate and infant mortality rates.

Key Highlights of the Sample Registration Survey Statistical Report

- Total Fertility Rate: India's Total Fertility Rate (TFR) has fallen for the first time in two years to 1.9 in 2023
- It pointed out that 18 States and UTs had reported a TFR of below the replacement level TFR of 2.1.
- Crude Birth Rate: India's Crude Birth Rate (CBR) has declined 0.7-point from 19.1 in 2022 to 18.4 in 2023. (Highest CBR was in Bihar at 25.8, and the lowest was in Tamil Nadu at 12).
- Ageing population: 9.7 per cent of India's people are now aged 60 or above, a sharp increase in just over a decade. (Kerala leads the list. Almost 15 per cent of its population is above 60 years of age)
- Sex ratio at birth: It is noted that the sex ratio at birth (SRB) in the country stood at 917, denoting that 917 girls are born for every 1,000 boys in the population.

National Institutional Ranking Framework

Recently, the union Minister of Education released the National Institutional Ranking Framework (NIRF) 2025.

About National Institutional Ranking Framework

- It was started by the Union Ministry of Human Resource Development (now Ministry of Education) in 2015.
- This framework outlines a methodology to rank institutions across the country
- Parameters of National Institutional Ranking Framework
- Teaching, learning and resources;
- Research and professional practice;
- Graduation outcomes;
- Outreach and inclusivity; and peer perception.

Key Highlights of National Institutional Ranking Framework 2025

- This year's rankings have been released across 17 categories – overall, SDGs institutes, universities, colleges, research institutions, engineering, management, pharmacy, medical, dental, law, architecture and planning, agriculture and allied sectors, open universities, skill universities, and state public universities.
- Indian Institute of Technology Madras retains its 1st position in Overall Category for the seventh consecutive year.
- Indian Institute of Science, Bengaluru tops the Universities Category for tenth consecutive.
- IIM Ahmedabad tops in Management subject retaining its first position for sixth consecutive year.
- All India Institute of Medical Sciences (AIIMS), New Delhi occupies the top slot in Medical for the eighth consecutive year
- IIT Roorkee retained its 1st position in Architecture and Planning for the fifth consecutive year.
- National Law School of India University, Bengaluru retains its first position in Law.
- Jamia Hamdard, New Delhi tops the ranking in Pharmacy for the second consecutive year.

Doctrine of Contributory Negligence

The Andhra Pradesh High Court recently held that the doctrine of contributory negligence does not apply to criminal actions, and a driver who commits an accident by driving rashly and negligently, which leads to the death of a person, is liable under Section 304A of IPC, even if there has been a degree of negligence on part of the victim.

About Doctrine of Contributory Negligence

- It operates on the principle that individuals have a duty to exercise reasonable care for their own safety and well-being.
- When someone fails to meet this duty and their actions or omissions contribute to their own injury or damages, they may be considered partially at fault for the harm suffered.
- Contributory negligence occurs when the plaintiff, through their own lack of care, contributes to the damage resulting from the defendant's negligence or wrongful conduct.
- The concept of Contributory negligence is based on the principles of “Volenti non-fit injuria”.
- The maxim means that the injury has suffered voluntarily and the defendant is not fully liable.
- It serves as a defence wherein the defendant must demonstrate that the plaintiff's failure to exercise reasonable care for their safety played a role in the harm suffered.
- For instance, if A, while travelling on the wrong side of the road, is struck by a vehicle driven recklessly by B coming from the opposite direction, A may be met with the defence of contributory negligence.
- The application of contributory negligence principles allows courts to assess the relative fault of each party and determine the appropriate allocation of liability and damages in such cases.
- But if both the plaintiff and the defendant take due care and all the measures to avoid the accident or the injury, then the plaintiff cannot sue the defendant for that.
- The Burden of Proof: The burden of proof is on the defendant to prove that the plaintiff is equally liable for the act and the plaintiff was not careful, due to which he suffered injuries.
- The defence of contributory negligence is not available when it is proved that the defendant has the duty to take full care and he is legally bound to take full care and diligence. So, if any injury is caused to the plaintiff, then the defendant will be held liable.
- For example- A and B were travelling in a bus, and A, in order to show something to B, pointed his hand outside the window, and the window suddenly got open, and A was injured. Although it was A’s duty to not take out his hands from the window, the staff and the crew were liable, as it was their duty to check all the windows and the doors.
- While India does not have a specific statute codifying contributory negligence, courts often consider principles of fairness and equity in determining liability and apportioning damages.
- In India, the concept of comparative negligence is applied, where damages are allocated based on the comparative fault of each party involved and judges exercise discretion based on the facts and circumstances of each case.

Doctrine of Escheat

The Supreme Court recently held that a State Government cannot invoke the doctrine of escheat under Section 29 of the Hindu Succession Act once a Hindu male has executed a Will, which has been declared to be valid and has been granted probate by a Court.

About Doctrine of Escheat

- It is a significant legal concept that ensures no property is left without ownership, reverting it to the state if the original owner dies without legal heirs or fails to make a will.
- This legal process addresses the handling of unclaimed assets, protecting societal interests and maintaining order within the legal framework.
- The doctrine addresses two primary situations:
- when a person dies intestate (without a will) and without heirs, and
- when property remains unclaimed or abandoned for a specific period.
- The underlying principle of escheat is that property must always have an identifiable owner, and in the absence of heirs, the government assumes ownership.
- In modern legal systems, escheat serves as a way to maintain orderly succession and prevent assets from being wasted or misused.

Historical Origins of Escheat

- Escheat originates from the Old French word “eschete,” meaning “to fall to”.
- The concept of escheat is rooted in the feudal system of medieval Europe, where land was held by tenants under a lord.
- If the tenant died without an heir or was convicted of certain crimes like treason, the land would escheat, or revert, to the lord.
- This system allowed for continuous control of land, ensuring that property remained within the hierarchy of the feudal structure.
- Over time, this evolved to include the monarch or the state as the ultimate recipient of property without heirs.

Escheat in Modern Legal Systems

- In modern legal systems, escheat ensures that unclaimed or ownerless property does not remain in limbo but is transferred to the state.
- The state assumes ownership of such property, either permanently or temporarily, until rightful claimants can be found.
- Escheat laws vary across jurisdictions, with some countries having well-defined processes for handling unclaimed assets.
- In India, escheat is regulated primarily through Section 29 of the Hindu Succession Act, 1956, and Article 296 of the Constitution.
- These provisions outline the circumstances under which property escheats to the state, safeguarding against unclaimed or abandoned property.
- However, the Supreme Court made it clear that the doctrine of escheat under Section 29 of the Hindu Succession Act, 1956, is a remedy of last resort; it comes into play only when a person dies intestate and without any legal heirs.
- Where a valid will is executed and duly probated, the property must devolve strictly in line with the testator’s intent, leaving no room for the State to assert rights over the estate.

Draft Civil Drone 2025

The Ministry of Civil Aviation recently made public the Draft Civil Drone (Promotion and Regulation) Bill, 2025, and invited feedback from stakeholders and citizens.

About Draft Civil Drone (Promotion and Regulation Bill) 2025

- Released by the Ministry of Civil Aviation, the Draft Civil Drone (Promotion and Regulation Bill) 2025 proposed provisions such as mandatory registration, safety and security features, as well as insurance, amongst other requirements for unmanned aircraft systems' (UASs) operations in the country.
- The law covers individuals and entities engaged in drone ownership, operation, design, manufacture, import, export, leasing, training or maintenance, but excludes unmanned aircraft used by the armed forces or those weighing over 500 kilograms, which will be governed under the Bharatiya Vayuyan Adhiniyam, 2024.
- **DGCA Retained as Regulator:**
- It retains the Directorate General of Civil Aviation (DGCA) as the primary regulatory authority.
- The draft mandates that no drone will be allowed to operate without registration and issuance of a Unique Identification Number (UIN) by the DGCA.
- Similarly, manufacturers would be required to obtain a type certification from DGCA before their drones can be sold or operated in India.
- **Safety, Security Features Compulsory:**
- No person shall manufacture or assemble, offer for sale, transfer or cause to transfer, operate or cause to operate any UAS that does not incorporate the mandatory safety and security features as prescribed by the central government or unless the UAS is exempted from such requirement.
- These features are intended to ensure airworthiness, prevent tampering, and enable traceability of drone operations.
- **Compulsory Insurance for Operators:**
- Notably, provision for insurance has been made compulsory, with third-party coverage required for all operators unless specifically exempted by the government.
- The insurance company shall, upon receiving information of the accident, either from the claimant or through an accident information report or otherwise, designate an officer to settle the claims relating to such accident.
- **Digital Sky Zones Retained:**
- Draft retains the concept of a 'Digital Sky' online platform of zoning that will segregate skies into green, yellow, and red zones.
- While operations in green zones will be freely permitted, flying in yellow zones will require clearance from air traffic control.
- No person shall operate an UAS in a red zone without prior permission from the central government and the red zone creating agencies.
- Violations in restricted airspace have been classified as cognisable and non-compoundable offences, attracting up to three years' imprisonment or fines extending to ₹1 lakh.
- Compensation for Victims Proposed: The owner of the UAS or the authorised insurer shall be liable to pay, in the case of death or grievous hurt due to any accident arising out of the use of unmanned aircraft system, a compensation of a sum of 2.5 lakh rupees in case of death or one lakh rupees in case of grievous hurt to the legal heirs or the victim, as the case may be.
- Claim Tribunals to Handle Drone Cases: The 'Motor Accident Claim Tribunals' has been proposed to be designated as the claim tribunal for the purpose of adjudicating upon claims for compensation in respect of accidents involving the use of UASs.
- **Punishment:**
- Any person who contravenes the provisions of this Act shall be punishable with a fine up to ₹50,000 or an imprisonment which may extend to three months or both, and for any second or subsequent offence with a fine up to ₹1 lakh or an imprisonment which may extend to six months or both.
- Any offence involving carriage of dangerous goods by a civil UAS, or use of a civil UAS as a weapon, shall be cognizable and non-compoundable.
- The Director General or any other officer authorised in this behalf may seize and confiscate the UAS, documents, records, devices or things which may be useful for, or relevant to, the investigation of such offence.

Registered Unrecognised Political Party

The Election Commission of India (ECI) recently de-listed a total of 474 more Registered Unrecognised Political Parties (RUPP) for flouting norms, including not contesting elections in the last six years.

About Registered Unrecognised Political Parties

- These are the parties which are either newly registered parties or those which have not secured enough percentage of votes in the assembly or general elections to become a state party, or those which have never contested elections since being registered.
- Despite not having official recognition, RUPPs enjoy certain benefits:
- Tax exemption under Section 13A of the Income Tax Act, 1961.
- Eligibility for common poll symbols during elections. Common symbols are provided to RUPPs based upon an undertaking that they would put up "at least 5% of total candidates with regard to said Legislative Assembly election of a State".
- Permission to nominate up to 20 'star campaigners' for canvassing.
- They are, however, required to:
- Contest elections periodically.
- File annual audit accounts and contribution reports.
- Disclose donations exceeding Rs. 20,000, and ensure that no donations above Rs. 2,000 are accepted in cash.

What are Registered Parties?

- Political parties in the country are registered with the ECI under the provisions of Section 29A of the Representation of the People Act (RPA) 1951.
- There are many benefits of registering a party.
- Firstly, the RPA allows political parties to accept contributions voluntarily offered to it by any person or company other than a government company.
- Apart from this, candidates of registered parties get preference in allotment of election symbols. Other candidates are identified as independents and do not get preference in symbol allocation.
- Tax exemption for donations received under Section 13A of the Income Tax Act, 1961.
- Guidelines for registration of Political Parties mention that if the party does not contest elections continuously for 6 years, the party shall be taken off the list of registered parties.
- Registered political parties, in course of time, can get recognition as a state party or national party subject to the fulfilment of the conditions prescribed by the EC in the Election Symbols (Reservation and Allotment) Order, 1968, as amended from time to time.
- Recognised political parties get to reserve a symbol and use it exclusively, whereas unrecognised parties have to choose from a list of free symbols.
- Recognition also comes with other benefits, such as free broadcast facilities over Doordarshan and All India Radio, more allowances for campaign expenditure, and free copies of electoral rolls before elections.

Conditions for Recognition as a State Party

- A political party shall be treated as a recognised political party in a state if it fulfils any of the following conditions
- The party has to win 3 percent of seats in the Legislative Assembly of the state in the General Election.
- The party has to win one Lok sabha seat for every 25 Lok Sabha seats allotted for the state in the General Election.
- The party has to secure a minimum of 6 percent of votes in a state, and in addition it has won one Lok Sabha or two Legislative Assembly seats in elections.
- The party has to secure 8 percent of votes in a state in the General Election to Lok Sabha or Legislative Assembly.

Conditions for Recognition as a National Party

- A political party shall be treated as a national party if it fulfils any of the following conditions
- Secure at least 6 percent of votes polled in four or more states in the Lok Sabha or Assembly elections, and, in addition, it has at least four members in the Lok Sabha.
- It also has to have at least 2 percent of the total Lok Sabha seats and its candidates come from not less than three states.
- It is recognised as a state party in at least four states.
- Both national and state parties have to fulfil these conditions for all subsequent Lok Sabha or state elections. Else, they lose their status.

Strategic Lawsuits Against Public Participation

Over a year before a civil court imposed an ex-parte injunction on journalists from publishing or circulating allegedly unverified and defamatory material against Adani Enterprises, the Supreme Court had been worried about courts recognising 'SLAPP' suits across jurisdictions.

About Strategic Lawsuits Against Public Participation

- SLAPPs are meritless suits solely used to drag the opposing party through protracted litigation to dry up their resources.
- These lawsuits are typically filed by influential and wealthy individuals or businesses against people who criticise them, conduct investigations, communicate, or express opinions on matters of public interest.
- SLAPPs often target journalists and the media, as well as NGOs, academics, researchers, writers, artists, and human rights defenders-in general people who engage in public discourse and demand accountability.
- SLAPPs shut down critical speech by intimidating critics and draining their resources, undermining their active public engagement.
- Moreover, one core characteristic of this kind of action is the disparity of power and resources between the plaintiff and the defendant.
- Often based upon ambiguous and elastic law provisions, SLAPPs use several strategies to exhaust resources and morale, generally including exorbitant claims for damages and allegations designed to smear, harass and overwhelm activists and/or civil society organisations.
- Many nations (the USA, Canada, UK, and others) have enacted anti-SLAPP laws granting early dismissal of frivolous suits and fee-shifting to protect public participation.
- India has no such statute, so courts must rely on existing civil procedure rules and constitutional guarantees.
- The Supreme Court of India warns against 'SLAPP' suits, emphasizes the protection of journalistic expression in defamation cases.

Sixth Schedule

Recently, Ladakh witnessed one of its worst episodes of violence in decades over demands for statehood and inclusion under the Sixth Schedule.

About the Sixth Schedule

- The Sixth Schedule of the Indian Constitution is a special provision that deals with the administration of tribal areas in the Northeast.
- It was framed on the recommendations of the Bordoloi Committee (Sub-Committee of the Constituent Assembly on the North-East Frontier (Assam) Tribal and Excluded Areas).
- The framers recognised the distinct cultural identity and vulnerability of the tribal population in these areas and thus provided for a system of autonomous governance.
- It came into effect along with the Constitution in 1950, under Articles 244(2) and 275(1).
- Unlike the Fifth Schedule, which applies to other tribal areas of India, the Sixth Schedule provides greater autonomy through elected Autonomous Councils with legislative, judicial, and financial powers.
- These provisions are unique to the four Northeastern states of Assam, Meghalaya, Tripura, and Mizoram.

Provisions under the Sixth Schedule

- Article 244(2): Applies Sixth Schedule provisions to tribal areas of Assam, Meghalaya, Tripura, and Mizoram.
- Autonomous Districts & Regions: Tribal areas are administered as Autonomous Districts, which may be subdivided into Autonomous Regions by the Governor.
- Governor's Powers: Can reorganise districts, alter boundaries, and rename autonomous areas.
- District & Regional Councils: Each Autonomous District has a District Council (up to 30 members, 4 nominated by the Governor, others elected by adult suffrage).
- Regional Councils created for distinct tribal groups.
- Law-making Powers: Councils can legislate on land, forests (except reserved forests), inheritance, customary laws, and money-lending/trading by outsiders.
- All such laws require the Governor's assent.
- Administration of Justice: Councils can establish Village and District Council Courts for disputes where both parties are tribals.
- Jurisdiction excludes serious crimes (punishable with death or imprisonment for over 5 years).
- Revenue & Resource Control: Councils can levy taxes, collect land revenue, and regulate mineral extraction.
- Local Administration: Councils manage primary schools, dispensaries, markets, roads, fisheries, transport, and waterways.
- Parliament/State Laws: Apply only with exceptions or modifications in these areas.
- Governor's Commission: Can review and report on the administration of autonomous regions.

Goods and Services Tax Appellate Tribunal

Recently, the Union Minister for Finance and Corporate Affairs formally launched the Goods and Services Tax Appellate Tribunal (GSTAT) in New Delhi.

About Goods and Services Tax Appellate Tribunal

- It is a statutory appellate body established under the Central Goods and Services Tax Act, 2017 (CGST Act).
- It hears various appeals under the said Act and the respective State/UT GST Acts.
- The Tribunal will function through a Principal Bench in New Delhi and 31 State Benches across 45 locations in India.

Composition of Goods and Services Tax Appellate Tribunal

- It consists of the President (Head), a Judicial Member, and 2 Technical Members (one from the state and another from the Centre).
- The state bench consists of two Judicial Members, a Technical Member (Centre) and a Technical Member (state).

Eligibility of members of Goods and Services Tax Appellate Tribunal

- The president must be a Supreme Court judge or have served the High Court as the Chief Justice.
- The Judicial member must be a High Court Judge or has served as an Additional District Judge or a District Judge for a period of 10 years.
- The Technical Member (Centre) must be an Indian Revenue Service member belonging to Group A or must be a member of All India Service with three years of experience in administering GST in the Central Government.
- Also, the Technical Member from the Centre should have completed twenty-five years in Group A services.
- The Technical Member (state) must be a state government officer or All India Service officer with the rank above Additional Commissioner of Value Added Tax; also, the rank should be above the First Appellate Authority.
- The Technical Member from the state must have completed twenty-five years in Group A Services or equivalent and three years administering GST or finance and taxation in the State Government.
- Age limit and Tenure: The president and judicial and technical members of GSTAT shall hold office for four years, or until he attains the age of 70 years and 67 years.
- It is equivalent to a Civil Court for trying a case. It can pass orders, hear cases, impose penalties, and revoke or cancel registrations.

Central Board of Film Certification

Recently, multiple films faced heavy censorship by the CBFC over caste, mythology, and political references.

About the Central Board of Film Certification (CBFC)

- The Central Board of Film Certification (CBFC) is a statutory body under the Ministry of Information and Broadcasting, Government of India.
- Commonly known as the Censor Board, though it functions mainly as a certification authority.
- It works under:
- Cinematograph Act, 1952
- Cinematograph (Certification) Rules, 1983
- Guidelines issued by the Central Government

Role and Structure of CBFC

- It regulates the public exhibition of films in India. No film can be released publicly without CBFC certification.
- Headed by a Chairperson, with 12–25 members appointed by the Central Government.
- It operates through nine regional offices: Mumbai, Kolkata, Chennai, Bangalore, Thiruvananthapuram, Hyderabad, New Delhi, Cuttack, and Guwahati.
- Supported by Advisory Panels (nominated by the Government for two-year terms) to assist in film examination.

Categories of Certification

- U (Universal): Suitable for all age groups.
- U/A: Universal with parental guidance (below 12).
- A: Adults only.
- S: Restricted to special classes (e.g., doctors, farmers).
- New Sub-Categories (2023 Amendment): UA 7+, UA 13+, UA 16+ – aligning with global best practices.

Preponderance of Probability

The judgment on the title battle over the 1,500 square yards in the town of Ayodhya is founded on the "test of preponderance of probabilities" over who had possession of the outer and inner courtyards of the disputed premises, according to former Chief Justice of India D.Y. Chandrachud.

About Preponderance of Probability

- It is a widely accepted standard of proof in civil proceedings.
- The preponderance of probability refers to the greater likelihood of one event or fact over another.
- In this context, a fact is considered proven when the evidence suggests that the occurrence of the fact is more likely than not.
- It is not about certainty or eliminating all doubts but rather about weighing evidence to see which side presents a more probable scenario.
- In civil cases, the party bearing the burden of proof needs to show that their version of events is more plausible than the opposing party's.
- This standard contrasts sharply with the criminal law standard of "beyond a reasonable doubt," where the prosecution must prove the defendant's guilt to a much higher level of certainty.
- In civil cases, by contrast, the balance of probabilities leans toward the more convincing narrative.
- In Narayan Ganesh Dastane v. Sucheta Narayan Dastane (1975), the Supreme Court of India stated that under Section 3 of the Indian Evidence Act, a fact is said to be proved when the court believes in its existence based on a "preponderance of probability."
- The court applies this test by evaluating conflicting probabilities and choosing the most probable scenario.

Application of Preponderance of Probability in Civil Law

- The preponderance of probability is the standard of proof used in most civil litigation.
- Civil cases typically involve disputes over rights, contracts, property, or torts, and the plaintiff must demonstrate that their claim is more likely true than false.
- For example, in a breach of contract case, the plaintiff must show that it is more likely than not that the contract was breached.

Securities Appellate Tribunal

US-based trading firm Jane Street Group recently filed an appeal in the Securities Appellate Tribunal (SAT) against the Securities and Exchange Board of India (Sebi) in the alleged market manipulation case.

About Securities Appellate Tribunal

- The SAT is a statutory body established under the Securities and Exchange Board of India Act, 1992.
- As a quasi-judicial body, SAT's primary objective is to hear and dispose of appeals against orders passed by SEBI or by an adjudicating officer under the Act.
- It has jurisdiction over the whole of India and operates from Mumbai.
- The SAT also hears appeals against the following orders:
- Orders issued by the Insurance Regulatory and Development Authority of India (IRDAI) in relation to cases filed before it.
- Orders issued by the Pension Fund Regulatory and Development Authority (PFRDA) in relation to cases filed before it.
- Who can make an appeal?
- These appeals may be filed by any person aggrieved by SEBI's decisions, including market participants, listed companies, intermediaries, or investors.

Securities Appellate Tribunal Composition

- The SAT consists of one Presiding Officer and such a number of judicial and technical members as the Central Government may determine.
- The person so appointed as the presiding Officer should meet the following requirements:
- The retired or sitting judge of the Supreme Court
- Chief Justice of the High Court
- Judge of the High Court, who has completed at least seven years of service as a judge in a high court.
- Judicial Member: Judge of the High Court for at least five years of service.
- Technical Member:
- Secretary or an Additional Secretary in the Ministry or Department of the Central Government or any equivalent post in the Central Government or a State Government; or
- Person of proven ability, integrity, and standing, having special knowledge and professional experience of not less than 15 years in the financial sector, including the securities market, pension funds, commodity derivatives, or insurance.
- The Presiding Officer and Judicial Members shall be appointed by the Central Government in consultation with the Chief Justice of India or its nominee.

Securities Appellate Tribunal Tenure

- The tenure for the Presiding Officer and other members will be five years from the date of appointment, and they shall be eligible for re-appointment for another term of maximum five years.
- However, no presiding officer or member shall hold office after he/she has attained the age of 70.

Securities Appellate Tribunal Powers

- SAT exercises the powers of a civil court and has the authority to summon and enforce the attendance of witnesses, receive evidence, and examine witnesses under oath.
- It also has the power to require the discovery and production of documents.

Appeal against the Orders of the Securities Appellate Tribunal

- Every person aggrieved by any order or decision of SAT can file an appeal to the supreme court.
- An appeal can only be made on any question of law.

All India Debt and Investment Survey & Situation Assessment Survey

The All India Debt and Investment Survey (AIDIS) and the Situation Assessment Survey (SAS) of Agricultural Households are scheduled to be conducted from July 2026 to June 2027.

About All India Debt and Investment Survey (AIDIS)

- The AIDIS is one of India's most significant surveys on household finance.
- Previous AIDIS Surveys
- Its origins go back to the All India Rural Credit Survey (1951-52), later expanded to cover both debt and investment in 1961-62.
- Since then, the NSO has conducted AIDIS roughly once every decade, most recently in the 77th Round (2019) at the request of the Reserve Bank of India (RBI).
- The survey provides critical data on household indebtedness and asset ownership across both rural and urban areas.
- Significance of the Survey: Its findings are instrumental in shaping national accounts, assessing inequality in asset distribution, understanding credit markets, and informing policies of the RBI, MoSPI, and other government institutions.
- It is conducted by the National Statistics Office (NSO), under the Ministry of Statistics and Programme Implementation (MoSPI).

About Situation Assessment Survey (SAS) of Agricultural Households

- The SAS of Agricultural Households, first launched in 2003.
- It is designed to assess the economic conditions of farming communities.
- It was expanded in 2013 to cover all agricultural households and further strengthened in the 2019 round.
- It now provides comprehensive insights into the livelihoods of agricultural households.
- The survey covers Household income and expenditure, Indebtedness and access to credit, Land and livestock ownership, Crop and livestock production, and use of technology and Access to government schemes and crop insurance. Farming practices
- Significance of Survey: The Ministry of Agriculture and Farmers Welfare, NITI Aayog, researchers, and financial institutions utilise the survey findings to shape policies and programmes aimed at agriculture and rural development.

Perpetual Bonds

Indian Renewable Energy Development Agency Ltd (IREDA) recently said it has raised ₹453 crore at 7.70% per annum through its second issue of Perpetual Bonds, a step that strengthens its capital base for financing green energy projects.

About Perpetual Bonds

- It is a fixed-income security that has no maturity date and theoretically pays interest forever.
- The perpetual bond means the issuer is under no obligation to redeem the principal amount at any point.
- Also known as "perps" or "consol bonds," these instruments represent a permanent source of capital for the issuer.
- It represents one of the purest forms of debt that closely resembles equity in certain aspects.
- With these bonds, investors do not receive the principal amount back unless the issuer opts to call the bond.
- This action involves returning the principal and discontinuing interest payments to bondholders.
- This call feature provides issuers with the flexibility to refinance if market conditions become favourable.
- Most modern perpetual bonds include call provisions that allow issuers to redeem them after a specified period, typically 5 to 10 years from issuance.
- To compensate for the indefinite tenure and higher risk, perpetual bonds generally offer higher interest rates.
- If the issuer goes bankrupt, perpetual bondholders get paid after other creditors but before shareholders, placing them in a middle priority tier.
- Perpetual bonds are highly sensitive to changes in interest rates, which can cause significant fluctuations in their market price.
- In India, banks are the primary entities that issue perpetual bonds to meet their capital requirements.
- Even though perpetual bonds do not provide principal repayment to investors, they can be an attractive investment option for individuals aiming to generate a stable income for a long period of time.
- From an accounting perspective, perpetual bonds often receive equity-like treatment on balance sheets, making them attractive for organisations looking to strengthen their capital structure without diluting existing shareholders' ownership.

Certificate of Deposit (CD)

Issuance of certificates of deposit (CDs) by banks has fallen sharply in the last few months, pushing mutual funds to explore alternative money market instruments such as treasury bills and commercial papers to park funds.

About Certificate of Deposit

- It is a fixed-income financial tool that is governed by the Reserve Bank of India (RBI) and is issued in a dematerialized form.
- It is a type of agreement made between the depositors and the banks, wherein the bank pays an interest on your investment.
- It is a short-term investment that comes with fixed investment amounts and maturity tenure ranging between 1-3 years.

Features of Certificate of Deposit

- A CD in India can be issued for a minimum deposit of Rs. 1 lakh or in subsequent multiples of it.
- Eligibility Criteria:
- CDs are issued by the Scheduled Commercial Banks (SCBs) and All-India Financial Institutions.
- The Cooperative Banks and the Regional Rural Banks (RRBs) are not eligible for issuing a CD.
- It is issued to individuals, corporations, companies, and funds, among others.
- CDs could also be issued to NRIs but on a non-repatriable basis only.
- Maturity Period:
- The maturity period of a CD can range between 7 days and 1 year when issued by commercial banks.
- However, for other financial institutions, the maturity period ranges from 1 year to 3 years.
- CDs are offered at discount rates or floating rates, depending on the banks' requirements.
- Interest Rates: A CD offers a higher interest rate than savings accounts or some other fixed-term financial products.
- CDs in dematerialised form can be transferred through endorsement or delivery, similar to dematerialised securities. This feature enhances the liquidity and ease of transactions for CDs.
- Unlike some other financial instruments, there is no lock-in period for a CD. This flexibility allows investors to access their funds or reinvest after the agreed-upon term without restrictions.
- Since CDs do not have any lock-in period, CDs cannot be used as collateral, and banks can't buy back their own CDs before maturity.
- Banks have to maintain the statutory liquidity ratio and cash reserve ratio on the price of a CD.
- A CD is fully taxable under the Income Tax Act.
- A CD cannot be publicly traded.

Pink Tax

While there are no specific laws in India to address the issue of Pink Tax, the National Consumer Disputes Redressal Commission ruled that companies must follow fair pricing policies and avoid gender-based price discrimination.

About Pink Tax

- The Pink tax is neither a real tax nor is it a government-imposed fee.
- It is a term used to describe the extra cost that some companies charge for products marketed to women compared to similar products marketed to men.
- This means women might end up spending more money for the same product that men get for less.
- When companies charge more for pink (female) products compared to blue (male) versions, the extra revenue does not go to the government but benefits the companies themselves.
- Pink toys, haircuts, dry cleaning, razors, shampoos, body lotions, deodorants, facial care, skincare items, beauty care, clothing, T-shirts, jeans, salon services ,etc. suffer the tax.
- The term “Pink Tax” is believed to have originated in the U.S. in California in 1994.
- It emerged following the realisation that brands in various cities consistently charged women higher prices for goods and services than men.
- As per a study done in the U.S., personal care products targeting women were 13% costlier than men’s. Further, women’s accessories and adult clothing were 7% and 8% more expensive.

Pink Tax in India

- The "pink tax" is not prohibited by law in India, and there are no set government regulations on this pricing practice.
- Female-targeted goods and services prices are determined based on market dynamics and demand.
- While there is limited research on the pink tax in India, surveys indicate price variations between products for women and men.
- While there are no specific laws in India to address the issue of Pink Tax, the National Consumer Disputes Redressal Commission ruled that companies must follow fair pricing policies and avoid gender-based price discrimination.

Foreign Contribution Regulation Act

Recently, the Union Home Ministry revoked the FCRA licence of the Students Educational and Cultural Movement of Ladakh (SECMOL), founded by climate activist Sonam Wangchuk.

About the Foreign Contribution Regulation Act (FCRA)

- The Foreign Contribution (Regulation) Act (FCRA) was originally enacted in 1976 during the Emergency to prevent foreign influence on India's internal affairs through financial contributions.
- The FCRA, 2010, currently in force, regulates the acceptance and utilisation of foreign funds by individuals, associations, and companies in India.
- Its primary objective is to ensure that foreign donations do not compromise national sovereignty, integrity, or internal security, and are used only for legitimate developmental purposes.

Amendments to FCRA

FCRA (Amendment), 2010

- Consolidated the 1976 law.
- Expanded coverage to associations, NGOs, and companies.
- Strengthened the regulatory framework.

FCRA (Amendment), 2020 Key Changes

- Ban on Transfers: Prohibits NGOs from transferring foreign contributions to other NGOs or individuals.
- Mandatory Aadhaar: All office bearers must provide Aadhaar/passport/OCI details for registration.
- FCRA Account: All contributions must be received only in the designated SBI branch, New Delhi.
- Reduced Administrative Expenses: Limit cut from 50% to 20% of foreign funds.
- Renewal of Licence: Renewal contingent on government scrutiny for fictitious entities or misuse.
- Suspension Extension: Suspension of registration can last up to 360 days.
- Surrender Provision: Organisations can voluntarily surrender their FCRA licence, subject to approval.
- Bar on Public Servants: Public servants are prohibited from receiving foreign contributions.

FCRA Rules (Amendment), 2022

- Increased the annual limit for foreign remittances from relatives abroad from ₹1 lakh to ₹10 lakh without prior intimation.
- Simplified compliance for smaller transactions but reinforced safeguards against foreign funds that may threaten national interests.

Categories under FCRA

- Prohibited Recipients: Candidates for elections, journalists, media houses, judges, government servants, members of legislatures, political parties, and organisations of political nature.
- Permitted Use: NGOs, educational, cultural, economic, and social associations, provided they comply with regulations.
- Validity: Registration valid for 5 years, renewable upon application at least 6 months before expiry.

Coffee Board of India

Recently, the Coffee Board of India held capacity-building programmes to increase the number of growers registering on its mobile application for EU Deforestation Regulation compliance.

About Coffee Board of India

- It is a statutory organization constituted under Section (4) of the Coffee Act, 1942.
- Members: The Board comprises 33 members representing all sectors of the coffee industry who are nominated by the central government and hold office for a period of three years.
- The remaining 32 Members representing various interests are appointed as per provisions under Section 4(2) of the Coffee Act read with Rule 3 of the Coffee Rules, 1955.
- Functions: The Board is mainly focusing its activities in the areas of research, extension, development, market intelligence, external & internal promotion and welfare measures.
- Nodal Ministry: It functions under the administrative control of the Ministry of Commerce and Industry, Government of India.
- Head office: The head office of the Coffee Board is situated in Bangalore.

Key Facts about Coffee cultivation

- It is a tropical plant generally grown under shady trees.
- It is grown on hill slopes at elevations from 600 to 1,600 metres above sea level.
- The vast majority of the world's coffee comprises two species — Coffea Arabica (Arabica) and Coffea Canephora (Robusta).
- Distribution: In India coffee is largely cultivated in Karnataka, Kerala, Tamil Nadu, Andhra Pradesh and Odisha, among which, Karnataka produces the most with over 70% of the total output.
- Required climatic conditions for Coffee cultivation
- Climate: Hot and humid climate for its growth.
- Temperatures: Between 15°C and 28 °C
- Rainfall: 150 to 250 cm.
- Soil: Well-drained, loamy soil containing a good deal of humus and minerals like iron and calcium are ideal for coffee cultivation.
- Dry weather is necessary at the time of ripening of the berries.

Financial Intelligence Unit-India

Recently, the Department of Telecommunications (DoT) and the Financial Intelligence Unit-India (FIU-IND) signed a comprehensive Memorandum of Understanding (MoU) to enhance data sharing and inter-agency coordination.

About Financial Intelligence Unit-India

- It was set by the Government of India in 2004.
- It is the central national agency responsible for receiving, processing, analyzing and disseminating information relating to suspect financial transactions.
- FIU-IND is an independent body reporting directly to the Economic Intelligence Council (EIC) headed by the Finance Minister.

Function of Financial Intelligence Unit-India

- Collection of Information: It acts as the central reception point for receiving Cash Transaction reports (CTRs), Non-Profit Organisation Transaction Report(NTRs), Cross Border Wire Transfer Reports (CBWTRs), Reports on Purchase or Sale of Immovable Property (IPRs) and Suspicious Transaction Reports (STRs) from various reporting entities.
- Analysis of Information: Analyze received information in order to uncover patterns of transactions suggesting suspicion of money laundering and related crimes.
- Sharing of Information: It shares information with national intelligence/law enforcement agencies, national regulatory authorities and foreign Financial Intelligence Units.
- Central Repository: It establishes and maintains a national database on the basis of reports received from reporting entities.
- Coordination: It coordinates and strengthens collection and sharing of financial intelligence through an effective national, regional and global network to combat money laundering and related crimes.
- Research and Analysis: Monitor and identify strategic key areas on money laundering trends, typologies and developments.

Corporate Average Fuel Efficiency Norms

India has proposed to significantly revamp its key vehicle emissions rules, called the Corporate average fuel efficiency (CAFE) norms, and has introduced a draft of the third iteration of the key standards.

About Corporate Average Fuel Efficiency (CAFE) Norms

- Corporate Average Fuel Efficiency (CAFE) norms are government-mandated standards that require auto manufacturers to meet a fleet-wide average fuel economy target.
- These are introduced by the Bureau of Energy Efficiency (BEE) in 2017, aim to regulate fuel consumption and CO_2 emissions from passenger vehicles under 3,500 kg.
- In India, CAFE norms were introduced in two phases, with the first stage effective from 2017-18 and the second from 2022-23.
- These norms apply to vehicles powered by petrol, diesel, LPG, CNG, hybrids, and electric power.
- Objective: CAFE norms were designed to: Reduce oil imports, Cut air pollution, Promote cleaner vehicles like EVs, CNG cars, and hybrids.

Key Facts about Bureau of Energy Efficiency

- It was established in 2002 under the provisions of the Energy Conservation Act, 2001.
- Objective: The primary objective of BEE is to reduce energy intensity in the Indian economy.
- Function and Duties
- It coordinates with designated consumers, designated agencies and other organizations; recognizes, identifies and utilizes the existing resources and infrastructure, in performing the functions assigned to it under the Energy Conservation Act.

Oju Hydel Project

An expert panel of the Union Environment Ministry recently recommended environmental clearance for the 2,220 MW Oju hydroelectric project proposed on the Subansiri River in Taksing near the China border.

About Oju Hydel Project

- It is a hydroelectric project proposed on the Subansiri River (right-bank tributary of the Brahmaputra) in Taksing, Arunachal Pradesh, near the China border.
- The project, to be developed by Oju Subansiri Hydro Power Corporation Pvt. Ltd., envisages generating 2,220 megawatts of electricity through a run-of-the-river scheme with daily peaking capability.
- It involves a 100-metre-high concrete gravity dam, a 14.12 km headrace tunnel, and an underground powerhouse complex.
- With an estimated cost of over Rs 24,942 crore, the dam is expected to produce 8,402 million units of electricity annually.
- It is the largest in a series of dams proposed on the Subansiri River, often described as the lifeline of Assam.

Key Facts about Sudan

Recently, a landslide buried a remote mountain village in the Darfur region of Sudan.

About Sudan

- It is the third largest country in Africa.
- Bordering Countries: South Sudan, Ethiopia, Eritrea, Egypt, Libya, Chad, and Central African Republic.
- It borders the Sahara on the north and extends southward to the forests of West Africa and the Congo River basin.
- It also has a significant coastline along the Red Sea.
- Relief: It is mainly composed of vast plains and plateaus that are drained by the Nile River and its tributaries.
- Much of Sudan consists of deserts and arid grasslands with little in the way of vegetation. Massive plains and plateaus cover most of the nation.
- Highest point: Jabal Marrah
- Natural Resources: Petroleum; small reserves of iron ore, copper, chromium ore, zinc, tungsten, mica, silver, gold; hydropower
- Capital City: Khartoum, which is located roughly in the centre of the country, at the junction of the Blue Nile and White Nile rivers.

United Kingdom-India Infrastructure Financing Bridge

The U.K. India Infrastructure Financing Bridge (UKIIFB) recently marked its first anniversary by launching a report in the City of London.

About United Kingdom-India Infrastructure Financing Bridge

- It is a collaborative initiative led jointly by NITI Aayog and the City of London.
- It aims to channel sustainable infrastructure investments into India, leveraging the UK's expertise in managing and structuring large-scale projects.
- The UKIIFB, agreed as part of the UK Economic and Financial Dialogue (EFD), was operationalised with a steering committee made up of representatives from the UK government's Treasury department, construction giants, and engineering and legal firms operating across both countries to drive forward the aim of getting mega infrastructure projects bid-ready.
- This committee will oversee the implementation of the initiative, focusing on projects such as national highways, regional rapid transport systems, and renewable energy ventures.
- UKIIFB Stakeholders will seek to jointly build a diverse investment and financing system that is long-term, stable, and sustainable with manageable risks.
- It is distinctly committed to sustainable infrastructure development, prioritizing environmentally friendly projects that are aligned with the core principles of the Sustainable Development Goals.

Key Facts about Seychelles

Recently, the Indian Navy's First Training Squadron (1TS) comprising INS Tir, INS Shardul and ICGS Sarathi has completed a four-day visit to the Seychelles.

About Seychelles

- It is an archipelagic island country located in the western Indian Ocean.
- It is located to the northeast of Madagascar and east of mainland Africa.
- Other major islands near Seychelles include Comoros and Mauritius to the south, and Maldives to the east.
- It consists of an archipelago of 115 islands (only 8 are permanently inhabited).
- It is composed of two main island groups: the Mahé group which is mountainous granitic islands and a second group are coralline islands.
- Mahe Group is volcanic with a narrow coastal strip and rocky, hilly interior; others are relatively flat coral atolls, or elevated reefs; sits atop the submarine Mascarene Plateau.
- Highest Point: The highest point in Seychelles is Morne Seychellois.
- Climate: The climate is tropical oceanic, with little temperature variation during the year.
- Capital City: Victoria
- UNESCO World Heritage sites: Aldabra Islands and Vallée de Mai National Park

Evia Island

A magnitude 5.2 earthquake shook central Greece recently, with its epicenter located near Athens on Evia Island.

About Evia Island

- Evia, or Euboea, is the second largest island in Greece, second only to Crete, and third in Europe (second only to Cyprus).
- The area of the island is a little more than 3500 sq.km.
- It is located in Central Greece, in the Aegean Sea.
- The island is separated from the Greek mainland by the Euboean strait.
- It is often referred to as a "mainland island" due to its close proximity to Athens, with many points of connection between the two.
- Evia's dramatic geography includes alpine mountains, lush forests, coastal wetlands, hidden canyons, and sun-soaked beaches.
- The main city on Evia is Halkida.
- It acts as the administrative and commercial heart of the island and is famously known for the unique phenomenon of the tidal currents in the narrow strait of Euripus, which changes direction multiple times a day.
- Evia's highest mountains are Dyrfi, Kandili, and Ohi.
- The climate of Evia is Mediterranean. Winters are mild but rainy, and summers are hot with plenty of sunshine.

Strait of Malacca

Recently, India secured Singapore's support to its interest in patrolling the Malacca Strait.

About Strait of Malacca

- It connects the Andaman Sea (Indian Ocean) and the South China Sea (Pacific Ocean).
- It runs between the Indonesian island of Sumatra to the west and peninsular (West) Malaysia and extreme southern Thailand to the east
- The Strait of Malacca's name was derived from the Malacca Sultanate, who governed the archipelago from 1400 until 1511.
- It links the Indian and Pacific oceans and is one of the busiest and most important shipping lanes in the world.
- Singapore, Malaysia, and Indonesia control the joint patrolling of Malacca Strait.

Significance of Strait of Malacca

- Roughly 60% of India's seaborne trade and almost all of its LNG imports pass through the Malacca Strait.
- The route is also a choke point for Chinese shipping, which makes it strategically sensitive.

What are the Malacca Straits Patrols?

- The MSP was launched in 2004 by Indonesia, Malaysia and Singapore to curb piracy, terrorism and trafficking in one of the world's busiest sea lanes. Thailand joined later.
- It consists of three coordinated layers:
- Malacca Straits Sea Patrol – regular joint naval patrols.
- Eyes-in-the-Sky – combined air patrols for surveillance.
- Intelligence Exchange Group – real-time data sharing among the four states.

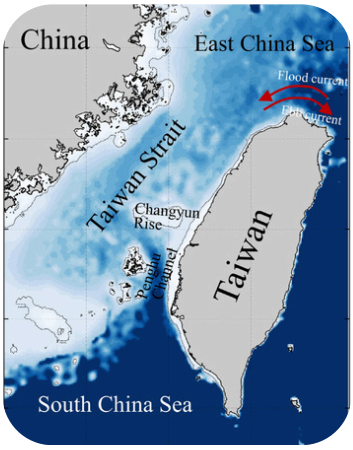
Red Sea

Recent undersea cable cuts in the Red Sea disrupted internet access in parts of Asia and the Middle East.

About Red Sea

- It is a semi-enclosed inlet of the Indian Ocean between Africa and Asia.
- It is connected to the Arabian Sea and the Indian Ocean to the south through the Gulf of Aden and the narrow strait of Bab el Mandeb.
- The northern portion of the Red Sea is bifurcated by the Sinai Peninsula into the Gulf of Aqaba and the Gulf of Suez, where it is connected to the Mediterranean Sea via the famous Suez Canal.
- It is known for its hot and salty waters and is a crucial maritime route between Europe and Asia.
- The Red Sea's unique color changes are due to algae blooms. Geologically, it lies in a fault depression between the Arabian and North African tectonic plates.
- Bordering Countries: Egypt, Saudi Arabia, Yemen, Sudan, Eritrea and Djibouti.
- Five major types of mineral resources are found in the Red Sea region: petroleum deposits, evaporite deposits, sulfur, phosphates, and the heavy-metal deposits.
- Islands: Tiran Island, which is located near the mouth of the Gulf of Aqaba, and Shadwan Island, which is located at the entrance of the Gulf of Suez.

Taiwan Strait



China's military recently said its forces had followed and warned a Canadian and an Australian warship, which were sailing through the sensitive Taiwan Strait, in a move it criticised as a provocation.

About Taiwan Strait

- Taiwan Strait, also called Formosa Strait, separates continental Asia and the island of Taiwan.
- It extends from the South China Sea in the southwest to the East China Sea in the northeast.
- It runs between the coast of the Fujian (Fukien) Province and the island of Taiwan.
- It has an average width of 180 km, while its narrowest part is 130 km wide.
- It sits on Asia's continental shelf that runs along the entire stretch of the strait.
- It is relatively shallow. It has an average depth of about 490 ft and a minimum depth of 82 ft.
- Ports: The chief ports are Amoy in mainland China and Kao-hsiung in Taiwan.
- Rivers: Several rivers, including the Jiulong and Min rivers from China's Fujian Province, drain into the Taiwan Strait.
- Islands:
  - Kinmen and Matsu are two of the largest and most significant islands in the strait located off the Fujian coast of China.
  - The biggest islands along the Taiwan side include Penghu (or Pescadores), Xiamen, and Pingtan.
  - The Xiamen and Pingtan Islands are administered by the People's Republic of China, while the other three islands: Penghu (or Pescadores), Kinmen, and Matsu are under the administration of the Republic of China (Taiwan).
  - Penghu (or Pescadores) Island is the largest and most populous island in the Taiwan Strait.
- It serves as a busy navigational waterway, on which millions of tons of cargo are ferried annually.
- The strait is also one of the most important fishing grounds in China, and more than a hundred economically important fish species are found here.

Papua New Guinea

Recently, as part of the 50th Independence Day celebrations of Papua New Guinea, the Indian Navy Band participated in the grand Military Tattoo at Port Moresby.

About Papua New Guinea

- It is an island nation in Oceania located in southwestern Pacific Ocean.
- Its neighbors are: Indonesia to the west; Australia to the south and Solomon Islands to the south-east.
- It is bounded by the Pacific Ocean, Bismarck Sea, Solomon Sea, Coral Sea, Torres Strait and Gulf of Papua.
- Capital City: Port Moresby

Geographical Features of Papua New Guinea

- It has several volcanoes and is prone to earthquakes and tsunamis.
- Much of the island nation is mountainous and covered in tropical rainforests.
- Highest Point: The highest point of Papua New Guinea is Mount Wilhelm – at an elevation of 14,793 ft (4,509 m).
- Rivers: Sepik River and Fly River
- Volcano: Rabaul Caldera is its most active volcano.
- Papua New Guinea's rainforests are rich in biodiversity, housing rare species such as birds of paradise, tree kangaroos, and the Queen Alexandra's birdwing butterfly.

Government Structure of Papua New Guinea

- The country is a constitutional monarchy and a member of the Commonwealth.
- The British monarch, represented by a governor-general, is head of state, and the Prime Minister is head of government.

Exercise ZAPAD 2025

An Indian Armed Forces contingent departed for the Mulino Training Ground, Nizhniy, Russia, to participate in the exercise ZAPAD 2025.

About Exercise ZAPAD

- It is a multilateral joint military exercise.
- Participating forces from India: The Indian contingent consists of 65 personnel, including 57 from the Army, seven from the Air Force and one from the Navy.
- Aim: This exercise is aimed at enhancing military cooperation, improving interoperability, and providing a platform for participating armies to exchange tactics, techniques and procedures in the domains of conventional warfare and counter-terrorism operations.
- Focus area: It will focus on joint company level operations in open and plain terrain, wherein troops will undertake missions ranging from joint planning, tactical drills, and special arms skills.
- It will offer a valuable opportunity to hone joint operational capabilities, integrate emerging technologies, and operate in a multinational combat environment.
- Significance: It will further strengthen defence cooperation and foster camaraderie between India and Russia, thereby reinforcing the spirit of collaboration and mutual trust.

Universal Postal Union (UPU)

The 28th Universal Postal Congress, the supreme decision-making body of the Universal Postal Union (UPU) , opened recently.

About Universal Postal Congress

- It is a United Nations specialized agency and the postal sector's primary forum for international cooperation.
- It was established by the Treaty of Bern of 1874. It is the second oldest international organization worldwide.
- Headquarters: Bern, Switzerland.

Functions of Universal Postal Congress

- It coordinates postal policies among member nations in addition to the worldwide postal system.
- It sets the rules for international mail exchanges and makes recommendations to stimulate growth in mail, parcel and financial services volumes and improve the quality of service for customers.

Governance Structure

- The Congress: It is the supreme authority of the UPU and meets every four years.
- The Council of Administration: It ensures the continuity of the UPU's work between Congresses, supervises its activities and studies regulatory, administrative, legislative and legal issues.
- The Postal Operations Council: It is the technical and operational mind of the UPU and consists of 48 member countries elected during Congress.
- The International Bureau: Fulfilling a secretariat function, the International Bureau provides logistical and technical support to the UPU's bodies.

Member Countries of Universal Postal Congress

- Any member country of the United Nations may become a member of the UPU.
- Any non-member country of the United Nations may become a UPU member, provided that its request is approved by at least two-thirds of the member countries of the UPU.
- Member countries: At present it consists of 192 member countries.

Scarborough Shoal

The Philippines has reacted strongly to China's announcement of establishing a nature reserve in the South China Sea at the disputed Scarborough Shoal.

About Scarborough Shoal

- It is a disputed atoll in the South China Sea, claimed by both China and the Philippines as part of their territory.
- It is located some 220 kilometers west of the Philippines' Island of Luzon.
- It is the largest atoll in the South China Sea, submerged at high tide with few rocks above sea level.
- What is the Dispute?
- China's claim: China, which now refers to the shoal as Huangyan Island, makes a historical claim to the area, stating that they can trace their ownership of the area back to the Yuan Dynasty of the 1200s.
- Philippines claim: The Philippines claim the area on the basis of geography, as it is much closer to the Philippines' main island of Luzon, which contains the capital, Manila, but lies over 500 miles from China.
- It is considered within the Philippines' 200-nautical mile exclusive economic zone, based on the 1982 United Nations Convention on the Law of the Sea (UNCLOS).
- Commercial Significance: The deep waters around the shoal make it a productive fishing area, rich in marine life, and the lagoon also contains many commercially valuable shellfish and sea cucumbers.

International Electrotechnical Commission

India will host the 89th General Meeting (GM) of the International Electrotechnical Commission (IEC) from 15 to 19 September 2025 at Bharat Mandapam, New Delhi.

About International Electrotechnical Commission

- It is a nonprofit organization which was established in 1906.
- It is the organization that prepares and publishes international Standards for all electrical, electronic and related technologies.
- IEC's mission is to promote, through its members, international cooperation on all questions of electrotechnical standardization and related matters.
- Its standards are developed in a consensus process by experts from the participating countries.
- IEC Standards are often used as a basis to globally harmonize technical requirements in IEC member and non-member countries.
- IEC standards reach over 150 countries.
- Governance: Standardization Management Board (SMB) is an apex governance body of IEC responsible for technical policy matters.
- The IEC works closely with the International Organization for Standardization (ISO) and the International Telecommunication Union (ITU).
- It is the world's leading body for developing international standards for electrical, electronic and related technologies, with a network of 30,000 experts worldwide.
- It is the fourth time India is hosting the prestigious IEC General Meeting, after 1960, 1997 and 2013.
- It is headquartered in Geneva, Switzerland.

WTO Agreement on Fisheries Subsidies

Recently, the World Trade Organisation's agreement on Fisheries Subsidies came into force.

About WTO Agreement on Fisheries Subsidies

- The Agreement on Fisheries Subsidies is the WTO's first multilateral agreement with environmental sustainability at its core.
- It prohibits government support to illegal fishing activities and overexploitation of stocks, contributing to the protection of marine life.
- It was adopted at the 12th Ministerial Conference (MC12) in 2022, in Geneva.
- The agreement establishes
  - The first global trade rules designed to curb harmful fisheries subsidies.
  - Prohibits subsidies that support illegal, unreported and unregulated (IUU) fishing, fishing activities targeting overfished stocks
  - It also covers fishing in areas of the high seas that are not covered by a regional fisheries management organisation.

Implementation of the WTO Agreement on Fisheries Subsidies

- WTO Fish Fund: Ministers have established this fund to provide developing economies and least-developed countries (LDCs) with technical assistance and capacity-building needed to implement the new obligations and manage their own fisheries more sustainably.
- Seventeen members have pledged the equivalent of more than USD 18 million to the WTO Fish Fund.
- Following its entry into force this month, a Committee on Fisheries Subsidies will be created to monitor compliance, review members' notifications on their subsidy programmes.
- WTO members will be required to report details of their fishing subsidies, as well as data such as fish stock levels and conservation measures in place.

International Labour Organisation

Recently, the Union Minister for Labour & Employment signed the Memorandum of Understanding between Government of India and International Labour Organisation (ILO) for collaboration to develop 'International Reference Classification of Occupations'.

About International Labour Organisation

- It is a specialized agency of the United Nations (UN) dedicated to improving labour conditions and living standards throughout the world.
- It is the only tripartite U.N. agency that brings together governments, employers and workers' representatives of 187-member States.
- Member countries: It has 187 member states: 186 out of 193 UN member states plus the Cook Islands.
- In recognition of its activities, the ILO was awarded the Nobel Prize for Peace in 1969.
- Headquarter: Geneva, Switzerland.

History of International Labour Organisation

- It was created in 1919, as part of the Treaty of Versailles that ended World War I
- In 1946, the ILO became a specialized agency of the newly formed UN.
- It is also a member of the United Nations Development Group (UNDP), a coalition of UN organization aimed at helping meet the Sustainable Development Goals.

Functions of International Labour Organisation

- Policy Formulation: It forms international policies and programmes to promote basic human rights, improve working and living conditions, and enhance employment opportunities
- Creation of international labour standards backed by a unique system to supervise their application
- An extensive programme of international technical cooperation formulated and implemented in an active partnership with constituents, to help countries put these policies into practice in an effective manner
- Training, education, and research activities to help advance all of these efforts.

Global Innovation Index

According to the World Intellectual Property Organisation's (WIPO) Global Innovation Index (GII) 2025, R&D growth fell to 2.9 per cent in 2024 and is projected to drop further to 2.3 per cent in 2025.

About Global Innovation Index

- It is a ranking of countries as per their success and capacity in innovation.
- It was first launched in 2007, and has become the leading global benchmark for measuring and comparing innovation performance.
- It is recognized by the UN General Assembly as an authoritative reference for Science, Technology and Innovation (STI) policies.
- It is published yearly by the World Intellectual Property Organization (WIPO).
- It tracks global innovation trends through investment patterns, technological progress, adoption rates, and socioeconomic impacts.
- Significance: It provides a useful resource for government, industry, researchers and anyone with a stake in developing innovation ecosystems around the world.

Key Highlights of the Global Innovation Index 2025

- Top 5 Innovators: For the 15th consecutive year, Switzerland ranks first, followed by Sweden in second, the United States in third, the Republic of Korea in fourth, and Singapore in fifth.
- New Entrants and Rising Stars: China has entered the top 10 for the first time, securing the 10th position and leading all middle-income economies.
- Other countries like India, Türkiye, Vietnam, and Morocco are noted for their upward mobility in the rankings.
- India has risen to 38th place among 139 economies in the Global Innovation Index (GII) 2025, a remarkable improvement from its 81st rank in 2015.

United Nations Human Rights Council

Recently, India defended Qatar's sovereignty at the United Nations Human Rights Council (UNHRC).

About United Nations Human Rights Council

- It was created by the General Assembly on 15 March 2006 by replacing the Commission on Human Rights.
- It is an inter-governmental body within the United Nations system, which is responsible for strengthening the promotion and protection of human rights around the world.
- Mandate: To promote "universal respect for the protection of all human rights and fundamental freedoms for all" and "address situations of violations of human rights, including gross and systematic violations, and make recommendations thereon."
- Member countries: The Council is made up of 47 Member States, which are elected by the UN General Assembly through direct and secret ballot.
- The Council's Membership is based on equitable geographical distribution.
- Members of the Council serve for a period of three years and are not eligible for immediate re-election after serving two consecutive terms.

Functions of United Nations Human Rights Council

- It investigates allegations of breaches of human rights in UN member states.
- It addresses important human rights issues such as freedom of expression, women's rights, LGBT rights, and the rights of racial and ethnic minorities.
- The UNHRC works closely with the Office of the High Commissioner for Human Rights (OHCHR).

Qatar

India recently defended Qatar's sovereignty at the U.N. Human Rights Council.

About Qatar

- Qatar, officially the State of Qatar, is a country located in Western Asia.
- It is located on the northeastern coast of the Arabian Peninsula.
- It has a total area of 11,586 sq.km.
- It shares a sole land border with Saudi Arabia to the south and is surrounded by the Persian Gulf on all other sides.
- The Gulf of Bahrain separates Qatar from the Kingdom of Bahrain.
- Doha is its capital and largest city.
- Languages: Arabic is the official and English is the common language in the country.
- Official Currency: Riyal (QAR)
- Qatar has been ruled by the House of Thani family since 1868.
- It was a British protectorate from 1916 and became fully independent in 1971.

Qatar Landscape

- The landscape of Qatar is primarily flat and barren desert.
- Sand dunes dominate the southern part of the country, especially in the area known as the Khor al Adaid, or the "Inland Sea".
- To the north and west, the terrain turns slightly rockier and features low-rising limestone formations.
- Qatar has wadis, which are valleys that remain dry except during the rainy season when they can briefly turn into rivers.
- One of the most distinct geographical features of Qatar is its salt flats or sabkhas. They form as a result of the country's high evaporation rates, which leave behind salt deposits.
- It includes a number of islands in the coastal waters of the peninsula. Hawar Archipelago, Halul and Al Bashiria are the most well known among these.

Qatar Ethnic Groups

- Qatar was originally settled by Bedouin nomads from the central part of the Arabian Peninsula.
- Qatari citizens, however, constitute only a small portion—roughly one-ninth—of the total population today.
- Economic growth beginning in the 1970s created an economy dependent on foreign workers—mostly from Pakistan, India, and Iran—who now far outnumber nationals.
- Few Qataris retain a nomadic lifestyle.

Qatar Economy

- The Qatari economy is, to a very large extent, dependent on income derived from the exploitation of oil, natural gas and subsidiary industry, which accounts for more than 90 percent of annual exports.
- It has the third largest reserves of liquefied natural gas (LNG) in the world.
- Doha, the capital city, is a regional financial hub, home to various international banks, financial institutions, and investment firms.

Key Facts about Mozambique

Recently, the Indian Navy's First Training Squadron comprising INS Tir, INS Shardul, INS Sujata, and ICGS Sarathi concluded its four-day port visit to Maputo, Mozambique.

About Mozambique

- Location: It is a country in Southern Africa and is located in the Southern and Eastern Hemispheres of the Earth.
- The country also has a coastline on the Indian Ocean to the east.
- The island countries and territories of Madagascar, Comoros, and Mayotte are separated from Mozambique by the Mozambique Channel.
- Bordering countries: Zimbabwe (west), Eswatini and South Africa (south and southwest), Zambia, Malawi (north west), and Tanzania (North).
- Rivers: The River Zambezi being the largest and other rivers are Limpopo, Licungo, Lurio, Rovuma etc.
- Major Lakes: Lake Malawi (Nyasa) is the country's major lake.
- Highest Peak: Mount Binga
- Capital: Maputo is the country's capital while the largest city is Matola.
- Natural Resources: The country's principal natural resources are natural gas, coal, mineral, sand, hydropower, and most likely oil.

Gulf of Finland

Three Russian MiG-31 fighter jets violated the airspace of NATO member Estonia over the Gulf of Finland recently and remained there for 12 minutes.

About Gulf of Finland

- It is the easternmost extension of the Baltic Sea, located in Northern Europe.
- It covers an area of 30,000 sq.km. It is one of the largest bodies of brackish water in the world.
- The gulf extends for 400 km from east to west but only 19 to 130 km from north to south.
- It is bordered by Finland in the north, Russia in the east, and Estonia in the south.
- Both the Finnish capital city, Helsinki, and the Estonian capital, Tallinn, are located right on the shores of the Gulf of Finland.
- At the very eastern end of the gulf is the Russian city of St. Petersburg.
- The gulf is relatively shallow with an estimated average depth of 38 m.
- Of low salinity (six parts per thousand), the gulf freezes over for three to five months in winter.
- It receives the Neva and Narva rivers and the Saimaa Canal.
- The gulf faces a humid continental climate with hot summers and relatively harsh winters.
- The gulf contains numerous banks, skerries and islands.
- The largest include Kotlin Island with the city of Kronstadt (population 42,800), Beryozovye Islands, Lisiy Island, Maly Vysotsky Island, and many others.

Tropical Forests Forever Facility

Brazil will become the first country to announce an investment in the Tropical Forests Forever Facility.

About Tropical Forests Forever Facility

- It is an innovative multilateral global permanent fund dedicated to supporting tropical forest conservation over the long-term.
- It is a global initiative led by the Government of Brazil.
- The idea for the fund was presented by the Brazilian government in 2023, at COP28 in the United Arab Emirates.
- Goal: The TFFF is a blended finance structure that seeks to mobilize US$125 billion in capital from public and private sector sources.
- The fund would invest the money into a diversified portfolio that generates a return that is higher than its cost of capital.
- This would be used to pay the tropical forest countries (TFC) a fixed amount of money per hectare of standing forest.

Financial Mechanism of Tropical Forests Forever Facility

- It aims to raise capital from two main sources, sponsors and market investors through financial markets by issuing debt instruments such as bonds.
- Sponsors: Sponsors would be the 'high income' countries as classified by the World Bank, along with philanthropies. (account for 20 per cent of the total corpus)
- Market Investors: Institutional investors, sovereign wealth funds, and endowments (account for 80 per cent of the total corpus) investing through debt instruments.
- Fund Management: Funds are managed via a Multilateral Development Bank (MDB), e.g., World Bank.

Barren Island

Minor volcanic eruptions were noticed twice in a span of eight days at Barren Island in Andaman and Nicobar Islands recently.

About Barren Island

- It is a volcanic island located in the Andaman Sea.
- Popularly known as a submarine emergent volcano, the island is a part of the Indian union territory of the Andaman and Nicobar Islands.
- It lies about 138 kilometers northeast of the territory's capital, Port Blair.
- It lies above the subduction zone of India and Burmese plates.
- It is the only active volcano in the Indian subcontinent. Also, along a chain of volcanoes from Sumatra to Myanmar, this is the only active volcano.
- This island is about three kilometers in diameter and has a big crater of the volcano, about half a kilometer away from the shore.
- It is a stratovolcano composed of lava, rock fragments, and volcanic ash.
- It has erupted multiple times in recent history, with the most recent significant eruptions occurring in 2017.
- It is inhabited by humans. Only a small population of goats, birds, bats, and rats are living under harsh conditions.

International Criminal Court

Recently, the military-led West African nations of Burkina Faso, Mali and Niger announced their withdrawal from the International Criminal Court.

About International Criminal Court

- It was established by an international agreement, the Rome Statute, on 17 July 1998.
- The Rome Statute sets out the Court's jurisdiction, structures, and functions.
- The Statute entered into force on 1 July 2002.
- It is the only permanent international criminal tribunal.
- Mandate: ICC investigates and, where warranted, tries individuals charged with the gravest crimes of concern to the international community: genocide, war crimes, crimes against humanity, and the crime of aggression.
- Members: There are 125 member countries, (China, India, Israel, Russia, and the United Statee are not ICC parties).
- Funding: The Court is funded by contributions from the States Parties and by voluntary contributions from Governments, international organizations, individuals, corporations, and other entities.

Composition of International Criminal Court

- Judges: The court has eighteen judges, each from a different member country, elected to non-renewable nine-year terms.
- The Presidency: Consists of three judges (the President and two Vice-Presidents) elected from among the judges. It represents the Court to the outside world and helps with the organization of the work of the judges.
- Office of the Prosecutor (OTP): OTP is responsible for receiving referrals and any substantiated information on crimes within the jurisdiction of the Court. OTP examines these referrals and information, conducts investigations, and conducts prosecutions before the Court.
- Registry: It provides administrative and operational support to the Chambers and the Office of the Prosecutor.

Jurisdiction of International Criminal Court

- Unlike the International Court of Justice (ICJ), which hears disputes between states, the ICC handles prosecutions of individuals.
- The ICC is only competent to hear a case if:
- The country where the offence was committed is a party to the Rome Statute; or
- The perpetrator's country of origin is a party to the Rome Statute.
- The ICC may only exercise its jurisdiction if the national court is unable or unwilling to do so.
- The ICC only has jurisdiction over offences committed after the Statute's entry into force on 1 July 2002.

K Visa

Recently, China has introduced a new visa category called the "K Visa" aimed at attracting foreign science and technology talent.

About the K Visa

- The K Visa is a new category of Chinese visa created by revising the Regulations on the Administration of the Entry and Exit of Foreigners.
- It comes into effect from October 1, 2025.
- It is aimed at attracting foreign youth and professionals in STEM (Science, Technology, Engineering, Mathematics) fields.
- Eligible applicants include graduates from renowned universities or research institutions with a bachelor's degree or higher, as well as professionals engaged in STEM-related teaching and research.
- Compared to existing visas, the K Visa offers:
  - Greater flexibility in entry frequency and validity period.
  - Expanded scope of activities (education, science, technology, culture, entrepreneurship, business).
  - No requirement for local enterprise sponsorship.

Key Facts about Venezuela

Recently, according to the U.S. Geological Survey, a 6.2-magnitude earthquake jolted northwest Venezuela.

About Venezuela

- It is located on the northern coast of South America.
- Land Boundaries: It is bounded by Guyana to the east, Brazil to the south, and Colombia to the southwest and west.
- Maritime boundaries: It shares border with the Caribbean Sea and the Atlantic Ocean to the north
- Terrain: Andes Mountains and Maracaibo Lowlands in northwest; central plains (llanos); Guiana Highlands in southeast
- Major Rivers: Rio Negro (shared with Colombia and Brazil) and Orinoco (shared with Colombia).
- Major Lakes: Lake Guri and Lake Maracaibo (the largest lake in South America).
- Venezuela administers a number of Caribbean islands and archipelagos, among which are Margarita Island, La Blanquilla, La Tortuga, Los Roques, and Los Monjes.
- Highest Point: Pico Bolivar
- The world's highest waterfall – the Andes Mountains Angel Falls is located in the Guiana Highlands.
- Resources: Venezuela is home to the world's largest oil reserves as well as huge quantities of coal, iron ore, bauxite, and gold.
- Capital: Caracas

BRICS

The Indian Prime Minister recently met the Russian Deputy Prime Minister to discuss establishing a BRICS Grain Exchange to enhance agricultural trade among member countries.

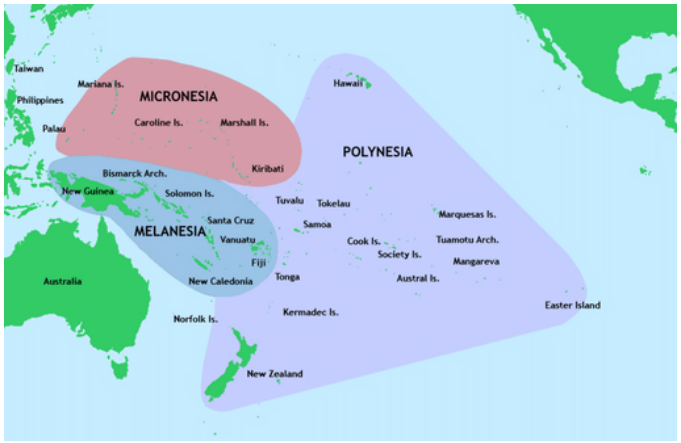
About BRICS

- The acronym 'BRIC' was coined by Jim O'Neill (Goldman Sachs economist) in 2001 to denote four emerging economies – Brazil, Russia, India, and China.
- BRIC held its first meeting in 2006 during the G8 Outreach Summit and its first standalone summit in Russia in 2009.
- With the inclusion of South Africa in 2010, BRIC became BRICS.
- In 2024, Iran, Egypt, the UAE, and Ethiopia joined.
- In 2025, Indonesia joined as a full member.
- Saudi Arabia has not formalised its membership, while Argentina opted out despite initial plans to join.

Membership (2025)

- Core Members (10): Brazil, Russia, India, China, South Africa, Iran, Egypt, UAE, Ethiopia, Indonesia.
- Partner Countries (11): Belarus, Bolivia, Kazakhstan, Cuba, Nigeria, Malaysia, Thailand, Vietnam, Uganda, Uzbekistan.

Forum for India-Pacific Islands Cooperation



Recently, Indian External Affairs hosted a meeting of the foreign ministers of the Forum for India-Pacific Islands Cooperation (FIPIC) in New York.

About Forum for India-Pacific Islands Cooperation

- It is a multilateral platform established by India to enhance cooperation with the Pacific Island countries.
- It was established in 2014 during the Prime Minister of India's visit to Fiji
- Member countries: FIPIC includes 14 of the island countries – Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.
- In line with the "Act East Policy", through FIPIC, India has primarily focused its efforts on the Pacific Islands.
- Economic Cooperation: · At this moment, total annual trade of about $300 million between the Indian and Pacific Island countries, whereas exports are around $200 million and imports are around $100 million.
- FIPIC Summits held: Since 2014 three FIPIC summits have been held, 1st 2014 (Suva, Fiji), 2nd 2015 (Jaipur, India), 3rd 2023 (Port Moresby, Papua New Guinea).

Key Initiatives of India related to FIPIC

- Setting up of a special USD one million fund for adapting to climate change and clean energy, establishing a trade office in India,
- Pan Pacific Islands e-network to improve digital connectivity,
- Visa on arrival at Indian airports for all the 14 Pacific Island countries,
- Cooperation in space technology applications for improving the quality of life of the islands, and training to diplomats from Pacific Island countries.

Central American Integration System

Recently, the external affairs Minister highlighted India's deepening engagement with the countries of the Central American Integration System (SICA) during the India-SICA Foreign Minister's Meeting.

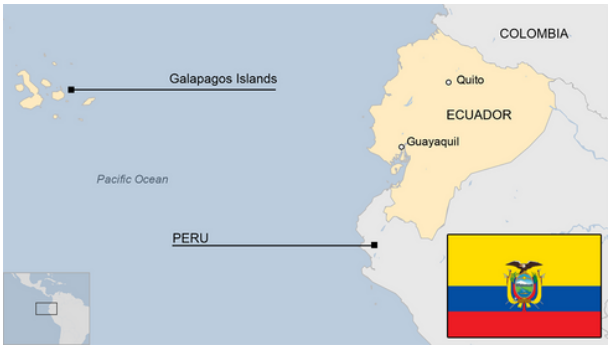
About Central American Integration System

- It is the institutional framework of Regional Integration in Central America.
- Background: It was established on December 13, 1991, by the signing of the Protocol to the Charter of the Organization of Central American States (ODECA) or Tegucigalpa Protocol, which amended the Charter of ODECA, signed in Panama on December 12, 1962, and formally came into operation on February 1, 1993.
- Member countries: It was created by the States of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Subsequently, Belize and Dominican Republic joined as full members.
- The SICA initiative was widely supported by the United Nations General Assembly, with the Tegucigalpa Protocol being duly registered with the UN.
- Governance of Central American Integration System
- The Presidency of SICA rotates every six months.
- Secretariat: It is located in the Republic of El Salvador.

Objectives of Central American Integration System

- The fundamental objective of SICA is to realize regional Peace, Liberty, Democracy and Development, based firmly on the respect and promotion of human rights.
- It also focuses on integration of the region, formation of a Free Trade Area and later a Customs Union, integration of infrastructure, common position on regional and global issues and common passport and visa policy.

Key Facts about Ecuador



Ecuador's Indigenous groups are fiercely opposing President Noboa's plan to expand oil drilling in the Amazon.

About Ecuador

- Location: It is a country located on the northwestern edge of South America.
- History: Ecuador was part of the Inca Empire until the Spanish arrived and claimed the country as a Spanish colony.
- It is divided into four geographic regions: the coastal lowlands and mountain area; the Central Andes Mountains and its two major chains (Cordillera Occidental in the West) and the (Cordillera Oriental in the east).
- Bordering countries: It is bordered by Colombia to the north, by Peru to the south and east.
- Maritime boundaries: It shares borders with the Pacific Ocean to the west.
- Ecuador also includes the Galapagos Islands.
- Highest Point: The highest point in Ecuador is Mount Chimborazo, at 20,560ft (6,268m).
- Volcano: Cotopaxi is one of the world's highest active volcanoes located in the Andes Mountains.
- Climate: Tropical along coast, becoming cooler inland at higher elevations; tropical in Amazonian jungle lowlands.
- Natural resources: Petroleum, fish, timber, hydropower
- Rivers: Babahoyo, Chira, Coca, Curaray.
- Capital City: Quito

Gulf of Aden

A suspected missile strike, likely from Yemen's Houthi rebels, caused a vessel to catch fire in the Gulf of Aden recently.

About Gulf of Aden

- It is an extension of the Indian Ocean, located between the Arabian Peninsula and the African continent.
- The gulf connects the Red Sea to the Arabian Sea via the Strait of Bab el Mandeb.
- The gulf is named after “Aden,” a port city on Yemen’s coast.
- It is one of the largest natural harbors in the world, with an area of about 70 sq. km of sheltered water.
- It is approximately 900 km long and 500 km wide and covers roughly 410,000 sq.km.
- It is bounded to the south by Somalia and the Socotra Islands (part of Yemen), north by Yemen, east by the Arabian Sea, and west by Djibouti.
- The gulf is connected to the Somali Sea to the south by the Guardafui Channel.
- In the west, it narrows into the Gulf of Tadjoura,near Djibouti.
- It is demarcated from the Arabian Sea by the Horn of Africa and the Socotra Islands.
- It is a geologically young body of water with a unique rich biodiversity that comprises many varieties of coral, fish, seabirds, and invertebrates.
- The dominant relief feature of the gulf’s terrain is the Sheba Ridge,an extension of the Indian Ocean ridge system, which extends along the middle of the gulf.
- The Gulf of Aden is strongly influenced by the upwelling of cool, nutrient-rich waters during the southwest and northeast monsoons and is characterized by a prevailing high-energy climate.
- Compared to the neighbouring Red Sea, the Gulf of Aden has a lower saline content.
- Some of the major cities near the gulf include Aden, Mukalla, Ahnwar, Balhaf, Berbera, Bosaso, and Djibouti City.
- Major Ports: Aden in Yemen, and Berbera and Bosaso in Somalia.
- It is also a critical part of the Suez Canal shipping route, which connects the Red Sea and the Mediterranean Sea.
- An estimated 11% of seaborne petroleum passes through the Gulf of Aden en route to the Mediterranean or Arabian Seas.

Incentive Scheme to Promote Critical Mineral Recycling

The Union Cabinet recently approved a Rs.1,500 crore Incentive Scheme to develop recycling capacity in the country for the separation and production of critical minerals from secondary sources.

About Incentive Scheme to Promote Critical Mineral Recycling

- It is part of the National Critical Mineral Mission (NCMM), which is aimed at building the domestic capacity of and supply chain resilience in critical minerals.
- The Scheme will have a tenure of six years from Financial Year 2025-26 to Financial Year 2030-31.
- Total Outlay: Rs.1,500 crore
- Features:
  - Eligible feedstock is e-waste, Lithium Ion Battery (LIB) scrap, and scrap other than e-waste and LIB scraps.
  - Expected beneficiaries will be both large, established recyclers, as well as small, new recyclers (including start-ups), for whom one-third of the scheme outlay has been earmarked.
  - The Scheme will be applicable to investments in new units as well as expansion of capacity and modernization and diversification of existing units.
  - The Scheme will provide incentive for the recycling value chain, which is involved in the actual extraction of critical minerals, and not the value chain involved in only black mass production.
  - The incentives include a 20% capital subsidy on plant and machinery for projects that commence production within the stipulated timeframe and an operational subsidy tied to incremental sales.
  - The operational support will be provided in tranches—40% in the second year and 60% in the fifth year—on meeting specific sales thresholds.
  - To ensure wider participation, the total incentive has been capped at ₹50 crore per large entity and ₹25 crore per small entity, with limits on operating subsidies of ₹10 crore and ₹5 crore, respectively.
- The Scheme incentives are expected to develop at least 270 kilotons of annual recycling capacity, resulting in around 40 kilotons annual critical mineral production, bringing in about Rs.8,000 crore of investment, and creating close to 70,000 direct and indirect jobs.

Land Subsidence

Uttarakhand, already battered by natural calamities including cloudbursts, flash floods, and landslides across its mountainous regions, is now facing a new and terrifying phenomenon: widespread land subsidence in Chamoli's Nanda Nagar.

About Land Subsidence

- Land subsidence is a gradual settling or sudden sinking of the Earth's surface.
- This geotechnical phenomenon occurs when the ground loses its ability to support the weight above it, leading to a downward shift.
- It can occur as a result of natural factors (e.g., volcanic or seismic activity, collapse of subsurface cavities, compaction of loose fine-grained deposits) or anthropogenic activities (e.g., excessive groundwater (GW) abstraction, mining, subsurface energy extraction).
- Although it is a gradual process, taking years to decades to develop, land subsidence presents serious socioeconomic, environmental, and security challenges globally.
- Impacts:
- Land subsidence can cause damage to infrastructure and lead to increased flood risks and permanent reduction in aquifers' storage capacity.
- It can also cause disturbance to water management and possible repercussions such as increased saltwater intrusion as a result of reduction in land elevation and changes in the gradient of streams and drains.
- High maintenance costs for roads, railways, pipelines, and buildings are only a few examples of stresses brought upon by land subsidence.
- Although land subsidence has been historically observed in low deltaic areas or coastal regions, it is being increasingly observed in large inland areas near densely urban, agricultural, and industrial areas with high groundwater demand.
- Excess groundwater extraction is believed to be one of the main causes of large-scale and high-magnitude land subsidence.
- Groundwater overexploitation compacts the underground reservoirs because water is the element partly responsible for holding up the ground.
- The excess water withdrawal leads to compaction of the underlying depleted porous formation, thus inducing land subsidence.
- The total global extent of land surface susceptible to subsidence has been estimated to be 12 million sq.km.
- Land subsidence has been observed all around the world, with major sites in the USA, China, Iran, Indonesia, Taiwan, Vietnam, Egypt, Japan, Mexico, and Italy.

Key Facts about Beas River

The recent unprecedented rainfall in its catchment areas, the Beas river in Himachal Pradesh recorded its highest-ever inflow of water.

About Beas River

- It was known as Vipas in the past, meaning the "Unfettered" river.
- It is a river in Himachal Pradesh and Punjab states, northwestern India.
- It is one of the five rivers that give Punjab ("Five Rivers") its name.
- Origin: It rises 4,361 metres (14,308 ft.) above sea-level on the southern face of Rohtang Pass in Kullu at Beas Kund.
- Course: It traverses 470 kilometres before joining Sutlej at Harike, Punjab.
- Major Tributaries: The major tributaries of the Beas River are Bain, Banganga, Luni, and Uhal, along with Banner, Chakki, Gaj, Harla, Mamuni, Parvati, Patlikuhlal, Sainj, Suketi, and Tirthan.
- The Beas forms the world-famous valleys of Kullu and Kangra.
- The Beas catchment is under the influence of western disturbances that bring snowfall to the upper sub-catchment during winter and the monsoon provides around 70% of the annual rainfall during June - September.
- Dams: The Pong Dam, also known as the Beas Dam, is an earth-fill embankment dam constructed on the river Beas in the Kangra district of Himachal Pradesh.

Blood Moon

Millions of people across Asia and Europe are expected to witness a total lunar eclipse that will turn the moon blood red.

About Blood Moon

- A blood moon is the dramatic red glow of the moon during a total lunar eclipse.

Occurrence of Blood Moon

- A blood moon occurs when Earth comes directly between the Sun and the moon.
- A process called Rayleigh scattering causes the moon to appear red instead of dark.
- This happens because shorter-wavelength light (blue) is scattered, while longer-wavelength red light passes through the Earth's atmosphere, making the moon appear red.
- During totality, "the entire Moon falls within the darkest part of Earth's shadow, called the umbra.
- When the Moon is within the umbra, it appears red-orange." This colour shift is what earns the event its nickname, the "blood moon.
- Depending on external factors such as atmospheric conditions and light pollution, the moon, during a blood moon phase, may appear red, orange, or copper-coloured.

What is Rayleigh Scattering?

- It was explained by the British Nobel laureate John William Strutt (Lord Rayleigh) in the 19th century.
- When light interacts with particles smaller than its wavelength, the intensity of the scattered light is inversely proportional to its wavelength.
- This is the reason the earth sky appears blue: it has the shortest wavelength in visible light.

Avalanche

Three Army personnel, including two Agniveers, lost their lives recently in a major avalanche at the Siachen base camp in Ladakh.

About Avalanche

- An avalanche is a large amount of snow that quickly moves down a slope.
- An avalanche can be deadly because it will bury or sweep away anything in its path.
- Large amounts of sliding rocks, earth, or other materials may also be called avalanches. But these are often known as landslides.
- Many different conditions make an avalanche possible.
- An avalanche is more likely to happen on a slope without trees or large rocks. These things help to keep snow in place.
- A weak layer of snow also makes an avalanche likely.
- Once the conditions are right, several things can start an avalanche.
- Heavy snowfall, strong wind, and rising temperatures all can loosen snow on a slope.
- Falling rocks or ice also can cause snow to slide.
- Even the movement of a skier, a snowboarder, or a snowmobile can trigger an avalanche.
- There are two main types of snow avalanches—sluffs and slabs.
- Sluff avalanches occur when the weak layer of a snowpack is on the top.
- A sluff is a small slide of dry, powdery snow that moves as a formless mass.
- Sluffs are much less dangerous than slab avalanches.
- A slab avalanche occurs when the weak layer lies lower down in a snowpack.
- This layer is covered with other layers of compressed snow.
- When the avalanche is triggered, the weak layer breaks off, pulling all the layers on top of it down the slope.
- These layers tumble and fall in a giant block, or slab.
- Avalanches vary in destructive power from harmless to large enough to destroy mature forests or flatten villages.
- When an avalanche stops, the snow becomes solid like concrete, and people are unable to dig out.
- People caught in avalanches can die from suffocation, trauma, or hypothermia.
- People in mountainous areas protect themselves from avalanches in several ways.
- Special fences help to hold snow in place.
- Barriers help to stop sliding snow or change its direction.
- Explosives help to clear snow from places where avalanches are likely to occur.

Vishwamitri River

Following heavy overnight rainfall in the catchment area of the Vishwamitri River — the Vadodara Municipal Corporation (VMC) recently opened all 62 gates of Ajwa Reservoir to release 6,600 cusecs of water downstream to create a cushion in the reservoir.

About Vishwamitri River

- It is a small non-perennial river, about 200 km in length, located in Gujarat.
- Course:
- It originates from the western and southern slopes of the Pavagadh hills in eastern Gujarat.
- The river flows westward, through Gujarat's third-largest city, Vadodara, after which it meets the two tributaries of Dhadar and Jambuva before draining into the Arabian Sea via the Gulf of Khambhat.
- The highly meandering, sinuous river has a unique ecosystem bearing a plethora of beautiful ravines right from its beginning till its end.
- Porcupines, the common Indian civet, the jungle cat, cobras, pythons, the checkered keelback, and the Bengal monitor are some of the species found in the ravines on the banks of this river.
- Vishwamitri is also where the protected and vulnerable species of the Indian crocodile (Crocodylus palustris), also known as the mugger, resides.
- A survey by the Gujarat Forest Department in 2020 found that there were an estimated 300 muggers in the river within Vadodara's limits.
- Historically, the river has been central to Vadodara's development, with human settlements along its banks dating back to 1000 B.C.

Key Facts about Mugger Crocodiles

- It is one of the 24 extant species of crocodilians found globally.
- The crocodile's common name comes from magar, which translates loosely to "water monster" in the Hindi and Urdu languages.
- Distribution:
- The mugger's geographic range extends from extreme southeastern Iran eastward to Bangladesh and from Nepal and northern India south to Sri Lanka.
- In India it is found in 15 Indian states, with the largest populations in the middle Ganges (Bihar-Jharkhand) and Chambal (Madhya Pradesh, Gujarat and Rajasthan) basins.
- Habitat: It is native to freshwater and inhabits marshes, lakes, rivers and artificial ponds.
- Conservation Status:
- IUCN: Vulnerable
- CITES: Appendix I.

Permafrost

In a groundbreaking discovery in Siberia, scientists recently uncovered a 44,000-year-old wolf, nearly perfectly preserved in permafrost.

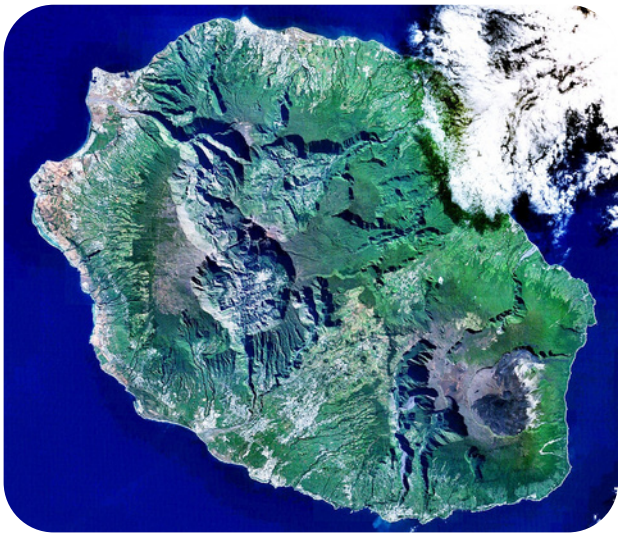
About Permafrost

- Permafrost is any ground that remains completely frozen—32°F (0°C) or colder—for at least two years straight.
- Where are they found?
  - These permanently frozen grounds are most common in regions with high mountains and in Earth's higher latitudes—near the North and South Poles.
  - Permafrost can be found on land and below the ocean floor.
  - Permafrost thickness can range from one meter (about three feet) to more than 1,000 meters (about 3,281 feet), covering entire regions, such as the Arctic tundra, or a single, isolated spot, such as a mountaintop of alpine permafrost.
  - Permafrost covers large regions of the Earth. Almost a quarter of the land area in the Northern Hemisphere has permafrost underneath.
  - While two years is the minimum for permafrost consideration, some regions have had frozen ground for hundreds of thousands of years.
  - Scientists discovered the oldest known permafrost in Siberia, which has been frozen for the past 650,000 years.

What Is Permafrost Made Of?

- Permafrost is made of a combination of soil, rocks, and sand that are held together by ice.
- The soil and ice in permafrost stay frozen all year long.
- Although the ground is frozen, permafrost regions are not always covered in snow.
- Near the surface, permafrost soils also contain large quantities of organic carbon—a material leftover from dead plants that couldn't decompose, or rot away, due to the cold.
- Lower permafrost layers contain soils made mostly of minerals.
- A layer of soil on top of permafrost does not stay frozen all year. This layer, called the active layer,thaws during the warm summer months and freezes again in the fall.
- In colder regions, the ground rarely thaws—even in the summer. There, the active layer is very thin—only 4 to 6 inches (10 to 15 centimeters). In warmer permafrost regions, the active layer can be several meters thick.
- A thawing permafrost layer can lead to severe impacts on people and the environment.
- For instance, as ice-filled permafrost thaws, it can turn into a muddy slurry that cannot support the weight of the soil and vegetation above it.
- Infrastructure such as roads, buildings, and pipes could be damaged as permafrost thaws.
- Additionally, organic matter (like the remains of plants) currently frozen in the permafrost will start to decompose when the ground thaws, resulting in the emission of methane and carbon dioxide into the atmosphere. This contributes to further global climate change.

Reunion Island



Ships of the Indian Navy's first training squadron (1TS), INS Tir and ICGS Sarathi, arrived at Réunion Island, while INS Shardul reached Port Louis, Mauritius, recently, as part of their long-range training deployment in the southwest Indian Ocean Region.

About Reunion Island

- It is a French island in the Western Indian Ocean.
- It lies about 680 km east of Madagascar and 180 km southwest of Mauritius.
- It covers an area of 2,511 sq. km.
- It is almost elliptical in shape, about 40 miles (65 km) long and 30 miles (50 km) wide.
- With Mauritius and Rodrigues Islands, they form the Mascarene Archipelago.
- Of volcanic origin, Réunion consists mostly of rugged mountains in an advanced state of dissection by short torrential rivers.
- The Marsouins and Galet Rivers are the two largest in the territory.
- It is home to the highest peak in the Indian Ocean, the Piton des Neiges, and one of the most active volcanoes on the planet, the Piton de la Fournaise.
- The capital is Saint-Denis, on the northern coast.
- Réunion's coast has no good natural harbours.
- It has a tropical climate.
- People:
  - Réunion was first settled in the 17th century by colonists from France.
  - Slave labourers were brought in from East Africa to work on plantations, and later Malays, Annamites, Chinese, and Malabar Indians were imported as indentured labourers.
  - Today the greatest proportion of the population is of mixed descent (African, European, and South Asian).
- As a French overseas territory, it has the same political status as other departments in mainland France. It is a key French military base for the Indian Ocean region.
- Languages: French, plus Reunion Creole
- Its economy is based largely on the export of sugar. Other products include meat and milk products, rum, molasses, tobacco, geranium essence, and vanilla.

Penna River

Eighteen youngsters stranded in the floodwaters of the Penna River in the Nellore district of Andhra Pradesh recently were rescued after a seven-hour operation.

About Penna River

- The Penna River, also known as Pennar, Pinakini, or Penneru, is a river in southern India that flows through the states of Karnataka and Andhra Pradesh.
- Course:
  - Origin: It rises in the Nandi Hills, an upland region on the Deccan plateau, in Karnataka's Chikkaballapur district.
  - It flows north into Andhra Pradesh state and turns east and then southeast.
  - After passage through a gap in the Eastern Ghats range, it again bends east toward the Coromandel Coast, emptying into the Bay of Bengal near the Nellore district.
- It has a total length of about 597 km.
- The river basin lies in the rain shadow region of the Eastern Ghats.
- The river is seasonal, becoming a torrent after the rains and a thin stream during dry periods.
- Tributaries:
  - The Penna River has several tributaries, most of which are seasonal.
  - Major ones include the Chitravati, Papagni, Cheyyeru, and Kunderu rivers.
- The Penna River is crucial to agriculture in parts of Andhra Pradesh, particularly the drought-stricken Rayalaseema region.
- Several irrigation projects, such as the Somasila, Mylavaram, and Gandikota projects, have been constructed to use the river's waters for farming and drinking purposes.

Lake Natron

Recently, Tanzania's government halted a planned large-scale soda ash mining project at Lake Natron.

About Lake Natron

- Location: It is a salt lake located on the border between Tanzania and Kenya.
- It is part of the eastern branch of the Great Rift Valley.
- It has a unique composition of warm waters and salt, caustic soda, and magnesite deposits that provide ideal conditions for flamingos to thrive.
- It was designated as a Ramsar Site of International Importance in 2001.
- Primarily, the lake is fed by the Ewaso Ng'iro River, which originates from the central region of Kenya.
- One of the most striking features of this Lake is its striking red coloration. The primary reason for its hue lies in its extreme alkalinity.
- It is the only reliable breeding ground for Lesser Flamingos in Africa, supporting up to 75 per cent of the world's population.
- Lesser flamingos feed on Lake Natron with Shompole volcano (situated on the border of Kenya and Tanzania) in the distance at the northern end of the lake.
- Threats: Several factors, including agriculture, pollution, and climate change, are threatening the beauty of this unique ecosystem.

Almatti Dam

To set the stage for the implementation of the languishing Upper Krishna Project (UKP) phase III, the Karnataka Cabinet recently gave clearance for the acquisition of 1,33,867 lakh acres of land to facilitate the increase of Almatti dam's height from the present 519.16 metres to 524.256 metres.

About Almatti Dam

- It is a hydroelectric project on the Krishna River in North Karnataka.
- The dam was completed in July 2005.
- It was built with the primary objectives of supplying irrigation and potable water to adjacent regions, generating hydroelectric energy, and managing flood risks in the area.
- The annual electric output of the dam is 713,000,000 kilowatts (KW).
- The dam holds a gross water storage capacity of 123.08 TMC at 519 meters MSL.
- Standing at a height of 52.5 meters and extending 3.5 kilometers in length, Almatti Dam serves as the principal reservoir of the Upper Krishna Irrigation Project; the 290 MW power station is located on the right side of the Almatti Dam.
- The facility uses vertical Kaplan turbines: five 55 MW generators and one 15 MW generator.
- Two separate facilities, namely, Almatti 1 Powerhouse and Almatti II Powerhouse, each separated by distance, do provide power generation capabilities.
- After generating power, water is released into the Narayanpur reservoir to meet the irrigation requirements downstream.
- 77 acres surrounding Almatti Dam have been developed into meticulously maintained gardens, including the Japanese Garden, Rock Garden, Mughal Garden, Gopal Krishna Garden, and Lavakush Garden.

Carlsberg Ridge

The government recently signed a contract with the International Seabed Authority to explore polymetallic sulphur nodules in the Carlsberg Ridge.

About Carlsberg Ridge

- It is a mid-oceanic ridge (a divergent plate boundary) located in the Indian Ocean.
- The ridge extends from the triple junction of the African, Indian, and Australian tectonic plates (where it connects to the Mid-Indian Ridge) northwest to the Gulf of Aden.
- The ridge separates the Arabian Sea to the northeast from the Somali Basin to the southwest.
- It marks the boundary between the Somali Plate and the Indian Plate.
- The mean depth of the Carlsberg Ridge is between some 6,000 and 12,000 feet (1,800 and 3,600 meters) below the sea surface, and it rises to a mean elevation of about 7,000 feet (2,100 meters) above the seafloor.
- The ridge turns westward around the island of Socotra and eventually connects with the East African Rift System by way of the Gulf of Aden.
- It is the most prominent mid-ocean ridge segment of the western Indian Ocean, which contains a number of earthquake epicenters.

Machu Picchu

Recently, many tourists were stranded near Peru's ancient Inca citadel of Machu Picchu after a passenger train service was suspended due to a protest.

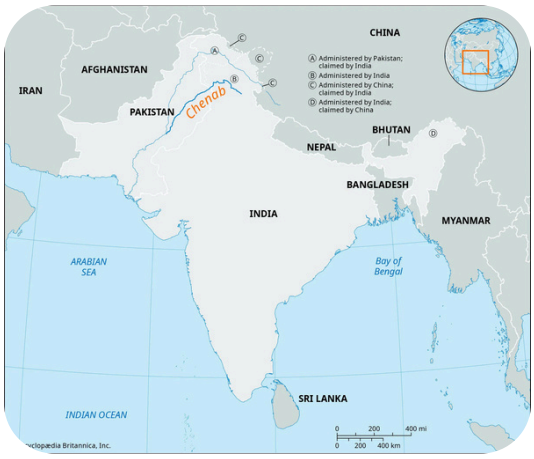
About Machu Picchu

- It is a 15th-century Inca site of Peru.
- Location: It is located 80 km northwest of Cuzco, Peru, in the Cordillera de Vilcabamba of the Andes Mountains.
- It is saddled between two peaks-Machu Picchu ("Old Peak") and Huayna Picchu ("New Peak")—at an elevation of 7,710 feet.
- It is believed to have been built by Pachacuti Inca Yupanqui, the ninth ruler of the Inca, in the mid-1400s.
- Monuments: This citadel is made up of temples, palaces, terraces, monuments, complexes and walls; in addition to water channels, built with large blocks of stone, without any amalgam, proof of the great wisdom of the Inca civilization.
- Machu Picchu was rediscovered in 1911 by the American explorer Hiram Bingham.
- It was designated a UNESCO World Heritage site in 1983.

Key Facts about Inca Civilization

- Time Line: It flourished in ancient Peru between c. 1400 and 1533 CE.
- It is the largest empire ever seen in the Americas and the largest in the world at that time.
- Society: Inca society was highly stratified. The emperor ruled with the aid of an aristocratic bureaucracy.
- Architecture and Technology: Inca technology and architecture were highly developed.
- Religious belief: The Inca religion combined features of animism, fetishism, and the worship of nature gods.

Chenab River



Recently, the stalled Sawalkote dam on the Chenab river is back at the centre of India's strategy to tap the river's hydropower potential.

About Chenab River

- It is a tributary of the Indus River.
- Origin: It is formed by the confluence of two streams, Chandra and Bhaga, in the Lahaul and Spiti Districts of Himachal Pradesh.
- In its upper reaches, it is also known as the Chandrabhaga.
- It flows through Jammu and Kashmir union territory, Himachal Pradesh and after receiving the Jhelum River near Trimmu, the Chenab empties into the Sutlej River.
- Major Tributaries:
  - Left Bank: Niru, Tawi, Neeru, and Liddrari
  - Right Bank: Ans, Bhut Nalla, Bichleri, Kalnai Marusudar and Miyar Nalla.
- Major Dams on Chenab River: Salal (rockfill dam), Aalal (concrete dam), Baglihar, and Dul.
- The waters of the Chenab are shared by India and Pakistan as per the terms of the Indus Water Treaty.

What is the Indus Waters Treaty (IWT)?

- It was signed in 1960 between India and Pakistan, with the World Bank acting as a mediator.
- The treaty outlines water usage rights over six rivers of the Indus River System, categorizing them into Eastern and Western rivers.
- The Eastern rivers—Ravi, Beas, and Sutlej—are allocated for India's exclusive and unrestricted use.
- The Western rivers—Indus, Jhelum, and Chenab—are allocated primarily to Pakistan.

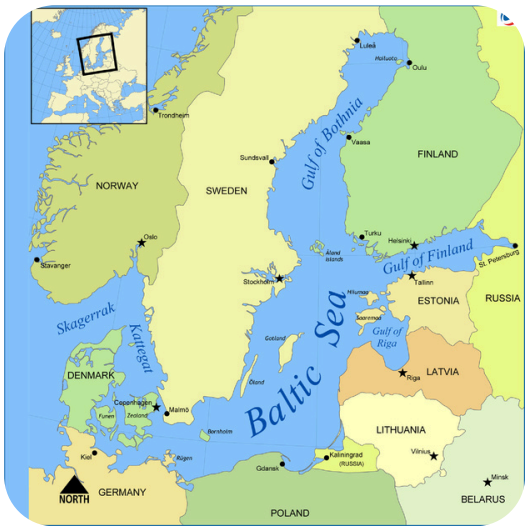
Indrayani River

State level technical committee (SLTC) recently approved two sewage treatment plant (STP) projects along the Indrayani River in Pimpri Chinchwad to curb water pollution.

About Indrayani River

- It is a river located in the state of Maharashtra.
- It is a tributary of the Bhima River (a tributary of the Krishna River).
- Course:
- It is a rain-fed river that originates from the Western Ghats, near the hill station of Lonavala, located along the Mumbai-Pune Highway.
- It flows through the Pune district before merging into the Bhima River at Tulapur.
- It travels a total length of 105.3 km.
- The river has great religious importance, and the two sacred towns, Alandi and Dehu, are situated on its banks.
- Dehu is known to be a sacred place for being the hometown of the poet Saint Tukaram, who was a popular saint of Maharashtra, and Alandi holds the samadhi of the poet Dnyaneshwar.
- The Indrayani also passes through the industrial town of Pimpri-Chinchwad and plays a role in irrigation and local agriculture.
- Valvan Dam at Kamshet, situated on the Indrayani River, is a hydroelectric generating station.

Baltic Sea



Germany's air force recently sent two Eurofighters to track a Russian IL-20M military aircraft that had entered neutral airspace over the Baltic Sea before handing the escort over to NATO partners in Sweden.

About Baltic Sea

- It is a semi-enclosed inland sea of the Atlantic Ocean, situated in Northern Europe.
- It extends northward from southern Denmark to within a few degrees latitude of the Arctic Circle, separating the Scandinavian Peninsula from continental Europe.
- It comprises several branches and basins, which include, from northeast to southwest, the Gulf of Bothnia, the Gulf of Finland, and the Gulf of Riga; the central-southern area known as the Baltic Proper; and the Danish straits of Kattegat and Skagerrak, which connect to the North Sea, an arm of the Atlantic Ocean.
- To the east, the White Sea-Baltic Canal, opened by Russia in 1993, allows traffic from the Baltic—via the Gulf of Finland and a chain of rivers and major lakes—to the White Sea, itself an arm of the Arctic Ocean.
- To the southwest, the Kiel Canal, opened in 1895, cuts through the Jutland peninsula to connect the Baltic with the North Sea.
- It is the youngest sea on our planet, emerging some 10,000-15,000 years ago as the glaciers retreated at the end of the last Ice Age.
- It is approximately 1,600 km long and 193 km wide, covering an area of approximately 377,000 sq.km.
- Surrounding Countries: It has a coastline of approximately 8,000 km, shared by several countries, including Sweden, Poland, Lithuania, Latvia, Finland, Estonia, Germany, Denmark, and Russia.
- It is often cited as the world's largest brackish inland water body.
- Its water salinity levels are lower than that of the world oceans due to the inflow of fresh water from the surrounding land and the sea's shallowness.
- There are about sixty rivers draining into the Baltic Sea. Neva is the largest river that drains into the Baltic Sea.
- Islands: It is home to over 20 islands and archipelagos. Gotland, located off the coast of Sweden, is the largest island in the Baltic Sea.
- Algal Harmful Blooms are also one of the issues that affect the Baltic Sea.

Subansiri River

An expert panel of the Union Environment Ministry has recommended environmental clearance for the 2,220 MW Oju hydroelectric project proposed on the Subansiri river in Taksing near the China border.

About Subansiri River

- It is a Trans-Himalayan river originating from the western part of Mount Porom (5059 m) in the Tibetan Himalaya. (Kangig glacier range in Tibet)
- It is also called the Gold River, the Subansiri River is famous for its gold dust.
- It enters into the plains of Assam through a gorge near Gerukamukh.
- It is the right-bank tributary of the Brahmaputra. It joins the Brahmaputra River in the Lakhimpur district of Assam.
- Tributaries: Major tributaries of the river are Laro, Nye, Yume, Tsari, Kamla, Jiyadhol, Ranganadi and Dikrong.
- Course:
  - It originates from the Himalayas in China and flows towards the east and southeast into India.
  - It flows through Assam, Arunachal Pradesh, and the Tibet Autonomous Region of China.

Key Facts about Oju Hydroelectric Project

- It is proposed on the Subansiri river in Upper Subansiri district, Assam.
- It will be developed by Oju Subansiri Hydro Power Corporation Pvt Ltd.
- The main power plant will have a capacity of 2,100 MW while the dam-toe plant will have a capacity of 120MW.

Key Facts About Morocco

Recently, India and Morocco signed a Memorandum of Understanding (MoU) on defence cooperation in Rabat, with the Defence Minister of India.

About Morocco

- Location: It is located in the Maghreb region in the Northern and Western Hemisphere regions of the Earth.
- Bordering countries: It is bordered by Western Sahara to the south and Algeria to the east.
- It has coastlines on the Atlantic Ocean to the west and the Mediterranean Sea to the north.
- It is the only African country with coastlines on both the Atlantic Ocean and the Mediterranean Sea.
- Two small Spanish enclaves, Ceuta and Melilla, are situated on the country's northern coast.
- Climate: Most of Morocco north of Western Sahara, particularly along the coasts, experiences a typical Mediterranean climate, with mild wet winters and hot dry summers.
- River: The Mououya River is the most significant source of water in Morocco. Its source is located in the Atlas Mountains and flows into the Mediterranean Sea.
- Highest point: Jebel Toubkal is the highest point of Morocco and is also the highest peak of the Atlas Mountains.
- Political System: It has a constitutional monarchy with two legislative houses.
- Economy: It remains heavily dependent on the export of raw materials.
- Language: Morocco's official languages are Arabic and Tamazight (Berber). Arabic is spoken by about two-thirds of the population.
- Capital City: Rabat.

Varkala Cliff

Recently, UNESCO has placed the Varkala Cliff on its tentative list of World Heritage Sites.

About Varkala Cliff

- It is a beautiful natural formation located in Varkala, a coastal town in Thiruvananthapuram district of Kerala.
- This cliff along Kerala's coastline exposes the Warkalli Formation of the Mio-Pliocene age (13 lakh to 2.5 crore years ago), along with natural springs and striking erosional landforms, offering both scientific and touristic value.
- It is locally called Sivagiri Thuruthu.
- Its laterite and sedimentary layers hold fossils and traces of ancient climates.
- The Papanasam Beach, located at the base of the cliff, is revered for its natural springs and believed to have therapeutic properties.
- It is a crucial aquifer and natural water harvesting system for coastal communities, hosted unique biodiversity in its microhabitat, and supports underwater reefs essential for local fishing communities.
- It is the 27th national geological monument in the country and the second in Kerala after the Angadipuram Laterite.

Andaman Sea

The Union Petroleum Minister recently announced that natural gas has been discovered in the Andaman basin, confirming the long-held belief that the Andaman Sea is rich in natural gas.

About Andaman Sea

- It is a semi-enclosed marginal sea in the northeastern Indian Ocean.
- It lies between the eastern coast of India and the Malay Peninsula, with Myanmar to the north and the Indonesian island of Sumatra to the south.
- The Bay of Bengal bounds the Andaman Sea to the west and the Strait of Malacca to the east.
- The sea, covering an area of approximately 307,994 square miles, extends about 750 miles in length and 400 miles in width.
- It is a complex geological region with a tectonically active plate boundary.
- It is part of the larger Sunda Plate, which the Indian Plate borders to the northwest and the Australian Plate to the southeast.
- The ongoing tectonic convergence between these plates has resulted in the formation of the Andaman Basin, characterized by undersea ridges, trenches, and faults.
- The most prominent geological feature in the region is the Andaman Trench, which is formed by the subduction of the Indian Plate beneath the Eurasian Plate.
- This tectonic activity has given rise to numerous earthquakes and volcanic eruptions in the region, making the Andaman Sea seismically active.
- It is home to extensive coral reef systems, seagrass meadows, and mangrove forests, which provide critical habitats for a multitude of marine organisms.
- It hosts many endangered fauna species –Whale Shark, Devil Manta Ray, Dugong, several dolphin species, such as Irrawaddy Dolphin and four species of sea turtles.
- It is also an important site for migratory birds, with several key stopover locations along the East Asian-Australasian Flyway.
- Islands: Most of the islands are part of the Andaman and Nicobar Islands, a Union Territory of India, while the Coco Islands and Preparis Island are part of the Yangon Region of Myanmar.
- The climate of the Andaman Sea is tropical, with two distinct seasons: the southwest monsoon (May-September) and the northeast monsoon (November-February).

Cold Desert Biosphere Reserve

Recently, the Cold Desert Biosphere Reserve (CDBR) in Himachal Pradesh has been included in the World Network of Biosphere Reserves (WNBR) by UNESCO.

About Cold Desert Biosphere Reserve

- It is perched high in the trans-Himalayan region.
- It spans approximately 7,770 sq. km. across the landscapes of Himachal Pradesh's Lahaul-Spiti district.
- It was declared a biosphere reserve in 2009.
- Terrain: It encompasses windswept plateaus, glacial valleys, alpine lakes, and rugged high-altitude deserts.
- This is India's first high-altitude cold desert biosphere reserve and one of the coldest and driest ecosystems in UNESCO's WNBR.
- With this addition, India now has 13 biospheres listed in UNESCO's World Network of Biosphere Reserves (WNBR).
- It covers the Pin Valley National Park and its surroundings, Chandratal and Sarchu & Kibber Wildlife Sanctuary.
- Flora: It harbours 732 species of vascular plants, including 30 endemics and 157 near-endemics of the Indian Himalayas,
- This fragile cold desert ecosystem supports hardy alpine grasses, medicinal herbs, and rare stands of Willow-leaved sea-buckthorn, Himalayan birch and Persian juniper.
- Fauna: It is home to leopard, Himalayan ibex, blue sheep, Himalayan wolf, and rich bird life such as the Himalayan snowcock and golden eagle.

Debrigarh Wildlife Sanctuary

Odisha's Debrigarh Wildlife Sanctuary is all set to be declared India's newest tiger reserve.

About Debrigarh Wildlife Sanctuary

- It is situated in the Bargarh district of Odisha.
- It is located near Hirakud Dam (the longest dam in India and the longest earthen dam in the world) on the Mahanadi River.
- It was declared a wildlife sanctuary in 1985.
- It finds a special mention because of noted freedom fighter Veer Surendra Sai.
- During his rebellion against the British, his base at Barapathara was located within the sanctuary.
- Vegetation: Most of the plant sanctuary is covered with mixed and dry deciduous forest.
- Flora: Major trees found here are Sal, Asana, Bija, Aanla, Dhaura, etc.
- Fauna:
  - Indian leopards, sloth bears, chousingha (four-horned antelope), sambar deer, gaurs (Indian bison), wild boars, and Indian wild dogs etc.
  - It is one of the most flocked wintering grounds of migratory birds that visit the sanctuary from far off places.
  - Some of the most prominent among them are the crested serpent eagle, Flower Peckers, red vented bulbul, tree pie, drongo and white eye oriental.

Vulture Network Portal

Recently, an Assam-based foundation developed the Vulture Network portal.

About Vulture Network Portal

- It is a cloud-based portal designed to serve as a comprehensive knowledge and awareness platform on vultures of India.
- It is first of its kind in India - to build a network of individuals engaged in saving the large scavenger birds.
- It was started by We Foundation India supported by dedicated partners such as the Assam Bird Monitoring Network and other organisations.
- Purpose: It was developed to compile scientific information, spread awareness, and provide freely downloadable outreach materials for anyone interested in conducting awareness campaigns.
- It focuses on the threats of carcass poisoning, harmful veterinary drugs such as diclofenac, and negative social perceptions, all of which continue to drive vulture population decline.
- It is disseminating information in local languages, beginning with Assamese.

Vultures Found in India

- Slender-billed vulture(only about 800 mature individuals left) white-rumped vulture, red-headed vulture, Himalayan griffon, Indian vulture, cinereous vulture, Eurasian griffon, Egyptian vulture, and bearded vulture.

Nilgiri Tea

Nilgiri tea growers are facing a persistent cost price crisis of green tea leaves which is continuously haunting small growers in the region.

About Nilgiri Tea

- Nilgiri Tea is generally described as intensely aromatic, fragrant and flavored tea grown in the southern portion of the Western Ghats.
- It has been named after the Nilgiris or Blue Mountains where it is grown.
- It is mainly cultivated in Nilgiri district of Tamil Nadu and a small portion in Kerala and Karnataka.
- It was recognized with the Geographical Indication Tag in 2008.
- It is known for its delicate flavour and aroma, with notes of floral and citrus.
- It is a popular choice for iced tea and is often used in blends with other teas to create unique taste profiles.

Required Climatic Conditions for Nilgiri Tea

- Altitude: Teas are grown at elevations ranging from 1000 to 2500 metre above sea level.
- Annual Rainfall: 150 to 230cm.
- Soil: Well drained Laterite soil
- It is grown throughout the year in Nilgiri and it also experiences two monsoons per year.

Issues with Nilgiri Tea

- Pricing issue: Price for Green Tea Leaves (GTL) is dwindling these days.
- It is facing issues like over-reliance on Russian exports, poor quality management, adulteration and local market negligence.

Corbett Tiger Reserve

A special annual survey undertaken by the forest department of Uttarakhand to estimate the number of tigers in the Ramnagar division, adjoining Corbett Tiger Reserve, has shown a sharp jump over three years.

About Corbett Tiger Reserve

- It is located on the foothills of the Himalayas in Uttarakhand.
- It was originally established as Hailey National Park in 1936.
- It is not only the first national park in India, but also the first to come under the Project Tiger initiative.
- Terrain: The terrain is undulating with several valleys. The rivers Ramganga, Pallaen, and Sonanadi flow through the valleys.
- It is spread over the Bhabar and lower Shivalik regions with a deep-water table.
- The tract is porous with boulders and sand deposits.
- Vegetation: North Indian tropical moist deciduous forests and tropical dry deciduous forests:
- In general, the vegetation comprises sal and mixed forests, interspersed with grass lands and riparian vegetation.
- The grasslands are locally known as ‘Chaur’, which are an outcome of abandoned settlements or past clearings.
- Flora: Evergreen Sal and its combined trees, the Sheesham, and the Kanju are found extensively on the ridges.
- Fauna: Tigers and elephants, leopards, sambar, hog deer, spotted deer etc.

Himalayan Brown Bear

A rare sighting of a Himalayan brown bear, reportedly with its family, in the Nelong and Jadung Valleys has sparked excitement within Gangotri National Park, Uttarakhand.

About Himalayan Brown Bear

- It is the largest mammal found in the high-altitude regions of the Himalayas.
- It is one of the most ancient brown bear lineages.
- Scientific Name: Ursus arctos isabellinus
- It is also known as the "Himalayan Red Bear" and the "Isabelline Bear". It is known as Denmo in the Ladakhi language.
- It is believed by some that the bear's ability to walk upright probably gave rise to the legend of the Yeti or "Abominable Snowman."

Himalayan Brown Bear Distribution

- They are found in northwestern and central Himalayas, including Pakistan, India, Nepal, the Tibetan Autonomous Region of China, and Bhutan.
- They are found above the timberline, between 3,000 and 5,500 meters (9,800 and 18,000 feet) above sea level.
- In India, this species exists in small isolated populations in the fragmented alpine and subalpine habitats of Jammu and Kashmir, Himachal Pradesh, and Uttarakhand.

Himalayan Brown Bear Features

- Males are larger than females, with an average length of 1.9 m and weight of 135 kg, in comparison to the female averages of 1.6 m and 70 kg.
- It has thick fur which is most often sandy or reddish-brown in colour.
- Food: Omnivorous, eating grasses, roots, bulbs and other plants, insects, and small mammals such as marmots, pikas, and voles.
- They hibernate in dens during the winter.
- They are solitary and only interact with each other to mate or fight over mates. The only exception to this is a mother and her cubs.
- Life span: 20 to 30 years in the wild.

Himalayan Brown Bear Conservation Status

- IUCN Red List: Critically Endangered
- Wildlife (Protection) Act of 1972: Schedule I
- CITES – Appendix I

Hilsa Fish

Bangladesh recently announced it has decided to export hilsa fish to India ahead of the Durga Puja festive season as a mark of "enduring Bangladesh-India friendship".

About Hilsa Fish

- It is a species of fish belonging to the Clupeidae family, which includes herring fish.
- It is also called Ilish and holds an exceptional position in the culinary customs and social practices of Bengal.
- It is a fish that is highly prized because of its delicate flavour, distinct taste, and silky texture.
- Scientific Name: Tenualosa ilisha

Hilsa Fish Habitat and Distribution

- It is found in rivers and estuaries in Bangladesh, India, Pakistan, Myanmar, and the Persian Gulf area.
- Hilsa fish live in both saltwater and freshwater.
- They spend most of their lives in the ocean.
- However, when it's time to lay their eggs, they swim up into rivers. This journey is called a migration.
- They travel to rivers like the Padma River and Meghna River in Bangladesh.
- They also go to rivers in India, such as the Ganges River and Godavari River.
- Bangladesh produces around 70% of the world's ilish, making it a subject of public pride. Ilish is also the national fish of Bangladesh.
- The Hilsa fish helps Bangladesh's economy a lot. It makes up about 12% of all the fish caught in the country. It also adds about 1% to the country's total GDP.

Hilsa Fish Appearance

- Hilsa fish have a silvery body.
- They are quite flat and have a pointed head.
- Hilsa can grow up to about 50 cm, weighing more than 3 kg.
- They are known for their many small bones.

Hilsa Fish Conservation Status

- It is classified as 'Least Concern' under the IUCN Red List.

Phosphate Rocks

The Union environment ministry's expert appraisal committee (EAC) has given its nod to carry out an environment impact assessment study for Birmania Rock Phosphate mine proposed in the potential Great Indian Bustard (GIB) area in Jaisalmer, Rajasthan.

About Phosphate Rock

- It is the natural source of phosphorus, an element that provides nutrients to plants for their growth and development.
- Formation of phosphate rock: It is a sedimentary rock formed millions of years ago by the accumulation of organic matter on the ocean floor.
- Geographical Distribution: Its reserves are found in Africa, North America, Kazakhstan, the Middle East and Oceania.
- The world's largest deposits are located in Morocco, which is also one of the global leaders in phosphate extraction.
- Phosphate Rock Deposits in India: Phosphate rocks are majorly produced only from two States in India, namely Rajasthan and Madhya Pradesh.

Uses of Phosphate

- Rock phosphate is the key raw material for DAP and NPK fertilizers. Currently, India is 90% dependent on imports for this raw material.
- Most of the phosphate rock mined throughout the world is used to produce phosphate fertilizer.
- It is also used as animal feed supplements.
- Industrial use: Elemental phosphorus and phosphoric chemicals derived from phosphate rocks find application in detergents, insecticides etc.

Cicada

Scientists with the Botanical Survey of India (MoEF&CC), Southern Regional Centre, Coimbatore, said that resurgence of cicadas in Silent Valley is a telling sign of ecological upheaval.

About Cicadas

- Cicadas are hemipteran insects known for their loud, complex and species-specific acoustic signals or songs.
- A cicada will have the best chance of survival if it can emerge from the ground when its predators are lying dormant.
- Cicadas are insects that spend most of their lives underground and emerge from the soil mainly to mate.
- Habitat: Most cicadas are canopy dwellers and are found in natural forests with large trees.
- Types: Scientists divide the over 3,000 cicada species into two groups: annual and periodical.
    - Annual cicadas: They emerge from the ground at different times each summer.
    - They're usually dark with greenish markings.
    - These insects avoid predators by camouflaging themselves in the trees and flying from hungry birds and moles.
    - Periodical cicadas: Only seven species of cicadas are in the periodical cicadas.
    - These bugs all emerge from the ground at the same time(Summer).
    - These groups appear after a dormant period of either 13 or 17 years.
- Ecological Significance: They prune mature trees, aerate the soil, and once they die, their bodies serve as an important source of nitrogen for growing trees.

Mission Mausam

The Indian Meteorological Department (IMD) will install four additional radars under Mission Mausam in Jammu & Kashmir for more accurate, district wise specific weather forecasts.

About Mission Mausam

- It was launched by the Ministry of Earth Sciences in 2024.
- It is implemented by the India Meteorological Department (IMD), the National Centre for Medium-Range Weather Forecasting (NCMRWF), and the Indian Institute of Tropical Meteorology (IITM).
- It aims to improve weather and climate services, ensuring timely and precise observation, modeling, and forecasting information for multiple sectors, including agriculture, disaster management, and rural development.

Objectives of Mission Mausam

- To enhance India's capability in weather forecasting across various scales—short-term, medium-term, extended-range, and seasonal
- To develop high-resolution models for improved accuracy in predicting monsoon behaviour
- To strengthen observational networks with advanced radars, satellites, and automated weather stations
- To provide actionable advisories for agriculture, water resources, energy, health, and disaster management sectors
- To build capacity through research collaborations with national and international institutions

Significance of Mission Mausam

- It marks a transformative milestone in India's efforts to address climate variability and its far-reaching socio-economic impacts.
- It supports sustainable development while safeguarding lives, livelihoods, and critical infrastructure.

Vembanad Lake

Recently, it is observed that unchecked tourism, luxury houseboats, and decades of encroachment are pushing Vembanad Lake into ecological crisis.

\About Vembanad Lake

- Vemband is the largest lake in Kerala and the longest Lake in India.
- Other names: It is also known as Vembanad Kayal, Vembanad Kol, Punnamada Lake (in Kuttanad) and Kochi Lake (in Kochi).
- Source: The lake has its source in four rivers, Meenachil, Achankovil, Pampa and Manimala.
- It is separated from the Arabian Sea by a narrow barrier island and is a popular backwater stretch in Kerala.
- Famous Boat race in Lake: Vallam Kali (i.e Nehru Trophy Boat Race) is a Snake Boat Race held every year in the month of August in Vembanad Lake.
- In 2002, it was included in the list of wetlands of international importance, as defined by the Ramsar Convention.
- The Government of India has identified this lake under the National Wetlands Conservation Programme.
- The Kumarakom Bird Sanctuary is located on the east coast of the lake.

Cyrtodactylus Vanarakshaka

Recently, a new species of bent-toed gecko, recorded from the montane forests of central Assam.

About Cyrtodactylus Vanarakshaka

- It is a bent-toed gecko belonging to the Cyrtodactylus khasiensis group.
- It was spotted from the forested slopes of Dima Hasao's Jatinga, a unique ecological transition zone within the Barail Hills.
- It has been named after the Assam Forest Department.
- The word "vanarakshaka," derived from the Sanskrit words "vana" (forest) and "rakshaka" (protector), refers to the Assam Forest Department.
- The species is known for high levels of endemism and restricted distributions.
- This finding has increased the number of Cyrtodactylus species known from Assam to five.

What is Gecko?

- These are reptiles and are found on all the continents except Antarctica.
- These colorful lizards have adapted to habitats from rainforests, to deserts, to cold mountain slopes.
- These are mostly small, usually nocturnal reptiles.
- Geckos are spread across six families: Carphodactylidae, Diploda Phyllodactylidae, and Sphaerodactylidae

Sahyadri Tiger Reserve

Recently, the Union Environment Ministry has approved the capture of eight tigers from the Tadoba-Andhari and Pench reserves for their translocation to the Sahyadri Tiger Reserve in western Maharashtra.

About Sahyadri Tiger Reserve

- It is located in the Sahyadri Ranges of the Western Ghats in Maharashtra.
- It is the first Tiger Reserve of Western Maharashtra and the fourth Tiger Reserve of the State spreading over two Protected Areas of Koyana Sanctuary (KWLS) and Chandoli National Park (CNP).
- The central portion of Sahyadri Tiger Reserve is occupied by the "Shivsagar" reservoir of the Koyana River and the "Vasant Sagar" reservoir of the Warana River.
- Terrain: The total area of STR is undulating, with steep escarpments along the western boundary.
- The most distinct feature is the presence of numerous barren rocky and lateritic plateaus, locally called "Sadas", with less perennial vegetation and overhanging cliffs on the edges, along with numerous fallen boulders with dense thorny bushes.
- Vegetation: The forest cover here is that of moist evergreen, semi-evergreen, moist, and dry deciduous vegetation.
- It is the only place where climax and near-climax vegetation are plentiful and prospects of adverse anthropogenic influence in the future are minimal.

Flora and Fauna of Sahyadri Tiger Reserve

- There are many medicinal and fruit-bearing trees along with the commercial hard wood trees in the reserve.
- The most common floral species found here are Anjani (Memecylon umbellatum), Jambhul (Syzygium cumini), and Pisa (Actinodaphaone Angustifolia).
- The main carnivores are the tiger, leopard, and some lesser cats along with the wolf, jackal, and wild dog.
- The large herbivores are several deer species like Barking Deer, Sambar etc.

National Forest Martyrs Day 2025

Tributes were paid to Forest Department personnel who died while engaged in conservation works during the National Forest Martyrs Day, observed recently.

About National Forest Martyrs Day

- It is observed annually on September 11th in India to honor the sacrifices of those who have laid down their lives in defense of the country's forests and wildlife.
- The day honours protective environmentalists and personnel of the forest who have experienced certain risks in the process of conservation of natural resources.

National Forest Martyrs Day History

- The day goes back to the memory of the Khejarli Massacre, which took place in 1730 in the Marwar Kingdom.
- The then Maharaja Abhai Singh demanded Khejri trees from the Bishnoi village of Khejarli to be cut down to provide timber for his new palace.
- However, his action was resisted by the Bishnoi community, which has always been very sensitive towards the natural community.
- Villagers under the leadership of Amrita Devi Bishnoi protested by hugging trees to safeguard them.
- Unfortunately, Devi and many other members of the village were slain while defending the trees.
- It was estimated that 363 of them died while protesting.
- Their legacy inspired later conservation movements, including the Chipko Movement, shaping India's environmental ethos.In recognition of this sacrifice, the Ministry of Environment, Forest and Climate Change of India declared September 11 as the National Forest Martyrs Day in 2013.

Significance of the National Forest Martyrs Day

- It is a tribute to all those who defended nature against exploitation, from illegal logging to poaching.
- It underscores that forests are not just resources; they are lifelines that regulate the climate, purify air and water, and support biodiversity.
- The day is marked by memorial services, tree plantation drives, awareness campaigns, and educational events organised by the Ministry of Environment, state forest departments, and schools.
- Communities come together to honour martyrs and spread awareness about eco-conscious living.

Isobutanol

The Automotive Research Association of India (ARAI) is working to explore the possibility of blending 10% isobutanol with diesel, Union Minister for Transport said recently.

About Isobutanol

- Isobutanol , also called isobutyl alcohol, is an alcohol with the chemical formula $C_4H_{10}O$ and one of the four isomers of butanol.
- It is a clear, colorless liquid with a characteristic odor.
- It is only moderately soluble in water.
- It is very flammable and has a flash point that is only slightly above normal room temperatures.
- Its vapors are heavier than air and can spread unnoticed along the ground.
- Skin contact, ingestion, and inhalation of isobutanol can be harmful to health.
- The compound causes skin irritation and severe eye damage, including loss of vision.

Isobutanol Applications

- It is used as a solvent in the flavor, fragrance, pharmaceutical, and pesticide industries and as a chemical manufacturing ingredient for products such as lacquer, paint strippers, paint primer, and craft paints.
- It is an approved food additive and is also naturally occurring in some foods and many alcoholic beverages.
- Isobutanol may also be used as a biofuel because, like ethanol, it can be manufactured from plants. It can be made from ethanol using fermentation processes.
- It possesses some favorable properties that make it an attractive fuel for internal combustion engines.
- For instance, when compared to ethanol, isobutanol features a higher heating value.
- Isobutanol is less corrosive than ethanol and is much less hygroscopic, which enables it to be transported using the existing fuel infrastructure.
- Moreover, its addition to gasoline does not distort the fuel blend’s vapor pressure to the same extent as ethanol does. All of this while having a high octane rating.

Biodiversity Heritage Site

The government recently declared 8.6 acres of green cover at Cantonment Railway Colony as a biodiversity heritage site — the second in Bengaluru after Gandhi Krishi Vigyan Kendra (GKVK).

About Biodiversity Heritage Sites

- BHS are rich biodiversity areas and are important components of local ecosystems which are being conserved and managed by the society.
- BHS are unique ecosystems having rich biodiversity comprising any one or more of the following components:
- Richness of wild as well as domesticated species or intra-specific categories.
- High endemism.
- Presence of rare and threatened species, keystone species, and species of evolutionary significance.
- Wild ancestors of domestic/cultivated species or their varieties.
- Past pre-eminence of biological components represented by fossil beds and having significant cultural, ethical or aesthetic values and are important for the maintenance of cultural diversity, with or without a long history of human association with them.
- They may spread over terrestrial, aquatic, coastal and inland and marine ecosystems having rich biodiversity.
- Under Section-37 of the Biological Diversity Act, 2002, the State Government, in consultation with local bodies, may notify areas of biodiversity importance as BHS.
- State Governments are empowered to frame schemes for compensating or rehabilitating any person or section of people economically affected by such notification.
- The State Government, in consultation with the Central Government, may frame rules for the management and conservation of BHS.
- The creation of BHS may not put any restriction on the prevailing practices and usages of the local communities other than those voluntarily decided by them.
- The purpose of declaring BHS is to enhance the quality of life of the local communities through the conservation of such sites.
- In 2007, the Nallur Tamarind Grove in Bengaluru, Karnataka, was designated as India's first BHS.

Murikooti Pacha

Researchers at the Jawaharlal Nehru Tropical Botanic Garden & Research Institute (JNTBGRI), Palode, have tapped into the wound-healing properties of the red ivy plant, known locally as "murikooti pacha".

About Murikooti Pacha

- Murikooti Pacha or Red Ivy plant (Strobilanthes alternate), belongs to the Acanthaceae family.
- Other names: Red Flame Ivy, Purple Waffle Plant.

Habitat & Distribution of Murikooti Pacha

- It is native to tropical Asia, particularly Java.
- It is widely cultivated in India, Indonesia, China, and Japan.
- It thrives in moist, shaded environments and is commonly found in gardens and as ground cover.

Applications of Murikooti Pacha

- Traditional practitioners use its leaf paste applied to fresh wounds, cuts, ulcers, and inflamed areas to promote healing and reduce inflammation.
- Also its leaf extracts are used traditionally to treat anemia, gallstones, prolonged menstruation, hemorrhoids, and diabetes.

Key Features of Wound-Healing Pad

- The key ingredient in the multi-layered wound pad developed by the scientists is the acteoside molecule derived from the red ivy plant, which has high efficacy even at lower concentrations of 0.2%.
- It has been designed with a specially engineered electro-spun nanofiber layer, made from biodegradable and non-toxic polymers and is incredibly thin.
- Acteoside is a natural compound found in many plants and its pharmacological activities and therapeutic potential is well-known. This is the first time acteoside has been linked to the red ivy plant.
- Along with acteoside, it also incorporates the antibiotic neomycin sulfate, blended with FDA-approved polymers.

Scarlet Dragonfly

In a recent discovery, a rare scarlet dragonfly has been spotted in the valleys of Munnar, somewhere in Kerala's Western Ghats.

About Scarlet Dragonfly

- It is a species of dragonfly in the family Libellulidae.
- Scientific Name: Crocothemis erythraea
- Its common names include broad scarlet, common scarlet-darter, and scarlet darter.

Scarlet Dragonfly Distribution

- It is a common species in southern Europe and throughout Africa.
- It also occurs across western Asia as far as southern China.
- Sometimes, these dragonflies travel far from their usual homes.

Scarlet Dragonfly Habitat

- Scarlet dragonflies like to live near water.
- They can be found near many types of water, like rivers, streams, and ponds.
- They prefer sunny spots, not places that are too shady.

Scarlet Dragonfly Features

- It can reach a length of 33–44 millimetres (1.3–1.7 in).
- These dragonflies have a flattened and rather broad abdomen.
- The adult male scarlet dragonfly has a bright scarlet red, widened abdomen, with small amber patches at the bases of the hindwings.
- Also the veins on the leading edges of the wings are red.
- Females and immatures are yellow-brown and have a conspicuous pale stripe along the top of the thorax.

Scarlet Dragonfly Conservation Status

- It is classified as 'Least Concern' under the IUCN Red List.

Tipeshwar Wildlife Sanctuary

Recently, a Forest Department team conducting a routine patrol at Tipeshwar Wildlife Sanctuary (TWS) discovered a poached pangolin.

About Tipeshwar Wildlife Sanctuary

- Location: It is located in the district of Yavatmal, Maharashtra.
- Spanning across 148.63 sq.km., the sanctuary derives its name from the nearby 'Goddess Tipai' shrine located in the Tipeshwar village.
- Mainly, the sanctuary sprawls amongst the Patanbori and Parwa Ranges of the Pandarkawad Forest Division.
- Four rivers—Purna, Krishna, Bhima, and Tapti—flow gracefully through the sanctuary, earning it the poetic title “Green Oasis of Eastern Maharashtra.”
- The land here is rich with basaltic soil, a remnant of ancient volcanic activity.
- The sanctuary is home to several villages whose inhabitants rely on the forest for their daily livelihoods.
- Vegetation:
  - The place is quite hilly and undulating and thus has different types of vegetation cover that varies with the altitude.
  - The major forest type here is the ‘Southern Tropical Dry Deciduous Forests’.
- Flora:
  - The forests of Tipeshwar are dominated by teak, which forms about 60% of the canopy, alongside other tree species like Ain, Bija, and Dhawda.
  - The undergrowth features a variety of grasses, bamboo groves, and medicinal plants.
- Fauna: The place shelters a wide array of animals that include Hyena, Chital, Black buck, Sambar, Jackal, Wild boar, Peacock, Monkey, Blue bull, Wild cat, Bear and many more.

National Botanical Research Institute

The National Botanical Research Institute (NBRI) recently achieved a breakthrough by cultivating the exotic flower, Eustoma, native to Mexico and America, in Odisha after successfully growing it on its campus in Lucknow.

About National Botanical Research Institute

- It is amongst one of the constituent research institutes of the Council of Scientific and Industrial Research (CSIR).
- It is located in the city of Lucknow, Uttar Pradesh.
- It is a multi-disciplinary plant research centre of international repute, undertaking basic and applied R&D programmes in several strategically important areas of plant sciences.
- Originally set up as the National Botanic Gardens (NBG) by the State Government of Uttar Pradesh (U.P.), it was taken over by the CSIR in 1953.
- Though initially engaged in research work in the classical botanical disciplines, the NBG went on laying an increasing emphasis, in keeping with the national needs and priorities in the field of plant sciences, on its applied and developmental research activities.
- NBG was renamed as the NBRI, i.e., The National Botanical Research Institute in 1978.
- Objectives:
  - Basic and applied research on plant diversity and prospection, plant-environment interaction and biotechnological approaches for plant improvement.
  - Development of technologies for new plant and microbial sources of commercial importance.
  - Building up germplasm repository of plants of indigenous and exotic origin, including rare, endangered and threatened species
  - Providing expertise and assistance for identification, supply and exchange of plants and propagules, garden layout and landscaping.
  - Dissemination of scientific knowledge and technologies on plants and microbial resources through publications, training, capacity building and extension activities
- The NBRI R&D department has seven divisions under which they conduct various researches. Those seven divisions are
  - Plant Diversity, Systematics and Herbarium.
  - Pharmacognosy, Phytochemistry and Product Development.
  - Plant Ecology and Environment Technologies.
  - Molecular Biology and Biotechnology.
  - Plant Genetic Resources and Improvement.
  - Botanical Garden, Plant Conservation and Agro-technologies.
  - S & T Management.
- CSIR-NBRI is equipped with state-of-the-art laboratories to support R&D.
- CSIR-NBRI has a well-designed Botanic Garden spread over 25 hectares with documented collections of about 5,000 indigenous and exotic plant species and varieties.
- It has an herbarium with 253,103 reference collections of flowering and non-flowering plants of India and two field research stations at Banthra.
- The institute is known for its outstanding contributions to enriching the knowledge base on India's plant diversity, particularly in developing globally competent biotech and microbial technologies, herbal products, and plant databases.
- NBRI is recognized as a leading institute and referral center by different Ministries/Departments of the Government of India and the United Nations in matters related to the Convention on Biological Diversity (CBD), Traditional Knowledge, and Intellectual Property Rights.
- The Institute has been recognized by Government of India as one of the National Repositories for Indian flora under the National Biodiversity Authority and as per the provisions of the Biological Diversity Act, 2002.

Erra Matti Dibbalu

Recently, Andhra Pradesh's Erra Matti Dibbalu (Red Sand Dunes) have been included in the UNESCO Tentative List of World Heritage Sites.

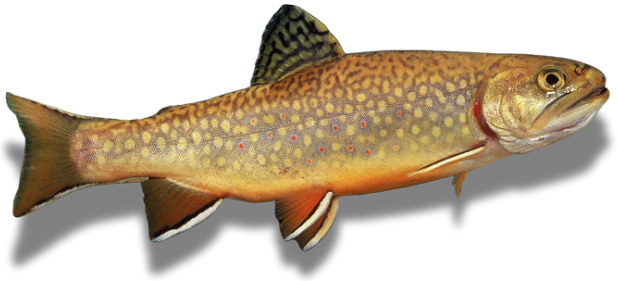
About Erra Matti Dibbalu

- Erra Matti Dibbalu, also known as the Red Sand Dunes is located along the coast near Visakhapatnam in Andhra Pradesh.
- It was first documented by British geologist William King in 1886, these formations are regarded as rare coastal geomorphological features.

Key Features of Erra Matti Dibbalu

- It is composed of sand, silt, and clay, with their distinct reddish hue resulting from natural oxidation over thousands of years.
- The uniqueness of this site is that the red sediments are a part of the continuation of the evolution of the earth and represent the late quaternary geologic age.
- They exhibit badland topography with different geomorphic landforms and features, including gullies, sand dunes, buried channels, beach ridges, paired terraces, the valley in the valley, wave-cut terrace, knick point and waterfalls.
- It is a lively scientific evolution site, which depicts the real-time effects of climate change.
- The site also has archaeological significance, as studies of artefacts indicate an Upper Palaeolithic horizon and on cross dating assigned to Late Pleistocene epoch, which is 20,000 BC.
- The site contains dendritic drainage patterns and sediment layers that record fluctuations in sea level and climatic changes over the late Quaternary period.
- Other similar sites: Only two other similar sites exist in the world, one in Sri Lanka and another in Tamil Nadu (Teri Sands).
- The Geological Survey of India (GSI) declared Erra Matti Dibbalu a National Geo-heritage Monument in 2016.
- Issues: Experts note that the site faces threats from tourism and filming activities

Brown Trout



The Kashmir fisheries department plans to reintroduce the Brown trout back into the Valley for game.

About Brown Trout

- The brown trout (Salmo trutta) is a species of salmonid ray-finned fish and the most widely distributed species of the genus Salmo.
- It has been widely introduced globally as a game fish.
- It is one of the world's worst invasive species outside of its native range.
- It is a cold-water fish that prefers cool and well-oxygenated water.
- Appearance: It usually grows to between 15 and 22 inches in length and between 1 and 5 pounds, the trout is considered a popular game fish..
- Breeding Season: October/November is the breeding season for this fish.
- It is best suited to freshwaters; this fish spends much of its time in crevices between boulders in streams.
- Distribution: The native range extends from northern Norway and White Sea tributaries in Russia in the Arctic Ocean to the Atlas Mountains in North Africa.
- The western limit of their native range is Iceland in the north Atlantic, while the eastern limit is in Aral Sea tributaries in Afghanistan and Pakistan.
- In India, the British first introduced the brown trout in the Valley's streams in 1900.
- Conservation Status: Least Concern (IUCN Red List)

Koala

Recently, Australia approved the world's first vaccine to save koalas from Chlamydia.

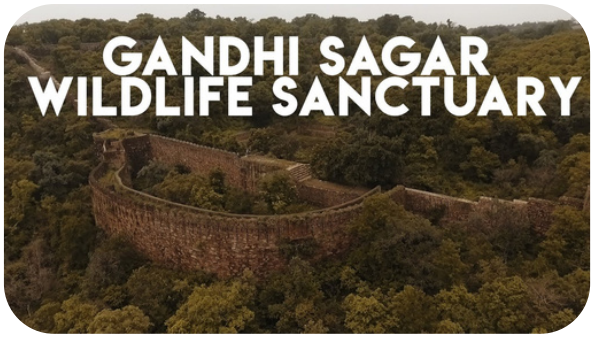
About Koala

- Koala bear (Phascolarctos cinereus) is an arboreal herbivorous marsupial native to Australia.
- It is the only extant representative of the family Phascolarctidae and its closest living relatives are the wombats.
- Koalas are asocial animals, congregating only during the breeding season.
- They spend most of their time eating and sleeping in eucalyptus trees, and their paws have two opposing thumbs to help them grasp and climb up tree trunks.
- Distribution: Koalas are distributed across eastern and southeastern Australia, including northeastern, central, and southeastern Queensland, eastern New South Wales, Victoria as well as southeastern parts of South Australia.
- Habitat: They can be found in habitats ranging from relatively open forests to woodlands, and in climates ranging from tropical to cool temperate.
- Food: Koalas are herbivorous (folivorous) animals, feeding primarily upon the leaves of the eucalyptus tree.
- Conservation status: IUCN: Vulnerable
- Threats: These species are facing compounded threats from disease, habitat loss, climate change and road collisions.

Chlamydia in Koalas

- Koalas suffer from both bacterium species Chlamydia pneumonia and Chlamydia pecorum.
- The disease occurs in koalas multiple ways, including through mating, infected discharges and at birth.
- It can cause eye infections, blindness, urinary tract problems, and even infertility.
- Infected koalas often become weak, dehydrated, and more vulnerable to predators and bushfires.
- In some areas of Australia, up to 70% of wild koalas carry the disease.
- Chlamydia spreads quickly in koalas because they live in overlapping territories and groom each other.

Gandhi Sagar Wildlife Sanctuary



Madhya Pradesh wildlife officials have initiated plans to introduce a female cheetah to the Gandhi Sagar wildlife sanctuary.

About Gandhi Sagar Wildlife Sanctuary

- Location: It is situated in northwestern Madhya Pradesh, along the Madhya Pradesh-Rajasthan border and lies within the Khathiar-Gir dry deciduous forests ecoregion.
- Key features:
  - It was declared a sanctuary in 1974, covering an area of 368 sq. km.
  - Rivers: The Chambal River flows through the sanctuary, dividing it into two parts.
  - It is a designated Important Bird and Biodiversity Area (IBA).
  - The sanctuary houses sites of historical and archaeological significance, such as Chaurasigarh, Chaturbhujnath Temple, Bhadkaji rock paintings, Hinglajgarh Fort,and Taxakeshwar Temple.
- Topography and Vegetation: The sanctuary includes hills, plateaus, and the catchment area of the Gandhi Sagar Dam.
- Vegetation: Northern tropical dry deciduous forest, Northern tropical dry mixed deciduous forest, Dry deciduous scrub.
- Flora: It mainly consists of Khair, Salai, Kardhai, Dhawda, Tendu, and Palash trees.
- Fauna: Chinkara, Nilgai, and Spotted Deer, Indian Leopard, Striped Hyena, and Jackal etc.

Red Coral Kukri Snake

Recently, a rare Red Coral Kukri Snake species, last reported in 1936, was recently found trapped in a net in a village field near Pilibhit Tiger Reserve.

About Red Coral Kukri Snake

- It is identified as Oligodon kheriensis.
- It is one of the rarest non venomous snake species.
- This nocturnal and fossorial snake is specialized with curved teeth like kukri (Nepalian Knife). Hence, they are called “Kukri”.
- Appearance: Its whole body including the head is uniform bright coral-red without any patterns and the underside is yellowish or pinkish hence it is one of the most distinct snakes of its range.
- Its head is short, not broader than the neck and bears an obtusely pointed snout.
- Distribution: It is widely distributed in lowlands (below 1500ft) of Himalayan foothills from Uttrakhand, Nepal, northern parts of Uttar Pradesh, Bihar and West Bengal to Sikkim and western Assam.

Conservation Status of Red Coral Kukri Snake

- IUCN: Least Concern (LC)
- Wild Life Protection Act: Schedule –IV

Key Facts about Pilibhit Tiger Reserve

- It is located in the state of Uttar Pradesh.
- It lies along the India-Nepal border in the foothills of the Himalayas and is part of the Terai Arc Landscape.
- Rivers: The river Gomti originates from the PTR, which is also the catchment of several others like Sharda, Chuka, and Mala Khannot.
- Habitat: The habitat is characterized by dense sal forests and tall alluvial grasslands, savannahs, and impenetrable swamps, maintained by periodic flooding from rivers.
- The Sharda Sagar Dam, extending up to a length of 22 km, is on the boundary of the reserve.
- It has a dry and hot climate, which brings a combination of dry teak forest and Vindhya Mountain soils.

Eustoma

Recently, the National Botanical Research Institute (NBRI), a research arm of the Council of Scientific and Industrial Research (CSIR), has achieved a breakthrough by cultivating Eustoma flower in Odisha.

About Eustoma

- It is commonly known as Lisianthus or Prairie Gentian or Texas Bluebell.
- It is a perennial herbaceous ornamental species that is used as a cut flower and is among the top ten popular cut flowers globally.
- The plant originates from the grasslands of North America.
- Features: It is admired for its wide colour range, long vase life and suitability for cut flowers and potted plants.
- Because of its enormous rose-like blossoms, long stems and extended vase life, its sales have increased dramatically in recent years, earning it the title of 'next rose'.
- Habitat: It typically grows in grasslands and disturbed areas, thriving in warm climates.
- Soil Required: Well drain, moisture-retentive soil and garden compost or well-rotted manure.
- It is native to Mexico, southern USA, Caribbean, and northern South America.
- It has a great cosmopolitan demand mainly for its large and attractive flowers, long and hard stem, wide range of colors.

Saunders's Tern

Recently, Saunders's Tern was sighted at Adyar Estuary in Chennai.

About Saunders's Tern

- Saunders's terns (Sternula saundersi) are a small, ground-nesting marine bird species.
- It is a species of bird in the family Laridae.
- It is sparsely resident along the shores of the north-western Indian Ocean.
- Geographical Range of Saunders's terns : Saunders's terns breeds in Red Sea and Persian Gulf to islands between India and Sri Lanka; apparently winters mainly Seychelles to Maldives and Cocos (Keeling) Island.
- Habitat: This species occupies a variety of coastal areas: estuaries, shallow tropical and subtropical inshore waters, tidal lagoons, and harbors.
- Food: Its diet comprises many kinds of marine animals, such as small fish, crustaceans, and mollusks.
- It nests on the ground up to 2 km inland on uncovered sandy sites, shingles, or dried mud.
- Breeding Season: The breeding season for the Saunders's tern is between March and June.
- Conservation Status of Saunders's terns : Least Concern (IUCN Red List).

Key Facts about the Adyar Estuary

- It is formed by the Adyar River at the point at which the river meets the Bay of Bengal.
- It lies between Santhome beach in the north and Elliots Beach in the south.

Hathei Chilli

Recently, 14th Sirarakhong Hathei Chilli Festival was inaugurated in Manipur to promote GI-Tagged Hathei Chilli.

\About Hathei Chilli

- It is commonly known as the Sirarakhong chilly.
- It thrives well only in the climatic condition of the Sirarakhong village, which is situated about 66 km from Imphal, Manipur.
- This indigenous chilli variety is cultivated under the jhum system on the slopes.
- This chilli received the Geographical Indication Tag (GI) in 2021.

Features of Hathei Chilli

- It is one of the best varieties of chilli in the world and its distinctive colour, taste, size and shape is typical of the variety grown in Sirarakhong village.
- It has a high demand both inside and outside the state for its deep red colour and special taste.
- Its cultivation serves as the main source of income for residents of Tangkhul Naga-dominated Sirarakong village
- It has an extremely high American Spice Trade Association (ASTA) colour value of 164. (The extractable colour of chilli is usually expressed using ASTA values).
- Health Benefits: It works as a good anti-oxidant and possesses high calcium and Vitamin C levels.

What is a Geographical Indications Tag?

- The geographical origin of a product is indicated by a GI tag.
- It is given to foods, handicrafts, industrial items, wine and spirits, and agricultural products.
- The Geographical Indications of Goods (Registration and Protection) Act of 1999 mandates the use of GI tags.
- They are granted by the Geographical Indication Registry, which is part of the Ministry of Commerce and Industry's Department of Industry Promotion and Internal Trade.

National Tiger Conservation Authority

The Supreme Court recently sought responses from the Centre, the National Tiger Conservation Authority (NTCA), and others on a PIL seeking a CBI probe into an alleged organised tiger-poaching and illegal wildlife-trade racket operating in states like Maharashtra and Madhya Pradesh.

About National Tiger Conservation Authority

- It is a statutory body under the Ministry of Environment, Forest, and Climate Change (MoEFCC).
- It was established in 2006 under the Wildlife (Protection) Act 1972 (WPA 1972).

National Tiger Conservation Authority Objectives

- Providing statutory authority to Project Tiger so that compliance with its directives becomes legal.
- The 'Project Tiger' is a Centrally Sponsored Scheme (CSS) of the Ministry of Environment, Forests and Climate Change, providing funding support to tiger range States for in-situ conservation of tigers in designated tiger reserves.
- Fostering accountability of the Center-State in the management of Tiger Reserves by providing a basis for MoU with States within the federal structure.
- Providing for an oversight by Parliament.
- Addressing livelihood interests of local people in areas surrounding Tiger Reserves.

National Tiger Conservation Authority Composition

- Minister in charge of MoEFCC (as Chairperson),
- Minister of State in MoEFCC (as Vice-Chairperson),
- three members of Parliament, the Secretary (MoEFCC), and other members.

National Tiger Conservation Authority Power and Functions

- Powers and functions of the NTCA as prescribed under the WPA 1972, as amended in 2006, are as under:
- to approve the tiger conservation plan prepared by the State Government.
- evaluate and assess various aspects of sustainable ecology and disallow any ecologically unsustainable land use, such as, mining, industry, and other projects within the tiger reserves.
- lay down normative standards for tourism activities and guidelines for Project Tiger from time to time for tiger conservation in the buffer and core area of tiger reserves and ensure their due compliance.
- provide for management focus and measures for addressing conflicts of men and wild animals and to emphasize coexistence in forest areas outside the National Parks, sanctuaries, or tiger reserves, in the working plan code.
- provide information on protection measures, including future conservation plans, estimation of the population of tiger and their natural prey species, status of habitats, disease surveillance, mortality surveys, patrolling, reports on untoward happenings, and such other management aspects as it may deem fit, including future conservation plans.
- Approve and coordinate research and monitoring on tigers, co-predators, prey habitat, related ecological and socio-economic parameters, and their evaluation.
- ensure that the tiger reserves and areas linking one protected area or tiger reserve with another protected area or tiger reserve are not diverted for ecologically unsustainable uses, except in the public interest and with the approval of the National Board for Wild Life and on the advice of the NTCA.
- facilitate and support the tiger reserve management in the State for biodiversity conservation initiatives through eco-development and people's participation as per approved management plans and to support similar initiatives in adjoining areas consistent with the Central and State laws.
- ensure critical support, including scientific, information technology, and legal support, for better implementation of the tiger conservation plan.
- facilitate ongoing capacity building programme for skill development of officers and staff of tiger reserves, and
- perform such other functions as may be necessary to carry out the purposes of this Act with regard to conservation of tigers and their habitat.

Japanese Encephalitis

Researchers have found that waning immunity against infections of the Japanese encephalitis virus (JEV) can predispose individuals to more severe dengue.

About Japanese Encephalitis

- It is a viral zoonotic disease caused by the Japanese Encephalitis(B) virus.
- Japanese encephalitis virus (JEV) is a flavivirus related to dengue, yellow fever and West Nile viruses.

Transmission of Japanese Encephalitis

- The virus is transmitted to humans by the infected Culex mosquito of the Vishnui group.
- There is no human-to-human transmission of the virus.
- It is most common in rural areas of Asia, particularly during monsoon seasons when mosquito breeding is prevalent.
- Both Japanese encephalitis virus and dengue virus belong to the same genus, Orthoflavivirus.

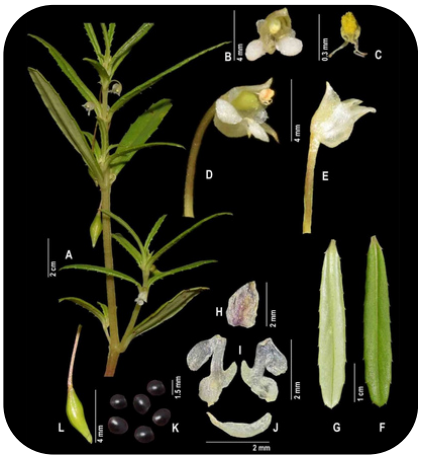
Symptoms of Japanese Encephalitis

- It affects the brain, leading to symptoms like fever, headache, vomiting, and neurological signs such as confusion, seizures, and paralysis.
- While many infected individuals may show mild or no symptoms, severe cases can lead to permanent brain damage or death.

Prevention and Treatment for Japanese Encephalitis

- Vaccination is the most effective prevention strategy, particularly in endemic regions.
- There is no antiviral treatment for patients with JE. Treatment is supportive and includes stabilization and relief of symptoms.
- According to the Government of India's guidelines, two doses of the vaccine have been a part of the Universal Immunisation Programme since 2013.

Impatiens Selvasinghii



Researchers recently found a new plant species named Impatiens selvasinghii in the Kudremukh range of the Western Ghats.

About Impatiens Selvasinghii

- It is a new species of flowering plant.
- It was discovered in the Kudremukh range of the Western Ghats in Karnataka at an altitude of 1,630 meters.
- It is named after an associate professor of botany at Madras Christian College.
- It is one of the smallest flowered balsams from the Western Ghats. Small insects are dependent on this plant.
- It has an exceptionally small flower size and prominently-lobed wing petals, which makes it unique.
- In India, the genus Impatiens is represented by more than 280 taxa, chiefly distributed in the Eastern Himalayas and Western Ghats.
- Over 210 taxa are endemic to India, of which 130 are endemic to the Western Ghats, and 80% of taxa in the Western Ghats are categorized as endangered.

Periyar Tiger Reserve (PTR)

A recent report from the State Finance Inspection wing, operating under the Finance department, has exposed significant financial irregularities at the Periyar Tiger Reserve.

About Periyar Tiger Reserve

- Location: It is named after the Periyar River, is located in the Idukki district of Kerala.
- It is set high at Cardamom Hills and Pandalam Hills of the Western Ghats, adjacent to the border with Tamil Nadu.
- It surrounds the Periyar Lake, which was created in 1895 by building a dam across the Periyar River.
- Terrain: The terrain is hilly and undulating with a maximum altitude of 2016 m. The highest peak is Kottamala (2016 m).
- Rivers: Two major rivers namely Periyar and Pamba drain the area.
- Dams: Mullaperiyar Dam is located within the PTR.
- Tribes: It is home to many tribal communities, including the Mannans and the Palians.
- Vegetation: It comprises tropical evergreen forests, semi- evergreen forests, moist deciduous forests, transitional fringe evergreen forests, grasslands, and eucalyptus plantations.

Flora and Fauna of Periyar Tiger Reserve

- Important flora includes teak, mangoes, rosewood, jamun, jacarandas, terminalias, tamarind, royal ponciana, bamboo, etc.
- Fauna includes Elephants, Wild Pigs, Sambar, Gaur, Mouse Deer, Dole or Barking Deer, Indian Wild Dog, and Tiger.
- The major four species of primates are also found at Periyar – the rare lion-tailed macaque, the Nilgiri Langur, Gee's Golden Langur, Common Langur, and Bonnet Macaque.
- It is also being considered as the habitat of the elusive Nilgiri Tahr.

Lactifluus khasianus

Researchers recently discovered a new species of edible mushroom, now formally named Lactifluus khasianus—but long known to Khasi tribal communities as "Tit iongnah."

About Lactifluus khasianus

- It is a new species of edible mushroom.
- It was discovered in Meghalaya's East Khasi Hills.
- It is long known to Khasi tribal communities as "Tit iongnah."
- Belonging to the Lactifluus sect. Gerardii, the new species, stands out for its chocolate-brown cap, distinctive microscopic features, and genetic markers.
- It grows in association with Khasi pine (Pinus kesiya) at altitudes of around 1,600 metres.
- Though it resembles the widespread Lactifluus gerardii found in North America and Asia, L. khasianus differs in its larger cystidia (specialised fungal cells) and DNA signatures.
- It is now the fifth confirmed species of this section in India—and notably, the first to be reported as edible.
- For Khasi villagers, however, the mushroom has never been a stranger.
- "Tit iongnah" has long been gathered from the forest floor, sold in local markets during the monsoon, and savoured as a seasonal delicacy.

Achanakmar Tiger Reserve

According to officials, a tigress named Jhumri helped in reviving the tiger population in Achanakmar Tiger Reserve (ATR).

About Achanakmar Tiger Reserve

- Location: It is situated in Bilaspur district of Chhattisgarh.
- Achanakmar Wildlife Sanctuary was established in 1975 and was declared a tiger reserve in 2009.
- It is part of the huge Achanakmar - Amarkantak Biosphere Reserve.
- It is one of three tiger reserves in Chhattisgarh. It plays a crucial role in the tiger corridor network, vital for the movement of wildlife.
- It has a corridor connecting Kanha and Bandhavgarh Tiger Reserve and plays a critical role in the dispersal of tigers among these reserves.
- River: The Maniyari River flows right from the centre of this reserve, which is the forest's lifeline.
- Tribe: It is home to the Baigas, (Particularly Vulnerable Tribal Group), Gond and Yadav communities residing inside of this tiger reserve.
- Vegetation: Tropical moist deciduous vegetation covers the majority of the area.
- Flora: Sal, bija, saja, haldu, teak, tinsa, dhawara, lendia, khamar, and bamboo bloom here, along with over 600 species of medicinal plants.
- Fauna: It includes the tiger, leopard, bison, flying squirrel, Indian giant squirrel, chinkara, wild dog, hyena, sambar, chital, and over 150 species of birds.

Yellow-Crested Cockatoos

Yellow-crested cockatoos in Hong Kong are losing natural nesting due to typhoons and tree trimming and conservationists installing artificial nest boxes that mimic natural nests of these birds.

About Yellow-Crested Cockatoos

- The Yellow-crested cockatoo (Cacatua sulphurea) is a medium-sized cockatoo with a retractile yellow or orange crest.
- Appearance: It usually has white plumage, and on its head is a yellow crest that curves forwards.
- Habitat: This cockatoo inhabits forest, forest edge, scrub and cultivated areas from sea-level up to about 1500 meters.
- Distribution: It is native to East Timor and Indonesia's islands of Sulawesi and the Lesser Sundas.
- It is also introduced in Hong Kong developed from caged birds that have been released.
- Food: It is an omnivorous feeder, with a diet that consists primarily of seeds, fruits, nuts, and berries. It is also known to feed on the occasional insect, small reptiles, and roots,
- Social behavior: They are monogamous birds, and pairs stay together for life.
- They are very gregarious animals and learn quickly to mimic.
- Breeding Season: Breeding typically occurs in September to May
- Threats: The main threats to the Yellow-crested cockatoo are illegal pet trade, habitat loss and climate change (rising temperatures dry out forests, leaving them more vulnerable to fires)
- Conservation Status: IUCN: Critically Endangered

Red-Necked Phalarope

Recently, Red-necked Phalarope (Phalaropus lobatus), a rare species, has been spotted at the Nanjarayan bird for the first time.

About Red-Necked Phalarope

- It is a fairly small shorebird known for spinning frantically on water to stir up small invertebrates.
- Distribution: It has a circumpolar distribution and is found in both boreal and tundra zones between 60 and 70 degrees latitude.
- These phalaropes can be found in coastal regions of the Arctic Ocean, south to the Aleutians and Northwest to Britain.
- In the winter, it spends most of its time on the ocean.
- During this non-breeding season, phalaropes can be found off central-west South America, in the Arabian Sea and from central Indonesia to western Melanesia.

Appearance and Behavior of Red-necked Phalarope

- Food: The bird mainly feeds on small aquatic invertebrates and plankton.
- It exhibits a typical feeding behavior of spinning on the surface of water. This rapid circling is believed to bring the prey to its feeding range.
- During the breeding period, the species have a chestnut-red plumage from behind the ear to the down sides of the neck.
- Females are observed polyandrous, that is mating with more than one male.
- The males brood chicks and feed them.
- Conservation status: IUCN: Least concern

Papikonda National Park

A recent study has documented 51 species of herpetofauna in Papikonda National Park.

About Papikonda National Park

- It is located in the East Godavari and West Godavari Districts of Andhra Pradesh.
- Established in 2008, the park covers an area of approximately 1,012.86 sq.km.
- It lies along the banks of the Godavari River, encompassing a rugged landscape with steep slopes, hills, and deep valleys.
- The geology of the park is characterized by the Eastern Ghats range.
- There are 62 named mountains in the park. Devara Konda is the highest point. The most prominent mountain is Verala Konda.
- The national park has been recognized as an Important Bird and Biodiversity Area by BirdLife International.
- The area plays a key role in high precipitation and the consequent origin of various small streams and rivulets which drain and enrich the perennial River Godavari.
- A unique dwarf breed of goat known locally as the “kanchu mekha” originates in this region.
- Vegetation: The park is characterized by tropical, moist deciduous forests mixed with patches of semi-evergreen and dry deciduous forests.
- Flora: The park is home to several types of trees, including teak, rosewood, sandalwood, bamboo, eucalyptus, sal, mahua, pterocarpus, terminalia, and cassia.
- Fauna:
- Wildlife in Papikonda includes Bengal tiger, Indian leopard, sloth bear, and Indian wild dog (dhole).
- The park is also home to various deer species, including sambar and spotted deer.

Striped Dolphin

A pod of striped dolphins, uncommon in Andhra waters, was recently spotted off the coast of Visakhapatnam.

About Striped Dolphin

- The striped dolphin is a streamlined oceanic dolphin, similar in shape and size to the common dolphin.
- Scientific Name: Stenella coeruleoalba
- They are among the most abundant and widespread dolphins in the world.

Striped Dolphin Distribution

- It is found in temperate and tropical waters of all the world's oceans.
- Their range includes waters off Greenland, northern Europe (United Kingdom, Denmark), the Mediterranean Sea, Japan, Argentina, South Africa, western Australia, and New Zealand.

Striped Dolphin Habitat

- They tend to prefer deeper, more offshore waters and can be found in oceanic waters over the continental shelves.
- They are attracted to upwelling areas, where deep, cold, nutrient-rich water rises toward the surface, and convergence zones, where ocean currents meet.

Striped Dolphin Features

- The striped dolphin reaches 2.5-2.6 m (averaging around 2.2-2.3 m) in length, the males being slightly larger.
- They a long, defined rostrum and round forehead (known as a melon).
- Their dorsal fin is hooked, tall, and located mid-back.
- As the name suggests, the most recognisable features are the ‘stripes’. A dark grey stripe runs from the beak, above the eye, across the flank, and then down to the underside of the body. A second stripe runs below the eye to the pectoral flipper.
- Above these stripes, the dolphin's flanks are coloured light blue or grey. All appendages are black, as well. The underside is blue, white, or pink.
- They are usually found in tight, cohesive groups of about 25 to 100 individuals and have been observed breaching, jumping, and leaping over 20 feet above the surface of the water.
- They display a unique behavior called roto-tailing, when the animal leaps high out of the water and vigorously rotates its tail while airborne.
- The estimated lifespan of striped dolphins is up to 58 years.

Striped Dolphin Conservation Status

- It is classified as 'Least Concern' under the IUCN Red List.

Smog Eating Photocatalytic Coatings

The Delhi government will conduct a time-bound study on "smog-eating" photocatalytic coatings in Delhi to combat air pollution.

About Smog Eating Photocatalytic Coatings

- It is designed to neutralise harmful gases like nitrogen dioxide and volatile hydrocarbons that contribute to toxic air.
- It usually uses titanium dioxide as a coating which has advantages for being low-cost and chemically stable.
- Titanium dioxide is also known for its compatibility with traditional construction materials.
- It has been "demonstrated that TiO_2-based photocatalytically active construction materials can be useful for gaseous depollution and environmental cleaning processes.
- Photocatalytic activity helps fight pollution by breaking down harmful substances and organic waste into less toxic or harmless matters using light energy, thereby making air and water cleaner.

What is Smog?

- Smog is used to refer to a type of air pollution caused by a combination of smoke (and other pollutants) and fog.
- Smog encompasses a broad category of air pollutants created through a multitude of processes that relate specifically to the atmospheric conditions of the formation region.
- Two distinct types of smog are recognized:
- Sulfurous smog: It results from a high concentration of sulfur oxides in the air and is caused by the use of sulfur-bearing fossil fuels, particularly coal.
- Photochemical smog: It occurs most prominently in urban areas that have large numbers of automobiles.

Fishing Cat

Marking a significant addition to Ramgarh Vishdhari Tiger Reserve's (RVTR) small cat population, forest officials said a Fishing Cat (Prionailurus viverrinus) was recently seen on camera for the first time inside the reserve.

About Fishing Cat

- It is a stocky and powerfully built medium-sized wild cat species.
- Scientific Name: Prionailurus viverrinus

Fishing Cat Distribution

- It is native to South and Southeast Asia.
- They inhabit the peninsular region of India, Sri Lanka, Malaysia, Thailand, Java, and Pakistan.
- In India, fishing cats are mainly found in the mangrove forests of the Sundarbans, on the foothills of the Himalayas along the Ganga and Brahmaputra river valleys, and in the Western Ghats.
- It is the state animal of West Bengal.

Fishing Cat Habitat

- They are found in a variety of wetland habitats, including mangrove forests, swamps, marshes, and other areas near water sources.
- The species is adapted to both fresh and saltwater habitats, and is able to tolerate a wide range of weather conditions, from tropical rain forests to temperate regions.

Fishing Cat Features

- Fishing cats are powerfully built with short limbs and a stocky body.
- They stand 15-16 inches tall and reach lengths of 38-47 inches.
- They have a long head and a short tail that is roughly one-third the length of their body.
- Their fur is coarse and brownish gray in color with distinctive dark markings.
- The markings are a combination of both spots and stripes. These spots are arranged longitudinally across the body.
- Six to eight dark lines run from above the eyes between the ears over the crown to the nape of the neck.
- The ears are short and round and the back side is black.
- The fishing cat is an adept swimmer and enters water frequently to prey on fish, as its name suggests. It is known to even dive to catch fish.
- They show strong sexual dimorphism. Males are considerably larger.
- They are nocturnal.

Fishing Cat Conservation Status

- It is classified as 'Vulnerable' under the IUCN Red List.

Bonnet Macaques

Recently, the Forest department has registered a case into the mysterious deaths of nine Bonnet macaques near Palode in Thiruvananthapuram, Kerala.

About Bonnet Macaques

- The bonnet macaque (Macaca radiata), also known as zati, is a species of macaque endemic to southern India.
- Behavior: These species are arboreal and terrestrial quadrupeds, live in multimale-multifemale troops. They are diurnal, meaning they are active during daylight hours.
- They are highly arboreal and are strong swimmers.
- Communication: They have adopted a wide array of communication methods through gestures, facial expressions, and sounds.
- Habitat: They are found in a variety of habitats, including evergreen high forest and dry deciduous forest of the Western Ghat Mountains.
- Distribution: The presence of the species has been recorded in Andhra Pradesh, Goa, Karnataka, Kerala, Maharashtra, Tamil Nadu and Gujarat,
- Diet: They are omnivorous and eat fruits, nuts, seeds, leaves, insects, soil, small invertebrates, eggs, and reptiles.
- Reproduction: The bonnet macaque gestation period (pregnancy) lasts around 5-6 months.
- Ecological Role: Bonnet macaques that live within forests involuntarily help with tree reproduction by spreading their seeds throughout the landscape.
- Conservation Status of
- IUCN: Vulnerable
- Wildlife Protection Act, 1972: Schedule I.

Apterichtus kanniyakumari

Researchers from National Bureau of Fish Genetic Resources (NBFGR) have discovered a new species of finless snake eel and named it after Kanniyakumari as Apterichtus kanniyakumari.

About Apterichtus kanniyakumari

- It is a species of finless snake eel belonging to the genus Apterichtus was discovered off the Colachel coast.

Features of Apterichtus kanniyakumari

- It has distinct golden-yellow body colouration, ventral side of head pale white with yellow lines along the lower jaw.
- It consists of three black blotches including one behind the eyes followed by one in rictus and another behind the origin of rictus.
- Molecular analysis based on mitochondrial CO1 gene exhibits that this new species forms a distinct clade with its sympatric species, Apterichtus nanjilnaduensis.

Key Facts about Snake eels

- Snake eels are members of the family Ophichthidae, and are named for their snake-like appearance
- Distribution: They are found in both tropical and temperate waters in oceans around the world.
- Habitat: These eels mainly live in sandy areas in shallow seas, however some live in depths to 800m.
- The snake eel uses its tail to burrow backward into the sea bottom, creating a protective burrow.

Pallikaranai Marshland

Recently, the southern bench of the National Green Tribunal has ordered a halt on all construction activity within one kilometre of the Pallikaranai Marshland until a scientific study is conducted.

About Pallikaranai Marshland

- Location: It is a freshwater marsh and partly saline wetland situated about 20 kilometres south of the city of Chennai, Tamil Nadu.
- It serves as an aquatic buffer of the flood-prone Chennai and Chengalpattu districts.
- It encompasses 65 wetlands, through two outlets, viz., Okkiyam Madavu and the Kovalam Creek, and falls into the Bay of Bengal.
- On its eastern periphery, the Marsh is flanked by the Buckingham Canal.
- It is one of the Ramsar sites in India.
- Fauna
  - The diverse ecosystem of the marshland supports some 115 bird species, ten mammals, 21 reptiles, ten amphibians, 46 fish, nine molluscs, five crustaceans, and seven butterfly species.
  - These include notable species such as Russell's viper (Daboia siamensis) and birds such as the glossy ibis (Plegadis falcinellus), grey-headed lapwings (Vanellus cinereus), and Pheasant-tailed jacana (Hydrophasianus chirurgus).
- Although tropical in bio-climate, the influence of the Bay of Bengal has been significant on the Marsh.
- Threats: It continues to face significant anthropogenic pressures, including encroachments and sewage discharge.

Grue Jay

Researchers at the University of Texas at Austin have identified the first known hybrid of these species, a bird nicknamed the "Grue Jay," according to a 2025 study published in Ecology and Evolution.

About the Grue Jay

- The Grue Jay is a rare natural hybrid between the Blue Jay (Cyanocitta cristata) and the Green Jay (Cyanocorax yncas).
- It displays turquoise-blue plumage with black facial markings, combining features of both parent species.
- First spotted in San Antonio, Texas (2023) by a homeowner, later confirmed by researchers from the University of Texas at Austin.

Key Features of the Grue Jay

- Appearance: Body and tail resemble Blue Jay, but the face mask resembles Green Jay.
- Behaviour: Calls are a blend of both species; they appeared solitary rather than socially integrated.
- Reproduction: Being a male, it may be capable of reproducing, though hybrid sterility remains a risk.
- Symbolism: Like other hybrids such as the “Pizzly Bear” (polar bear–grizzly) and “Zonkey” (zebra–donkey), the Grue Jay highlights species interactions under stress.

India's Dugong Conservation Reserve

Recently, the International Union for Conservation of Nature (IUCN) has formally adopted a motion recognising India's first Dugong Conservation Reserve in Palk Bay.

About India's Dugong Conservation Reserve

- It is India's first Dugong Conservation Reserve.
- It was established on September 21, 2022, by the Tamil Nadu government under the Wildlife Protection Act, 1972,
- It covers 448.34 sq. km. in northern Palk Bay.
- The region is home to over 12,250 hectares of seagrass meadows, vital feeding grounds for dugongs (Dugong dugon).
- Seagrasses also support a host of other marine species, making the reserve ecologically significant.

Key Facts about Dugong

- Dugongs (Dugong dugon) are the only herbivorous mammals found in India's marine ecosystems.
- Appearance: It is known as the sea cow, but resembles a cross between a seal and a whale, and is distributed through the Indo-Pacific region.
- Distribution: They are found along the Indian coastline, primarily inhabiting warm waters around the Andaman and Nicobar Islands, the Gulf of Mannar, Palk Bay, and the Gulf of Kutch. The dugong is a long-lived species, able to live up to 70 years.
- Habitat: Dugongs are restricted to shallow waters, where they spend the day feeding on seagrasses of the genera Cymodocea, Halophila, Thalassia, and Halodule.
- Reproduction of Dugong
- Individuals reach reproductive maturity after only nine or ten years and can give birth at intervals of around three to five years.
- Due to its slow reproductive cycle, extended time to maturity, and infrequent calving, a dugong population's maximum potential growth rate is estimated to be just about 5% per year.
- Conservation status of Dugong
- IUCN: Vulnerable
- CITES: Appendix I
- Wildlife Protection Act 1972: Schedule I.

Aralam Wildlife Sanctuary

Recently, herpetologists surveyed the Aralam Wildlife Sanctuary and documented 16 species of lizards across varied habitats.

About Aralam Wildlife Sanctuary

- Location: It is located on the western slopes of Western Ghats and is the northern most wildlife sanctuary of Kerala.
- It was declared a Sanctuary during 1984.
- Topography: Its altitude ranges from 650 to 1150m.
- Rivers: The River Cheenkannipuzha forms the main drainage system on the southern side. Narikkadavu thodu, Kurukkathodu and Meenumuttithodu from the northern upper reaches flow southwards to join Cheenkannipuzha.
- Vegetation: The forest types include West Coast tropical evergreen forest. , West coast semi-evergreen forests, South Indian moist deciduous forest, Southern hilltop evergreen forest and plantations.
- Flora: The major tree species are Artiocarpus heterophyllus, Bishofia javanica, Calophyllum elatum, Cannarium strictum, Cullenia exarillita, Dipterocarpus sp etc.
- Fauna: Elephant, Gaur, Tiger, Panther,Sambar, Spotted deer, Nilgiri langur, Bonnet macaque, Common langur, Wild dog, common otter, Malabar giant squirrel etc are the major mammals found here.

New Ramsar Sites

Recently, two wetlands from Bihar — Gokul Jalashaya in Buxar and Udaipur Jheel in West Champaran — have received the Ramsar tag.

About Gokul Jalashaya

- Location: It is located in Buxar, Bihar
- It is an oxbow lake located on the southern edge of the Ganga (Ganges) River.
- The flood pulses of the Ganges influence land use and land cover in the wetland, exposing marshes and agricultural areas during the dry months and increasing inundation after monsoons.
- It acts as a buffer for nearby villages during flooding events,.
- Fauna: In total, over 50 bird species are found in the site and its surroundings; in the pre-monsoon season, exposed marshland and shrubs provide food and breeding habitats.
- Local communities rely on the wetland for fishing, farming and irrigation.

About Udaipur Jheel

- It is located in West Champaran, Bihar.
- It is also an oxbow lake, bordered to the north and west by the dense forest of Udaipur Wildlife Sanctuary.
- Flora: Over 280 plant species are found in the wetland, including Alysicarpus roxburghianus, a perennial herb endemic to India.
- The wetland is an important wintering ground for around 35 migratory bird species, including the vulnerable common pochard (Aythya ferina).
- Threats: The wetland faces threats from illegal fishing and intensive agriculture, particularly the use of chemical fertilizers and pesticides.

Amrabad Tiger Reserve

A 54-kilometre-long elevated road bridge that will take traffic over the Nallamala forests of the Amrabad tiger reserve promises to be a one-of-a-kind initiative in the country that could become a model for protecting forests and wildlife in other parts of India.

About Amrabad Tiger Reserve

- It is located in the Nallamala hills of the Eastern Ghats in Telangana state.
- It covers a total area of 2,611.39 sq.km, with 2,166.37 sq.km designated as the core area.
- In terms of core area, it is the second-largest tiger reserve in India.
- This expansive reserve was originally part of the larger Nagarjunasagar-Srisailam Tiger Reserve before the bifurcation of Andhra Pradesh and Telangana in 2014.
- The reserve is renowned for its rugged terrain, deep valleys, and dense forests.
- Within the reserve lies the historic Nagalapuram fort.
- The Krishna River and its perennial streams originating within the reserve contribute to the water supply of major reservoirs such as the Srishailam Dam and Nagarjunsagar Dam.
- The Chenchu tribe is one of the major tribal communities that live in the ATR.
- Flora:
  - Amrabad is characterized by dry deciduous forests, primarily made up of sal, teak, bamboo, and acacia trees.
  - The forest is rich in medicinal plants and shrubs, which have long been used by local tribes for traditional remedies.
- Fauna:
  - Apart from tigers, the reserve supports a range of other big cats, such as leopards and wild cats, along with herbivores like sambar deer, chital (spotted deer), nilgai (blue bull), wild boar, and the Indian bison (gaur).
  - Over 303 bird species have been identified in this region. Some important groups include Eagles, Pigeons, Doves, Cuckoos, Woodpeckers, Drongos, etc.

Yellow-tailed Ashy Skimmer

At the Yamuna Biodiversity Park, Yellow-tailed Ashy Skimmer (Potamarcha congener) has been recorded for the first time during a recent Dragonfly survey in Delhi.

About Yellow-tailed Ashy Skimmer

- It is a species of dragonfly in the family Libellulidae.
- Scientific Name: Potamarcha congener
- It is one of two species in its group, called Potamarcha. The other species is Potamarcha puella.
- It is also known as the common chaser, or swampwatcher.
- Distribution: It is common through much of its range, which stretches through parts of South Asia, Southeast Asia, and Oceania, including in countries such as India, Indonesia, China, Australia, and Vietnam.

Yellow-tailed Ashy Skimmer Features

- It is a medium-sized dragonfly.
- Its body is bluish-black near the head.
- Its tail is yellow with black marks.
- The face of this dragonfly can be yellowish-green to dark brown.
- Its eyes are reddish-brown on top. They are bluish-grey underneath.
- Male Dragonflies: Adult males have a bluish powder-like coating. This covers their upper body and the first part of their abdomen.
- Female Dragonflies: Females have yellow and black stripes on their sides. Their abdomen is black with dull orange marks.
- It can fly backward, showcasing incredible aerial agility uncommon in other flying insects.

Yellow-tailed Ashy Skimmer Conservation Status

- It is classified as 'Least Concern' under the IUCN Red List.

Lachipora Wildlife Sanctuary

District Magistrate Baramulla recently ordered the immediate closure of 14 gypsum mining units operating within the prohibited 1-km radius of Lachipora Wildlife Sanctuary.

About Lachipora Wildlife Sanctuary

- It is situated in the Baramulla district of Jammu and Kashmir near the village of Lachipora.
- It is located on the northern banks of the Jhelum River.
- Established in 1987, the sanctuary was primarily created to protect the endangered Markhor, a wild goat species known for its distinctive twisted horns.
- It is spread over an area of 141 sq.km.
- The sanctuary's elevation ranges from 1,630 to 3,300 meters, contributing to alpine meadows and rich biodiversity.
- The sanctuary features a diverse landscape with gentle to steep slopes and rocky cliffs.
- Flora: It supports a variety of flora, including coniferous forests of deodar, Himalayan white pine, and blue pine, and broadleaf forests with trees like birch, horse chestnut, West Himalayan fir, and Persian walnut.
- Fauna:
  - It is particularly renowned for being the habitat of the endangered Hangul deer, often referred to as the Kashmir stag.
  - It is also home to several other mammal species, such as the Himalayan black bear, Snow leopard, Musk deer, and many more.
  - Lachipora is also designated as an Important Bird Area (IBA). It is home to the vulnerable Western Tragopan bird species.

Beddome's Cat Skink

A biodiversity survey has, for the first time, recorded the presence of Beddome's cat skink (Ristella beddomii) at the Aralam and Kottiyoor Wildlife sanctuaries.

About Beddome's Cat Skink

- It is also called Beddome's ristella.
- Beddome's cat skink is named after British naturalist Richard Henry Beddome, the species is considered rare and endemic to the Western Ghats region.
- Appearance: It is a small reddish brown lizard with retractile claws and bicarinate scales.
- Distribution: It is found in the forests of the Western Ghats at an altitude of 400-1,300 metres.
- Reproduction: It is an oviparous species and egg laying coincides with the southwestern monsoons.

Key Facts about Skink

- It is the common name for the lizards that comprise the family Scincidae.
- It is a type of reptile that has been around since the time of the dinosaurs.
- It is typically smooth and shiny with small or rudimentary legs.
- They are mostly secretive ground dwellers or burrowers.
- Behavior: Skinks are highly alert, agile and fast moving and actively forage for a variety of insects and small invertebrates.
- Habitat: They can be found in a variety of habitats, from deserts to rainforests, and are well-known for their ability to camouflage with their surroundings.
- Distribution: These are represented throughout most of the world but are especially diverse in Southeast Asia and its associated islands, the deserts of Australia, and the temperate regions of North America.

Ophiorrhiza Echinata

A new coffee plant species named Ophiorrhiza echinata was recently found in the Western Ghats.

About Ophiorrhiza echinata

- It is a new species of coffee plant.
- It was discovered in the highly biodiversity-rich shola forests of the Western Ghats at Devikulam in the Idukki District of Kerala.
- It grows in the ecotone region between evergreen forest and grassland vegetation at an elevation of 1,630 m above sea level and may have medicinal potential.
- It belongs to the family Rubiaceae and is closely related to the genus Ophiorrhiza mungos, which is a key ingredient in cancer treatment and antidote preparations.
- Ophiorrhiza echinata has so far only been collected from the type locality.
- The area of occupancy is estimated to be less than four square kilometres, and the known populations contain a maximum of only 35 plants.

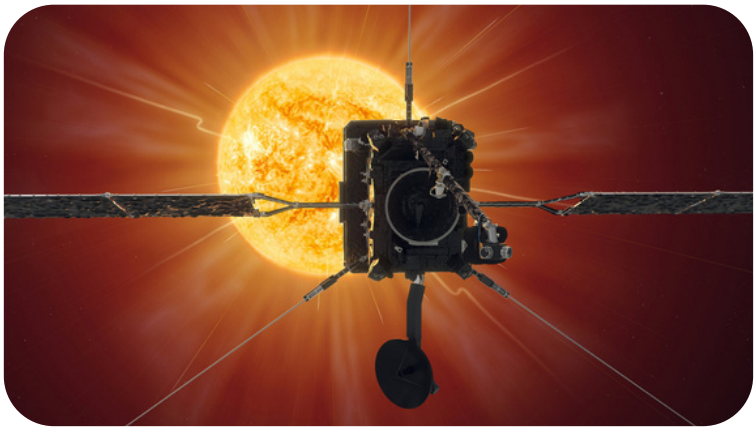
Antlions

Researchers recently discovered two new species of antlions named Indophanes keralaensis and Indophanes sahyadriensis belonging to the family Myrmeleontidae under the order Neuroptera.

About Antlions

- Antlions are a group of about 2,000 different species of insects.
- They belong to a family called Myrmeleontidae.
- They are named for the predatory nature of the larvae, which commonly trap ants and other small insects in pits dug into the ground.
- Adult antlions are not as well known. They live for a shorter time than the larvae.
- Adult antlions, sometimes called antlion lacewings, usually fly at dusk or after dark.
- People sometimes mistake them for dragonflies or damselflies.
- Habitat and Distribution:
- Antlions live all over the world.
- Most types are found in warm, tropical places.
- But some species, like the European Euroleon nostras, live in colder areas.
- They often live in dry, sandy places. This is where their larvae can easily dig their traps.
- However, some larvae hide under leaves or other bits of nature. They wait to ambush their prey there.
- They come in various shapes and sizes, with larvae typically measuring from a few millimeters to several centimeters, depending on the species.
- Antlion larvae have rounded bodies with long sickle-shaped jaws.
- The larvae are found at the base of cone-shaped pits in sandy areas.
- In North America, these larvae are sometimes called doodlebugs. This is because of the wiggly marks they leave in the sand.
- They usually remain in the larval stage for one to two years, depending on the species.
- Once they pupate, they require up to one month to complete their development.
- Antlions are harmless and cause no damage to flowers, people, or structures.
- They are highly beneficial and feed on ants and other insects that fall into their traps.

Solar Orbiter Mission



According to a new study the European Space Agency's (ESA) Solar Orbiter Mission has traced the origin of Solar Energetic Electrons (SEEs) emerging from the Sun.

About Solar Orbiter Mission

- It is a joint project of the European Space Agency and NASA which was launched in 2020.
- Objective: It explores the Sun and heliosphere from close up and out of the ecliptic plane.
- Payload: It carries six remote-sensing instruments to observe the Sun and the solar corona, and four in-situ instruments to measure the solar wind, energetic particles, and electromagnetic fields.

What are Solar Energetic Electrons (SEE)?

- These are high-energy particles produced by the Sun.
- These particles play a key role in shaping the cosmic environment.
- Sources: They can be emitted during solar flares or coronal mass ejections
- Recent findings: It is observed that one type of SEE is tied to intense solar flares, explosive bursts from smaller patches of the Sun's surface, while another stems from coronal mass ejections (CMEs).
- Between November 2020 and December 2022, the Solar Orbiter observed more than 300 bursts of SEEs.
- Significance: It will deepen understanding of space weather.

Iskander-K

Russia struck Ukraine's Cabinet building with an Iskander-K missile recently.

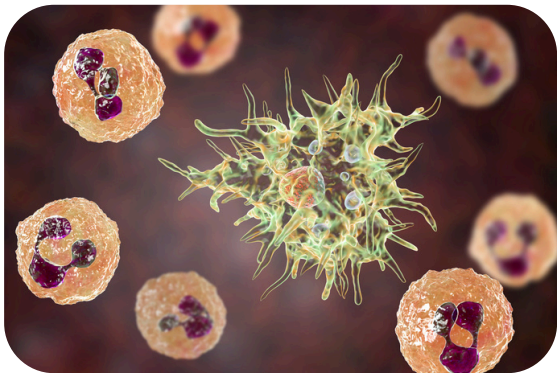
About Iskander-K

- It is a Russian-made mobile short-range cruise missile launcher vehicle based on an 8x8 military truck chassis.
- The design of the Iskander-K is very similar to the Iskander-M, which is a ballistic missile launcher vehicle.
- The Iskander-K, also referred to as SSC-8, entered service with the Russian Armed Forces in February 2017.
- It is designed to perform tactical-operational strikes.

Iskander-K Features

- For the Iskander-K, the vehicle can be fitted with two to six container launcher units.
- The truck launcher can run at a maximum road speed of 70 km/h with a maximum cruising range of 1,000 km.
- The Iskander-K can launch two types of cruise missiles, including the 9M728 (SSC-X-7), also known as the R-500 and the 9M729 (SSC-X-8), a new long-range missile.
- The 9M728 cruise missile has a maximum firing range of 500 km, while the 9M729 cruise missile is designed to destroy land targets and is able to fly at a low altitude to reduce the risks of detection and complicate countermeasures.

Acanthamoeba



Recently, it is revealed that Acanthamoeba is more widespread in Kerala's waterbodies than thought earlier.

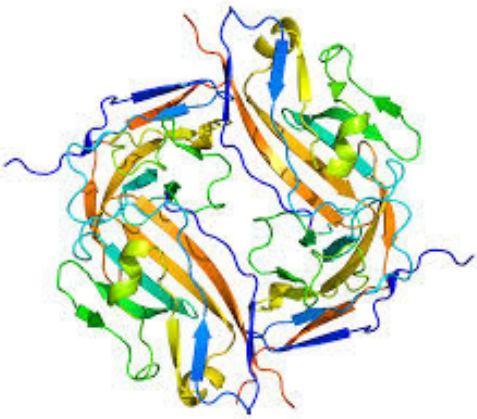
About Acanthamoeba

- It is a free-living ameba, a kind of one-celled organism that lives in water, soil, and dust.
- It can also be found in swimming pools, hot tubs, drinking water systems, humidifiers, and in heating, ventilation, and air conditioning (HVAC) systems.
- It can cause serious infections of the brain, skin, eyes, and sinuses.
- It can infect parts of the body through cuts or skin wounds or from being inhaled into the lungs or nostrils. It can get into the eyes through contact lens use.

Types of Infections Caused by Acanthamoeba

- Granulomatous amebic encephalitis (GAE), which affects the brain and is almost always fatal
- Cutaneous acanthamoebiasis, a skin infection
- Acanthamoeba rhinosinusitis, an infection of the nasal cavity and sinuses
- Acanthamoeba keratitis: It is an eye infection that typically occurs in healthy people and can cause permanent vision loss.

P-47 Protein



Researchers at the S. N. Bose National Centre for Basic Sciences (SNBNCBS) highlighted protein p47's unexpected ability to act as a "mechanical chaperone."

About P-47 Protein

- It is a cofactor protein usually known as a helper for the cellular machine p97 (It is a powerhouse involved in moving and degrading proteins).
- It was long thought to be just an assistant known primarily for its role in protein trafficking, degradation, and membrane fusion.

Highlight of the Study

- It is revealed that p47 can enhance the mechanical efficiency of protein extraction from the endoplasmic reticulum (ER) lumen into the cytoplasm.
- P47 stabilizes polypeptides under stress and guides them through narrow pores, reduces the risk of misfolding and improves the success of protein translocation.
- This finding represents the first direct, single-molecule evidence that cofactors like p47 possess autonomous, force-dependent chaperone-like activity.
- It is found that p47 is not just a passive helper for p97, it can directly stabilize proteins under force, effectively acting as a "mechanical chaperone."
- The findings suggest that targeting mechanical cofactors like p47 could lead to novel therapeutic strategies for diseases linked to protein instability.

Graphite Spyware

Recently, the Trump administration has unfrozen a stalled Biden-era contract with Paragon Solutions, a Graphite spyware company founded in Israel.

About Graphite Spyware

- Graphite spyware is designed to gain remote access to a mobile phone and essentially take control of it.
- Working: The user of the spyware can access the mobile user's photos, read their messages, and track their whereabouts and also monitor encrypted messages sent on platforms such as WhatsApp and Signal.
- The spyware also enables the phone to be used as a listening device by manipulating its recorder.

What are Spywares?

- It is malicious software that enters a user's computer, gathers data from the device and user, and sends it to third parties without their consent.
- It collects personal and sensitive information that it sends to advertisers, data collection firms, or malicious actors for a profit.
- Some of the most commonly used types of spyware include:
- Adware: This sits on a device and monitors users' activity then sells their data to advertisers and malicious actors or serves up malicious ads.
- Infostealer: This is a type of spyware that collects information from devices. It scans them for specific data and instant messaging conversations.
- Keyloggers: Also known as keystroke loggers, keyloggers are a type of infostealer spyware.

INS Androth

Recently, the Indian Navy has received the second indigenously built anti-submarine warfare-shallow watercraft INS Andorth.

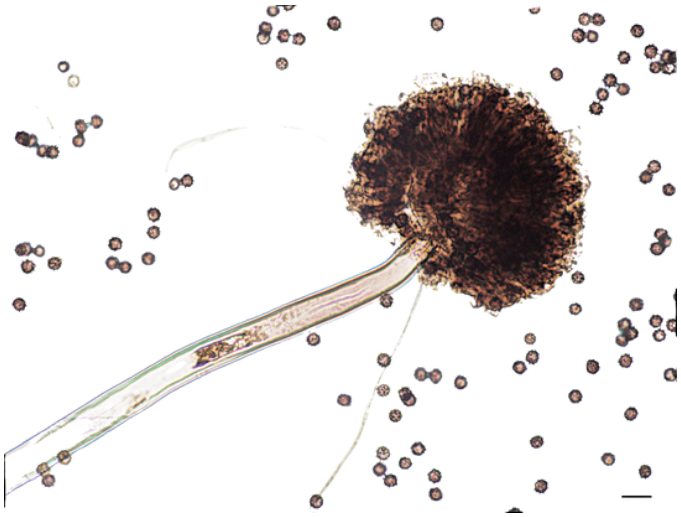
About INS Androth

- It draws its name from Androth Island in the Lakshadweep archipelago.
- It is the second of eight anti-submarine warfare-shallow watercraft (ASW-SWC) built by Garden Reach Shipbuilders and Engineers (GRSE), Kolkata.
- The ASW SWC ships have been indigenously designed and constructed as per the Classification Rules of Indian Register of Shipping (IRS) at GRSE, Kolkata

Features of INS Androth

- It is approximately 77 meters in length and it is the largest Indian Naval warship.
- Propulsion: The ship is propelled by a diesel engine-waterjet combination, which allows for high speed and efficient maneuverability in shallow waters.
- Armament: It is equipped with state-of-the-art lightweight torpedoes, indigenous ASW rockets, and advanced shallow water SONAR,
- It enables effective submarine detection and engagement in littoral zones.
- Significance: It strengthens the Indian Navy's Anti-submarine, coastal surveillance and mine laying capabilities.
- It is built by using over 80 percent indigenous content, reflecting growing domestic capabilities and reducing dependency on imports.

Aspergillus Section Nigri



Agharkar Research Institute in Pune, an autonomous institute of the Department of Science & Technology, recently identified two novel species of Aspergillus section Nigri (commonly known as black aspergillus), Aspergillus dhakephalkarii and Aspergillus patriciawiltshireae.

About Aspergillus Section Nigri

- Aspergillus section Nigri comprises filamentous fungi.
- It is a taxonomic group within the genus Aspergillus, characterized by its black-pigmented conidia (spores) and diverse metabolic capabilities.
- Their colonies usually appear black due to pigmented conidia.
- This section includes species that are significant in food spoilage, industrial applications, and human health, particularly in relation to mycotoxin production and opportunistic infections.
- While primarily sourced from soil, certain members of this group have been observed in various environments such as decaying organic material and on the surfaces of plants, contributing to food spoilage and diseases in maize, onions, grapes, and peanuts.
- Strains of Aspergillus section Nigri can colonize maize and small grains (which include wheat, triticale, spelt, etc.) during pre-harvest, harvest, or post-harvest storage phases.
- Their ability to colonize diverse substrates underscores the importance of understanding their taxonomy, ecology, and potential impacts on agricultural, and food safety.
- Some strains of Aspergillus niger are known to secrete ochratoxins –mycotoxins which can give rise to nephrotoxicity and renal tumours in a variety of animal species and are potentially hazardous to human health through their consumption.
- A. niger is one of the most widely used fungi in biotechnology.
- Production of citric acid, gluconic acid, and various enzymes (amylases, proteases, and cellulases).
- Used in food processing, pharmaceuticals, and bioengineering.

AdFalciVax Vaccine

Recently, the Indian Council of Medical Research (ICMR) has granted non-exclusive rights for its multi-stage malaria vaccine, AdFalciVax, to five pharmaceutical companies.

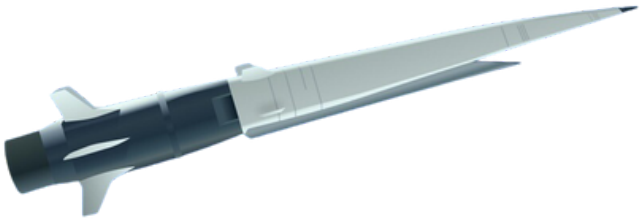
About AdFalciVax Vaccine

- It is India's first indigenous multi-stage malaria recombinant vaccine developed by the Regional Medical Research Centre (RMRC), Bhubaneswar, under the ICMR.

Key Feature of the Vaccine

- The vaccine is designed to prevent Plasmodium falciparum infection in individuals and reduce community transmission.
- Plasmodium falciparum is the deadliest malaria parasite, difficult to control and responsible for widespread devastation
- AdFalciVax targets the parasite before it enters the bloodstream, stopping the infection at the transmission stage
- The vaccine uses Lactococcus lactis, a genetically engineered food-grade bacterial host, as its core technology
- It delivers a dual-antigen approach combining: PfCSP (Plasmodium falciparum circumsporozoite protein) to prevent infection and Pfs230 and Pfs48/45 fusion proteins to block transmission from humans to mosquitoes
- This dual-antigen approach makes AdFalciVax a multi-functional vaccine, aimed at both protecting individuals and halting the spread of malaria.
- Pre-clinical validation was carried out in collaboration with ICMR–National Institute of Malaria Research (ICMR-NIMR)and National Institute of Immunology (NII), Delhi, under the Department of Biotechnology.

Zircon Missile



Russia recently said that it had fired a Zircon (Tsirkon) hypersonic cruise missile at a target in the Barents Sea.

About Zircon Missile

- The 3M22 Zircon (Tsirkon), NATO code-named SS-N-33, is a scramjet-powered hypersonic cruise missile developed by Russia.
- Initially designed to target naval assets, the missile has evolved to include land-attack capabilities, making it an important tool for precision strike missions.
- It entered service in 2022, with initial deployments on Project 22350 Admiral Gorshkov-class frigates.

Zircon Missile Features

- It has an estimated length of 9 meters (30 feet) and a diameter of 60 cm (24 inches), with an estimated weight of between 3,000 and 4,000 kg (3–4 tons).
- The missile is powered by a two-stage propulsion system.
- The first stage consists of a booster engine powered by solid fuel, which accelerates the missile to supersonic speeds.
- After reaching a certain speed, the scramjet engine in the second stage ignites, utilizing liquid fuel to accelerate the missile to hypersonic speeds.
- Its speed—reaching up to Mach 9—makes it extremely difficult to intercept.
- The operational range of the Zircon is reported to be around 400–450 km (250–280 miles) at low altitudes, while it can extend up to 1,000 km (620 miles) in a semi-ballistic trajectory.
- It is capable of carrying both conventional and nuclear warheads, providing it with a versatile role in modern warfare.
- The missile uses a combination of inertial navigation, radar homing, and plasma stealth to navigate towards its target.
- One of the key features of the Zircon is its ability to generate a plasma cloud during hypersonic flight, which absorbs radio waves and makes the missile more difficult to detect by radar. This phenomenon is known as plasma stealth.

Polypropylene

Recently, the Prime Minister of India laid the foundation stone for a polypropylene (PP) plant at Numaligarh Refinery Limited (NRL) at Golaghat in Assam.

About Polypropylene

- It is a thermoplastic polymer produced by the addition polymerization of propylene.
- It is a synthetic resin built up by the polymerization of propylene.
- It is one of the important families of polyolefin resins.
- Polypropylene is molded or extruded into many plastic products in which toughness, flexibility, light weight, and heat resistance are required.

Properties of Polypropylene

- It is highly resistant to chemical corrosion, making it an excellent choice for packaging of cleaning products and bleaches.
- It is a commodity plastic with low density and high heat resistance.
- Flammability: PP is a highly flammable material.
- Density: PP is one of the lightest polymers among all commodity plastics.

Application of Polypropylene

- It is widely used in polymer materials in the plastic manufacturing industry to produce various end products, especially plastic packaging.
- Polypropylene has high insulation properties too, making it safe to use for plastic casing in electrical goods and cables.
- It offers impressive chemical and biological-resistant properties and makes polypropylene an obvious choice for the medical industry.

Ion Chromatography

Scientists recently devised a way to perform ion chromatography in the field.

About Ion Chromatography

- Ion chromatography (IC), or ion exchange chromatography, is a powerful analytical technique used to separate and quantify ions in a sample.
- It separates charged molecules based on their affinity to the ion-exchange resin.
- Ion chromatography techniques of various types enable scientists to target specific ions or classes of ions, providing precise and sensitive analysis.
- It is of two types: cation exchange and anion exchange.
- Ion chromatographs are able to measure concentrations of major anions, such as fluoride, chloride, nitrate, nitrite, and sulfate, as well as major cations, such as lithium, sodium, ammonium, potassium, calcium, and magnesium, in the parts-per-billion (ppb) range.
- Concentrations of organic acids can also be measured through ion chromatography.

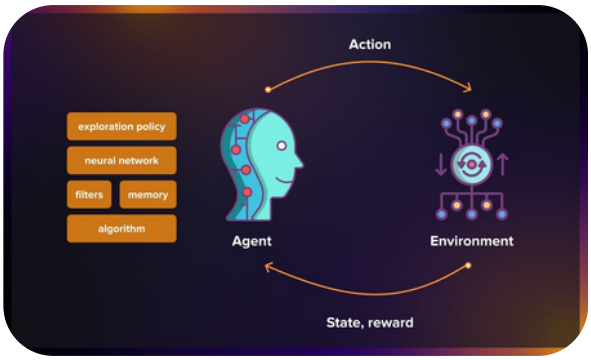
How Does Ion Chromatography Work?

- Ion chromatography, a form of liquid chromatography, measures concentrations of ionic species by separating them based on their interaction with a resin.
- Ionic species separate differently depending on species type and size.
- Sample solutions pass through a pressurized chromatographic column where ions are absorbed by column constituents.
- As an ion extraction liquid, known as eluent, runs through the column, the absorbed ions begin separating from the column.
- The retention time of different species determines the ionic concentrations in the sample.

Ion Chromatography Applications

- Drinking water analysis for pollution and other constituents.
- Determination of water chemistries in aquatic ecosystems.
- Determination of sugar and salt content in foods.
- Isolation of select proteins.

Reinforcement Learning (RL)



In a paper published recently, the DeepSeek-AI team reported that their model, called just R1, could develop new forms of reasoning using reinforcement learning, a method of trial and error guided only by rewards for correct answers.

About Reinforcement Learning

- It is defined as a sub-field of machine learning (ML) that enables AI-based systems to take actions in a dynamic environment through trial and error methods to maximize the collective rewards based on the feedback generated for respective actions.
- In RL, an autonomous agent learns to perform a task by trial and error in the absence of any guidance from a human user.
- RL algorithms use a reward-and-punishment paradigm as they process data.
- RL is based on the hypothesis that all goals can be described by the maximization of expected cumulative reward.
- The RL agent learns about a problem by interacting with its environment. The environment provides information on its current state.
- The agent then uses that information to determine which actions(s) to take.
- If that action obtains a reward signal from the surrounding environment, the agent is encouraged to take that action again when in a similar future state.
- This process repeats for every new state thereafter.
- Over time, the agent learns from rewards and punishments to take actions within the environment that meet a specified goal.
- The learning process in RL is driven by a feedback loop that consists of four key elements:
  - Agent: The learner and decision-maker in the system.
  - Environment: The external world the agent interacts with.
  - Actions: The choices the agent can make at each step.
  - Rewards: The feedback the agent receives after taking an action, indicating the desirability of the outcome.
- It particularly addresses sequential decision-making problems in uncertain environments and shows promise in artificial intelligence development.

Fentanyl

The United States recently revoked and denied visas to "certain business executives and corporate leadership" from India for their alleged involvement in trafficking fentanyl precursor chemicals.

About Fentanyl

- It is a potent synthetic opioid like morphine or heroin.
- It is both a prescribed drug and a drug that is at times made and used illegally.
- It is made entirely in laboratories, with no natural ingredients.
- It was developed as a prescription medicine for treating severe pain, such as pain after surgery.
- When used as prescribed, it is also very effective in treating cancer pain or other types of severe chronic pain that don't respond to other pain medicines.
- It is also used with other medicines just before or during an operation to help the anesthetic (numbing medicine) work better.
- It is approximately 100 times more potent than morphine and 50 times more potent than heroin as an analgesic.
- It acts in the central nervous system (CNS) or brain to relieve pain.
- Some of its side effects are also caused by actions in the CNS, such as drowsiness or dizziness.
- Fentanyl is addictive. Like other opioids, repeated use causes changes in brain activity that cause people to continue using it even when they experience harmful effects.
- Fentanyl is cheap for drug dealers to make into a street drug, compared to other opioids, but it is more powerful.
- Because only a few grains is enough to kill, fentanyl is causing high rates of overdose and overdose deaths.

What are Opioids?

- The term "opioids" includes compounds that are extracted from the poppy plant (Papaver somniferum) as well as semisynthetic and synthetic compounds with similar properties that can interact with opioid receptors in the brain.
- Opioids are commonly used for the treatment of pain and include medicines such as morphine, fentanyl, and tramadol.
- Their non-medical use, prolonged use, misuse, and use without medical supervision can lead to opioid dependence and other health problems.
- Due to their pharmacological effects, opioids can cause breathing difficulties, and opioid overdose can lead to death.
- Apart from fentanyl, other well-known opioids include oxycodone, morphine, codeine, and heroin.

INS Rajali

The Indian Navy's Eastern Naval Command recently hosted a two-day seminar on long-range maritime reconnaissance (LRMR) at INS Rajali, Arakkonam, underscoring India's growing maritime responsibilities and surveillance capabilities.

About INS Rajali

- It is an Indian Naval Air Station located near Arakkonam in Tamil Nadu.
- It was commissioned on March 11, 1992.
- It was named as 'Rajali', named after an aggressive bird of the Hawk family, predominant in the Tamil Nadu coastal belt.
- The air station is spread over 2,200 acres and is located 80 km west of Chennai.
- INS Rajali is the most modern and largest Naval Air Station, with a garrison strength of 4,700 personnel.
- It contributes towards two very distinct tasks -Operations and Training.
- It operates under the Eastern Naval Command of the Indian Navy and has the longest military runway in Asia.
- It is home to the navy's INAS 312 squadron which has been at the forefront of maritime reconnaissance and anti-submarine warfare with the P8I.
- Apart from hosting the P8I fleet, it also operates MQ-9B Sea Guardian drones, providing a technological edge for high-endurance operations in the vast expanses of the Indian Ocean.
- INS Rajali is also home to the navy's Helicopter Training School.

Aflatoxin

Exporters are disputing Indonesia's delayed notification of aflatoxins in groundnut shipments from India.

About Aflatoxin

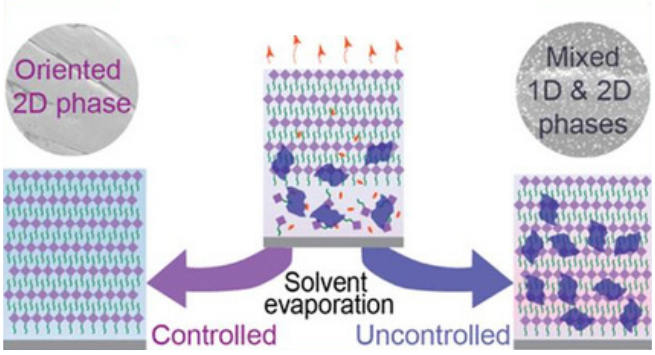
- Aflatoxins are a toxic chemical (a mycotoxin) produced by fungi.
- The mould-like fungi that produce aflatoxins belong to a large group called Aspergillus (It is produced mainly by Aspergillus flavus and Aspergillus parasiticus fungi).
- Aspergillus flavus and Aspergillus parasiticus thrive mainly in agricultural crops but also in soils, rotting food and compost.
- The fungi emerge as spores and form networks of microscopic filaments that can grow on products such as grains and nuts.
- These fungi contaminate groundnuts in warm, humid conditions.
- It can occur in foods such as groundnuts, tree nuts, maize, rice, figs and other dried foods, spices, crude vegetable oils and cocoa beans, as a result of fungal contamination before and after harvest.
- Health Impacts: This toxin is reported to be genotoxic, carcinogenic, and pose risks to human and animal health.

How are people Exposed to Aflatoxins?

- People can be exposed to aflatoxins by eating contaminated plant products (such as peanuts) or by consuming meat or dairy products from animals that ate contaminated feed.
- Farmers and other agricultural workers may be exposed by inhaling dust generated during the handling and processing of contaminated crops and feeds.

Chirality

Recent work by researchers has provided critical insights into how chiral perovskite materials crystallize, unlocking the possibility of building high-performance devices with phase-pure chiral perovskite films.



About Chirality

- It is the property of an object being non-superimposable on its mirror image.
- It is found everywhere in nature, from spiral galaxies to the DNA in our cells.

Chirality's Role in Material Science

- In materials science, chirality can enable unique light–matter interactions, such as controlling the spin of electrons or detecting circularly polarized light.
- These capabilities help futuristic technologies in quantum optoelectronics, advanced sensors, and spin-based computing.
- Example: Chiral materials can distinguish between left- and right-handed circularly polarized light and influence electron spin.
- Applications: Chirality is relevant for building devices such as circularly polarized light (CPL) detectors, spintronic components, and neuromorphic photonic synapses.

Why are Perovskites Game-Changers?

- Traditionally, most chiral materials studied have been organic in nature.
- These organic materials can interact with light effectively, but their poor electrical conductivity has limited their role in optoelectronic devices.
- On the other hand Halide perovskites bring together strong optical properties with efficient charge transport.
- When combined with chiral molecules, these low-dimensional halide perovskites can yield chiral perovskites that are both functionally versatile and structurally robust.
- Challenges: Making high-quality chiral perovskite films for devices requires precise control over how they crystallize – something that has remained poorly understood.

Iridogorgia Chewbacca

Scientists have discovered a unique deep-sea coral and given it the name Iridogorgia Chewbacca.

About Iridogorgia Chewbacca

- It is a new deep-sea coral species belonging to genus Iridogorgia.
- The coral was discovered in the tropical western Pacific Ocean.
- The new coral was first seen in waters off Moloka'i in 2006 and later near the Mariana Trench in 2016.
- It is named after the furry Star Wars fictional character Chewbacca because of its hairy-looking branches.

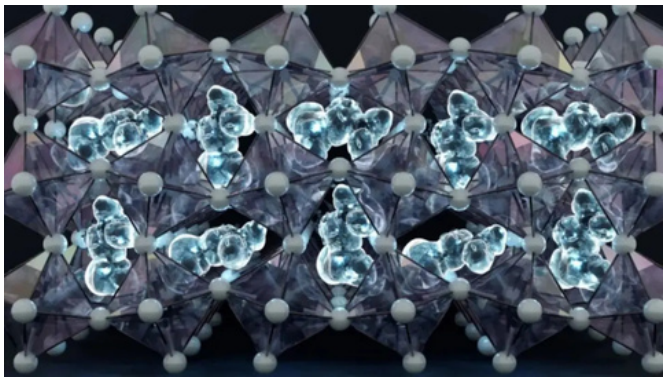
Features of Iridogorgia Chewbacca

- The species belongs to the genus Iridogorgia, a group of deep-sea corals with long, spiraling structures.
- It is known for its long, flexible branches and shiny surface.
- Each coral colony is made up of thousands of tiny polyps, which work together to form the larger structure.
- Despite its large size and striking appearance, I. chewbacca usually occurs alone, scattered across deep-sea rocky bottoms.

What is a Coral?

- Corals are essentially animals, which are sessile, meaning they permanently attach themselves to the ocean floor.
- Corals share a symbiotic relationship with single-celled algae called zooxanthellae.
- The algae provide the coral with food and nutrients, which they make through photosynthesis, using the sun's light.
- They use their tiny tentacle-like hands to catch food from the water and sweep into their mouth.
- Each individual coral animal is known as a polyp and it lives in groups of hundreds to thousands of genetically identical polyps that form a 'colony'.

Perovskite Solar Cells

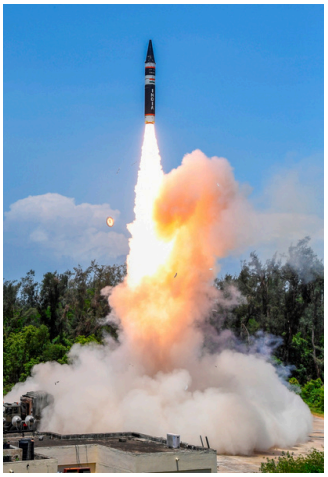


Swedish scientists at Chalmers University of Technology have used AI-enhanced simulations to solve the long-standing puzzle of halide perovskite instability.

About Perovskite Solar Cell (PSC)

- A Perovskite Solar Cell (PSC) is a type of thin-film photovoltaic device that uses perovskite-structured compounds (ABX_3) as the light-absorbing active layer.
- Perovskite Material:
- Named after the mineral calcium titanium oxide ($CaTiO_3$).
- General chemical formula: ABX_3, where 'A' and 'B' are cations and 'X' is an anion.
- In solar tech, it usually refers to metal halide perovskites: hybrid organic–inorganic compounds with a metal cation (Pb^{2+}, Sn^{2+}), halide anion (I^-, Br^-, Cl^-), and organic cation (methylammonium, formamidinium).
- Advantages:
- High power conversion efficiency (PCE) (over 25% in labs).
- Thin, lightweight, and flexible → can be applied on windows, buildings, smartphones, and vehicles.
- Low-cost fabrication compared to energy-intensive silicon processing.
- Potential use in tandem solar cells with silicon for even higher efficiency.
- Efficiency Potential: It is known for high light absorption, excellent charge transport, and bandgap tunability and also achieved power conversion efficiencies (PCEs) above 25%, comparable to silicon cells.

Agni-Prime Missile

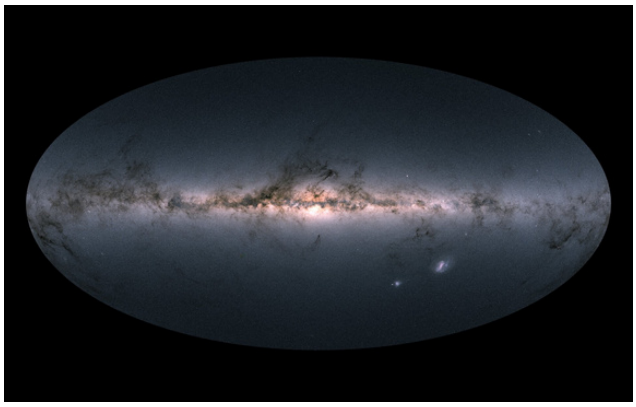


DRDO in collaboration with the Strategic Forces Command (SFC), has carried out the successful launch of Intermediate Range Agni-Prime Missile from a Rail based Mobile launcher system.

About Agni-Prime Missile

- Agni-P is a new generation nuclear-capable medium-range ballistic missile (MRBM).
- Agni Prime Ballistic Missile was tested for the first time in June 2021. It is lighter than any of the previous Agni missiles.
- Features of Agni-Prime Missile
  - It is a two-stage canisterised solid propellant ballistic missile.
  - This is a surface-to-surface ballistic missile
  - Range: 1000 to 2000 km.
  - Payload: Around 1,000 Kg (It can carry high explosive, thermobaric or nuclear warheads).
  - It incorporates upgrades such as propulsion systems, composite rocket motor casings, and advanced navigation and guidance systems.
  - Agni-Prime may be launched by train or road and stored for an extended period of time.
- Thus far, only Russia, the US, China, and possibly North Korea had the capability of launching long range ballistic missiles from rail-based platforms.
- Rail-based mobile launcher is a first-of-its-kind capability for India.
- This launcher can seamlessly move across the rail network without any preconditions and offers cross-country mobility.
- It is designed to deliver a quick reaction time, operate with reduced visibility, and is self-sustained with independent launch features
- It also comes fitted with advanced communication systems and robust protection mechanisms, ensuring reliability even in high-threat environments.

Gaia Telescope 3D Map



Recently, a new 3D map created using data from the Gaia Telescope shows stellar nurseries (star-forming regions) within 4,000 light-years of the Sun in all directions.

Latest Development

- This is the most detailed chart of glowing hydrogen gas clouds, helping scientists understand how stars form and the dynamics of turbulent interstellar gas.
- The study integrates Gaia dust maps with the radiation impact of 87 massive O-type stars, which emit intense ultraviolet light capable of ionising hydrogen gas.
- The resulting simulation shows glowing hydrogen clouds, aligning closely with older hydrogen emission maps, but with much higher precision.

About the GAIA Mission

- Full name: Originally Global Astrometric Interferometer for Astrophysics (GAIA), simplified to Gaia.
- Launch Year: 2013, by the European Space Agency (ESA).
- Objective: To create the most precise 3D map of the Milky Way Galaxy through astrometry (measurement of star positions, distances, and movements).
- Position: Located at Lagrange Point 2 (L2), about 1.5 million km from Earth, providing a stable and unobstructed cosmic view.

Structure and Instruments

- Twin Telescopes: Capture light from two directions simultaneously.
- Digital camera: Contains nearly 1 billion pixels, making it the largest camera ever flown in space.
- Three Main Instruments:
- Astrometer – Measures precise positions of celestial objects.
- Photometer – Determines the brightness and temperature of stars.
- Spectrometer – Identifies chemical composition and radial motion of stars.

Hanle Dark Sky Reserve

The Hanle Dark Sky Reserve (HDSR) in Ladakh recently hosted its third annual Star Party.

About Hanle Dark Sky Reserve (HDSR)

- The Hanle Dark Sky Reserve (HDSR) was notified in December 2022 by the Government of Ladakh.
- It is India's first International Dark Sky Reserve, centred around the Indian Astronomical Observatory (IAO) at Hanle, managed by the Indian Institute of Astrophysics (IIA) under the Department of Science and Technology (DST).
- The Reserve is a science-driven socio-economic development project, built on two pillars:
- Curtailing light pollution in the region.
- Promoting astro-tourism for local livelihood generation.
- It is part of the Changthang Wildlife Sanctuary, located at 4,500 metres altitude, offering Bortle-1 dark skies (the darkest category).
- The UT Ladakh administration supports the project by funding astro-tourism initiatives and light management plans.
- The event was jointly organised by the Indian Institute of Astrophysics (IIA), the Department of Wildlife Protection of UT Ladakh, and the Bhabha Atomic Research Centre (BARC).

What is a Dark Sky Reserve?

- Defined by the International Dark Sky Association (IDSA) as a large land area (at least 700 km^2) with exceptionally dark skies, protected for scientific, cultural, natural, and public enjoyment.
- Requires:
- A core area free from light pollution.
- A surrounding buffer area to protect core values.
- A Lighting Management Plan (LMP) covering at least 80% population and area.
- Regular annual reporting to IDSA.

Ethambutol Hydrochloride

India recently launched an anti-dumping investigation on imports of tuberculosis drug Ethambutol Hydrochloride from China and Thailand.

About Ethambutol Hydrochloride

- It is an antibacterial prescription medicine used for the treatment of tuberculosis (TB).
- It is a synthetic, water soluble, heat stable compound.
- It is specifically effective against actively growing microorganisms of the genus Mycobacterium including M. tuberculosis.
- It is used to combat both pulmonary and extrapulmonary tuberculosis.
- Mechanism:
  - Ethambutol (HCl) specifically targets the synthesis of the cell wall in M. tuberculosis.
  - By interfering with the polymerization of arabinogalactan, a key component of the mycobacterial cell wall, Ethambutol disrupts the structural integrity of the bacteria, leading to its demise.
  - Its unique mode of action is fundamental in combination therapies, where it is often used in conjunction with other anti-tubercular drugs to prevent resistance and enhance efficacy.
- Resistance to ethambutol emerges rapidly when the drug is used alone. Therefore ethambutol is always given in combination with other antituberculosis drugs.

AstroSat

Recently, India's first dedicated Space Astronomy Observatory, AstroSat completed a decade of operations.

About AstroSat

- It is the first dedicated Indian astronomy mission.
- It was launched by PSLV-C30 (XL) rocket from Satish Dhawan Space Centre in Sriharikota on September 28, 2015.
- The minimum useful life of the AstroSat mission was around 5 years but still it is providing valuable information.
- It was designed to observe the universe in the Visible, Ultraviolet, low and high energy X-ray regions of the electromagnetic spectrum simultaneously with the help of its five payloads.
- Payloads of Astrosat: Ultra Violet Imaging Telescope (UVIT), Large Area X-ray Proportional Counter (LAXPC), Cadmium–Zinc–Telluride Imager (CZTI), Soft X-ray Telescope (SXT) and Scanning Sky Monitor (SSM).
- The spacecraft control center at Mission Operations Complex (MOX) of ISRO Telemetry, Tracking and Command Network (ISTRAC), Bengaluru, manages the satellite during its entire mission life.

Objectives of Astrosat

- To understand high energy processes in binary star systems containing neutron stars and black holes.
- Estimate magnetic fields of neutron stars.
- Study star birth regions and high energy processes in star systems lying beyond our galaxy.
- Detect new briefly bright X-ray sources in the sky.
- Perform a limited deep field survey of the Universe in the Ultraviolet region.

Karma Puja

The Prime Minister of India wished all fellow countrymen, especially the tribal community on the occasion of Karma Puja.

About Karma Puja

- It is also called Karam and Karam Parab - is one of the most important tribal festivals in India.
- It is related to the harvest and a tribute to the Karam tree. (Karam tree symbolises fertility, prosperity and everything that is auspicious).
- It is celebrated primarily in Jharkhand, Chhattisgarh, Odisha, Bihar, Madhya Pradesh, West Bengal, and Assam.
- It is popular especially among the Munda, Ho, Oraon, Baiga, Kharia, and Santhal peoples.
- It is traditionally celebrated on the Ekadashi tithi (eleventh day) which corresponds to August-September in the Gregorian calendar.
- How is it celebrated?
  - About a week prior to the festival, young women bring clear sand from the river and sow seven types of grains.
  - A Karam tree branch is planted in the courtyard or 'akhra' on the festival day.
  - Devotees come with jawa (hibiscus) flowers, and the pahan (priest) worships the Karam Raja. Dancing and singing of traditional Karam songs follow.
  - The festival concludes with the immersion of the Karam branch in a river or pond, and the jawa is distributed among the devotees.
  - At the end of the Karam festival, branches from sal or bhelua trees are often planted in the fields with the hope that the Karam Raja/ Devta will protect their crops.

Apatani Tribes

The Apatani tribal women of Ziro Valley in Arunachal Pradesh are known for their facial tattoos and wooden nose plugs; banned in the 1970s, but still carried by only older women.

About Apatani Tribe

- The Apatani, or Tanw, also known by Apa and Apa Tani, are a tribal group of people living in the Ziro valley in Arunachal Pradesh.
- Language: They speak a local language called Tani and worship the sun and the moon.

Customs and Lifestyle of Apatani Tribe

- Festivals: They have major festivals like Dree, Myoko, Yapung and Murung.
- Dree is celebrated with prayers for a bumper harvest and prosperity of all humankind and Myoka celebrates friendship similar to modern friendship day.
- Tattooing and Nose plug: Apatani women are known for their distinctive facial tattoos and nose plugs — a tradition that began as a means of protection against abduction.
- The nose plugs, called Yaping Hullo, are made from wood found in the forest.
- The tattoos, known as Tippei, are done by the elder women when an Apatani girl is about 10 years old.
- They have been practising integrated rice-fish farming in their mountain terraces of Arunachal Pradesh since the 1960s.
- These tribal people principally use three rice varieties: Emeo, Pyape and Mypia.

Bhil Tribe

A translated collection of folk tales of the Bhil tribe in Madhya Pradesh will be made available on the Ministry of Tribal Affairs' Adi Vaani website and the app.

About Bhil Tribe

- Bhils are considered as one of the oldest tribes in India and identified as one of the Dravidian racial tribes of Western India and belong to the Australoid group of tribes.
- They are the most widely distributed tribal groups in India.
- The name 'Bhil' is derived from the word villu or billu, which according to the Dravidian language is known as Bow.
- Occupation: Nearly all of the Bhil engage in agriculture, some using the slash-and-burn (jhum) method but most employing the plow.
- Language: They speak Bhili (blend of Gujarati and Marathi), which is an Indo Aryan language.

Distribution of Bhil Tribe

- They are mainly divided into two main groups: the central and eastern or Rajput Bhils.
- The central Bhils are found in the mountain regions in the Indian states of Madhya Pradesh, Maharashtra, Gujarat and Rajasthan.
- Bhils are also found in the north eastern parts of Tripura.

Beliefs and Customs of Bhil Tribe

- Almost all Bhils practice ethnic religions that have been highly influenced by Hinduism.
- Most of them worship local deities like Khandoba, Kanhoba, Bahiroba, and Sitalmata. Some worship the Tiger God called 'vaghdev'.
- Main festivals: The Baneshwar fair is the main festival celebrated among the Bhils. This fair is held during the period of Shivratri and is dedicated to Baneshwar Mahadev also known as Lord Shiva.

Langkhun Festival

Recently, Tiwa tribesmen celebrated the Langkhun festival in Umsowai village in Karbi Anglong district of Assam.

About Langkhun Festival

- It is a socio-religious event celebrated by the Tiwa community in Assam.
- During this festival the people pray for a good crop in the upcoming Rabi crop season.
- The members of the community make offerings and pray to the gods for a good harvest during this festival.
- Cultural events including music and dance are also part of the event.
- Significance: The Tiwa Langkhun festival has great cultural significance and the community prays for a good harvest

Key Facts about Tiwa Tribe

- The Tiwa people are also called Lalung and they live in Assam and Megalahaya states in northeastern India.
- There are Hill Tiwas and Plains Tiwas.
- Hill Tiwas: They live in the Karbi Anglong District of Assam and in Megalahaya. They speak a Tibeto Burman language.
- Plains Tiwas: They live in the southern bank of the Brahmaputra Valley. They speak Assamese.
- Society: They have a matrilineal system of society where a Tiwa boy goes to a girl to marry her. This system is called "Kobea Liwa."
- The main festivals of Tiwa tribes are: Tiwa Bihu, Jon Beel Mela, Sagramisawa, Langkhunpuja etc.

Bonda Tribe

The Odisha Governor recently underscored the need for comprehensive development of Bondaghati, home to the Bonda tribe, a Particularly Vulnerable Tribal Group (PVTG).

About Bonda Tribe

- The Bondas are exclusively found in the Malkangiri district of Odisha and are mostly concentrated in the Khairaput block of the district.
- It is a particularly vulnerable tribal group (PVTG) and one of the oldest tribes of India.
- They are also known as Bondo, Bondas, Bonda Paraja, and Bhonda.
- They are considered one of the first settlers in India, with their lineage tracing back to the Austroasiatic race.
- Language:
  - The Bonda people speak Remo, a language belonging to the Austroasiatic linguistic family.
  - This is distinct from mainstream Indian languages, making it difficult for outsiders to communicate with them.
- The Bondas are divided into two groups because of their distinct cultural practices:
  - The Lower Bondas, who live in the Malkangiri district in south Odisha and border Andhra Pradesh and Chhattisgarh, and
  - The Upper Bondas, who live in the remote villages of the district's hilly terrain.
- The social organization is hierarchical, with a council of elders that makes important decisions for the community, ensuring the transmission of their traditions and cultural norms.
- The Bonda people live in small villages organized around communal spaces where ceremonies and meetings take place.
- Bonda architecture is characterized by mud and thatched roof houses, designed to adapt to the mountainous environment and climatic conditions.
- The art of the Bonda is expressed mainly through the creation of decorative tools and utensils, in addition to their colorful fabrics and jewelry.
- They have an interesting dressing style – ladies are semiclad and wear different sorts of rings and pieces of jewelry around their bodies, while the men convey deadly attires.
- Religion: The religion of the Bonda people is animistic, focused on the worship of nature and ancestral spirits.
- Occupation: Their economy is based mainly on subsistence agriculture, hunting, and gathering.
- Only 6% of Bondas are literate. The life expectancy of the tribe is so low they are nearly extinct.

Ho Tribe

Recently, adivasis from the Ho tribe staged a protest in Jharkhand's West Singhbhum district against district administration for interfering in their traditional self-governance system called Manki- Munda system.

About Ho Tribe

- The Ho or Kolha people are an Austroasiatic Munda ethnic group of India.
- They call themselves the Ho, Hodoko and Horo, which mean 'human' in their own language.
- Distribution: They are mostly concentrated in the Kolhan region of Jharkhand, Odisha, West Bengal and Bihar.
- Language: Ho people speak the Ho language, an Austroasiatic language closely related to Mundari.
- Occupation: The majority of the Ho tribe is involved in agriculture, either as land owners or labourers, while others are engaged in mining.
- Women have higher status among the Ho than they do in most tribes.
- Most villages have a dedicated dancing ground, called akhra, usually consisting of a cleared space of hard ground under a spreading tree.
- Traditional Ho music incorporates native instruments including a dama (drum), dholak, dumeng (mandar), and the rutu (flute).

Belief system of Ho Tribe

- Over 90% of the Ho practices the indigenous religion Sarnaism.
- They have a village priest called a deuri.
- They have a spirit doctor called a deowa who makes sacrifices to these spirits and gods. Much of this happens in a sacred grove outside the village.

What is the Manki- Munda system?

- The Munda, or the head of the village, was responsible for resolving socio-political disputes at the village level.
- Each village had one Munda, appointed hereditarily.
- The Manki headed the pidh, which generally consists of 8 to 15 villages. If cases were not resolved by the Munda, they moved upwards to the Manki.
- The Manki and Munda had no responsibilities for revenue or land-related issues.
- The system was purely an internal, self-governing mechanism, with no sovereign authority outside or the concept of paying taxes.

Birhor Tribe

Around 550 residents, mostly belonging to the Birhor tribe, of Fulwariya hamlet in Koderma district would soon receive electricity supply, ending nearly eight decades of darkness.

About Birhor Tribe

- The Birhor are a forest-dependent semi-nomadic tribal community concentrated in the eastern central Indian state of Jharkhand.
- Some of them are also found in Chhattisgarh, Odisha, and West Bengal.
- The Birhor community is one of eight Particularly Vulnerable Tribal Groups (PVTGs) identified in Jharkhand.
- The term "Birhor" is derived from the words “Bi”, meaning “Jungle”, and “hor”, meaning “man”; thus, it means “the man living in Jungle” or “people of Jungle”.
- They belong to the Porto-Australoid stock.
- Religion: The Birhor follow a mixture of animism and Hinduism.

Birhor Tribe Language

- The Birhor tribes have their own language, known as Birhor, which belongs to the Munda group of languages of the Austroasiatic language family.
- Their language has similarities with the Santali, Mundari, and Ho languages.
- However, due to increased contact with other communities and the influence of mainstream languages, many Birhor people are bilingual or trilingual, with proficiency in Hindi, Bengali, or other regional languages.

Birhor Tribe Ethnology

- The Birhors are of short stature, with long heads, wavy hair, and broad nose.
- They claim they have descended from the Sun and believe that the Kharwars, who also trace their descent from the Sun, are their brothers.
- Ethnologically, they are akin to the Santals, Mundas, and Hos.

Birhor Tribe Society

- They typically live in small, close-knit communities, and their social organization is primarily based on kinship ties.
- The tribe is divided into several clans, and each clan has its own leader who plays a crucial role in resolving disputes and maintaining social harmony within the community.
- They live in small settlements in the forest or on the outskirts of villages.
- The temporary Birhor settlements are known as tandas or bands.
- These consist of at least half a dozen huts of conical shape, erected with leaves and branches.
- Birhor society is characterized by a strong sense of community, cooperation, and mutual support.

Birhor Tribe Economy

- The “primitive subsistence economy” of the Birhors has been based on nomadic gathering and hunting, particularly for monkeys.
- They make ropes out of the fibres of a particular species of vine, which they sell in the markets of the nearby agricultural people.
- Some of them have settled into stable agriculture.
- According to socio-economic standing, the Birhors are classified into two groups. While the wandering Birhors are called Uthlus, the settled Birhors are called Janghis.
- The Birhor tribe has a rich knowledge of traditional medicine and uses various medicinal plants found in the forest for treating common ailments.

Red Fort

A 'black crust' is forming on the walls of the Red Fort due to high levels of air pollution, a recent study has found.

About Red Fort

- The Red Fort, or Lal Qila, is a Mughal fort located in Delhi, India.
- Formerly known as Quila-e-Mubarak, or the Blessed Fort, the Red Fort lies along the banks of the river Yamuna, whose waters fed the moats surrounding the fort.
- It was built as the palace fort of Shahjahanabad – the new capital of the fifth Mughal Emperor of India, Shah Jahan.
- Shah Jahan constructed it in 1639. It was designed by architects Ustad Ahmad Lahauri and Ustad Hamid.
- Named for its massive enclosing walls of red sandstone, it is adjacent to an older fort, the Salimgarh, built by Islam Shah Suri in 1546, with which it forms the Red Fort Complex.
- The fort complex served as the residence of Mughal Emperors for nearly 200 years, until 1857.
- The fort was designated a UNESCO World Heritage site in 2007.
- From the fort each year on Independence Day (August 15), the Indian prime minister participates in a flag-raising ceremony and delivers a televised address to the country.

Red Fort Architecture

- The Red Fort's massive red sandstone walls, which stand 75 feet (23 metres) high, enclose a complex of palaces and entertainment halls, projecting balconies, baths and indoor canals, and geometrical gardens, as well as an ornate mosque.
- The planning of the palace is based on Islamic prototypes, but each pavilion reveals architectural elements typical of Mughal buildings, reflecting a fusion of Persian, Timurid, and Hindu traditions.
- The fort is octagonal, with the north-south axis longer than the east-west axis.
- Among the most famous structures of the complex are the Hall of Public Audience (Diwan-i-ʿAm), which has 60 red sandstone pillars supporting a flat roof, and the Hall of Private Audience (Diwan-i-Khas), which is smaller and has a pavilion of white marble.
- The marble, floral decorations, and double domes in the fort's buildings exemplify later Mughal architecture.
- It has 2 principal gates–Lahore Drawaza and Delhi Darwaza along its western and southern sides, respectively.

Moran Community

The Moran community in Assam has ramped up the pressure in their demand for Scheduled Tribe status.

About Moran Community

- The Moran is a lesser known community of Assam and mainly concentrated in the Tinsukia district and also residing in Arunachal Pradesh.
- It is said that prior to the advent of the Ahoms, the Morans had their own independent kingdom at Bengmara, which is the present day Tinsukia.
- Language: They had a common dialect of their own which was derived from the Bodo group of Tibeto-Burman linguistic family. Later they started using Assamese.

Religious Affiliation of Moran Community

- Morans are Vaishnava by religion and belong to the Moamoria Sect.
- They were introduced to Vaishnavism by Sri Aniruddha Deva, disciple of Sri Sankara Deva.
- Prior to their conversion to Vaishnavism were the followers of Shakta faith affiliated to the Kechaikhati Than, a shrine where the mother goddess is worshipped.
- Festivals: They celebrate Gasar Talar Bihu (Bihu dance performed under a tree) is very popular among the Moran tribe and Kheri is also celebrated.

Kurmi Community

Defying prohibitory orders, Kurmis began their rail blockade at various stations in Jharkhand recently to press demand for a ST status for the community and inclusion of the Kurmali language in the Eighth Schedule of the Constitution.

About Kurmi Community

- Kurmis, also known as Kunbi, are a Hindu farming caste in India and Nepal.
- The term "Kurmi" is believed to be derived from the Sanskrit word "Krishi," which means agriculture.
- They are mostly found in the lower regions of the Indo-Gangetic plains, especially southern regions of Awadh, eastern Uttar Pradesh and parts of Bihar.
- It is believed that the Kurmis were descendants of ancient Kshatriya warriors who practiced agriculture.
- There are several sub-groups within the Kurmi caste called gotras. Some common Kurmi gotras include Chandel, Chauhan, Solanki, Tomar, Baghel and Sengar.
- The Kurmis came to be known for their exceptional work ethic, superior tillage and manuring, and gender-neutral culture, bringing praise from Mughal and British administrators alike.
- The Kurmali language, primarily spoken by the Kurmi community in Bihar, Jharkhand, and Odisha, is part of the Indo-Aryan language family.
- Nowadays, Kurmis are placed in the Other Backward Class (OBC) category in most parts of India.
- However, Kurmis tend to believe that they have tribal roots and have long been demanding Scheduled Tribe (ST) status for their community and inclusion of the Kurmali language in the Eighth Schedule of the Constitution.

Sarcophagus

The first-ever scientific dating of a sarcophagus (terracotta coffin) found recently in Kilnamandi village in Tiruvannamalai district indicates that Tamil Nadu might have had trade contact with the north during the time of the Late Harappan civilisation.

About Sarcophagus

- Used to bury leaders and wealthy residents in ancient Egypt, Rome, and Greece, a sarcophagus is a coffin or a container to hold a coffin.
- They were intended to be displayed above ground, but they were sometimes entombed or placed in burial chambers.
- The word "sarcophagus" comes from ancient Greek words. Sarx means "flesh," and phagein means "to eat." So, "sarcophagus" literally means "flesh-eating."
- This name came from a special type of limestone that people believed could help bodies decompose quickly.
- First used in Ancient Egypt and Ancient Greece, the sarcophagus gradually became popular throughout the ancient world.
- The earliest stone sarcophagi were used by Egyptian pharaohs of the 3rd dynasty, which reigned from about 2686 to 2613 B.C.E.
- It carried over through the later years of European society, often used for high status members of the clergy, government, or aristocracy.
- Features:
- They differ in detail from one culture to another.
- They are almost always made of stone, limestone being the most popular, but sometimes of granite, sandstone, or marble.
- Sarcophagi were elaborately decorated with carvings, images, and writing, usually including the name of the person who died.
- Archaeological Significance:
- Sarcophagi are important artifacts for archaeologists and historians because they provide insights into the art, culture, and beliefs of the societies that created them.
- The carvings and inscriptions on sarcophagi often contain valuable historical information.
- Example: The most famous Egyptian sarcophagus is perhaps the golden sarcophagus of King Tutankhamun.

Tripura Sundari Temple

Recently, the Prime Minister of India inaugurated newly developed infrastructure and beautification works at the Tripura Sundari Temple complex at Udaipur in Tripura.

About Tripura Sundari Temple

- Location: It is located in the state of Tripura. (The name Tripura is believed to derive from Goddess Tripura Sundari).
- Built by: It was established in 1501 A.D. by Maharaja Dhanya Manikya of Tripura Kingdom
- It holds a distinguished place among the 51 Shakti Peethas of the subcontinent.
- It is fondly known as Matabari, is one of the most sacred landmarks of Northeast India. It is also revered as Kurma Pith, for its base shaped like the hump of a tortoise.

Architecture of Tripura Sundari Temple

- Its square plan and sloping roof echo the style of rural Bengal huts, blending local aesthetics with spiritual symbolism.
- Within the sanctum rest two idols—the principal deity, Goddess Tripura Sundari, and an idol, smaller in size, known as Chhoto-Ma or Goddess Chandi are worshipped.
- The smaller idol once held special significance for the Tripura kings, who carried it on hunting expeditions and into battles.
- It is celebrated as a symbol of syncretism, it unites Shaktism, Vaishnavism, and diverse communities, with Hindus, Muslims, and tribal groups all participating in its rituals.

Khoe-San

Recently, a new genetic study published in the Cell Press journal reveals that European colonisation strongly altered the genetic ancestry of the indigenous Khoe-San peoples of southern Africa.

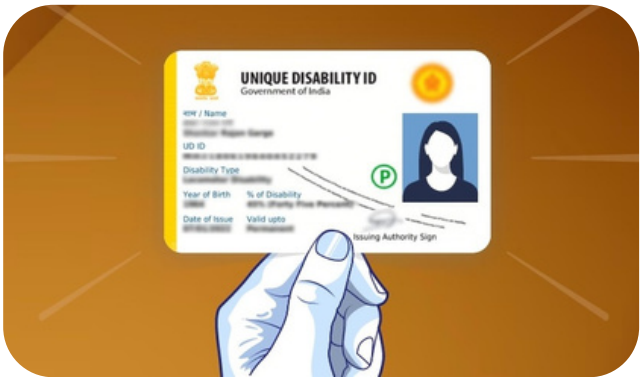
About Khoe-San

- Khoe-San is a collective term for the indigenous peoples of southern Africa, encompassing:
- San (Bushmen): Hunter-gatherers.
- Khoekhoe (Khoi): Cattle, goat, and sheep pastoralists.
- They represent one of the earliest divergent human lineages, with exceptionally high genetic diversity.
- The research highlights sex-biased migration, where European male settlers displaced Khoe-San men, while Khoe-San women contributed significantly to present-day genetic lineages.
- The study also shows the impact of the slave trade, where enslaved women from South Asia, Southeast Asia, Eastern Africa, and Madagascar were brought to the Cape by the Dutch East India Company (VOC).

Historical Interactions

- ~2,000 years ago: Eastern African pastoralists and Bantu-speaking agro-pastoralists arrived, influencing and displacing many Khoe-San groups.
- Last 1,500 years: Bantu-speaking groups largely replaced or assimilated Khoe-San populations in eastern South Africa.
- 1652 onwards: Dutch East India Company (VOC) established Cape Town; European settlers arrived in waves over 250 years.
- Slave Trade (1652–1808): VOC enslaved ~63,000 people from Africa and Asia, mostly women, reshaping genetic ancestry.
- Indigenous Khoe-San were also recruited as labourers.

Unique Disability ID (UDID) Card



Less than 40% of India's projected population of Persons with Disabilities (PwDs) have been issued a Unique Disability ID (UDID) Card, which enables access to government benefits, data show.

About Unique Disability ID (UDID) Card

- A UDID card is a single document of identification for Persons with Disabilities (PwDs).
- It is the universal ID that is accepted all across the country.
- As per the Rights of Persons with Disabilities (RPwD) Act, 2016, UDID cards can be issued by home district hospitals as well as the hospital where the PwD is taking medical treatment.
- The UDID card has a total of 18 digits/characters.
- The first 2 characters represent State Code, the next 2 digits for the district code, the next 1 digit for the CMO code, the next 2 digits for disability type, the next 4 digits for year of birth of PwD, the following 6 digits for running number, and the last digit for check sum which is involved for security reasons.
- Three types of colour-based UDID Cards are issued based on the severity of the disability:
- White Card: When the disability percentage of a PwD is below 40%.
- Yellow Card: When the disability percentage of a PwD is above 40% but on or below 80%
- Blue Card: When the disability percentage of a PwD is above 80%.

Unique ID for Persons with Disabilities Project

- The UDID Project is initiated by the Department of Empowerment of Persons with Disabilities, Ministry of Social Justice & Empowerment.
- It is being implemented to create a national database of PwDs and issue a Unique Disability Identity Card (UDID) to each individual.
- It also aids in tracking the physical and financial progress of beneficiaries across various administrative levels — village, block, district, state, and national.
- It aims to build a comprehensive end-to-end system for issuing Universal IDs and Disability Certificates. This system includes:
- Nationwide availability of PwD data through a centralized web application.
    - Online application submission for Disability Certificate/UDID card (offline submissions are also allowed and digitized later).
    - Efficient assessment process by hospitals or Medical Boards to calculate disability percentage.
    - Elimination of duplicate PwD records.
    - Online renewal and update of information by or on behalf of PwDs.
    - Management Information System (MIS) reporting framework.
    - Integrated management of various government benefits/schemes for PwDs.
    - Support for additional disabilities in the future (currently 21 disabilities, subject to updates).

Global Peace Index 2025

Iceland has once again secured its position as the most peaceful country in the world, as per the 2025 Global Peace Index (GPI)

About Global Peace Index

- Produced by the Institute for Economics & Peace (IEP), the GPI is the world's leading measure of global peacefulness.
- It ranks 163 independent states and territories according to their level of peacefulness, covering 99.7 percent of the world's population.
- It uses 23 qualitative and quantitative indicators to measure the state of peace across three domains: the level of Societal Safety and Security; the extent of Ongoing Domestic and International Conflict; and the degree of Militarisation.

Highlights of Global Peace Index 2025

- It is the 19th edition of the GPI.
- It finds that global peacefulness continues to decline and that many of the leading factors that precede major conflicts are higher than they have been since the end of WWII.
- More countries are increasing their levels of militarisation.
- There are currently 59 active state-based conflicts, the most since the end of WWII and three more than the prior year.
- Last year, 17 countries recorded over 1,000 conflict deaths.
- Additionally, the successful resolution of conflicts is lower than at any point in the last 50 years.
- Conflicts that ended in a decisive victory fell from 49 percent in the 1970s to nine percent in the 2010s, while conflicts that ended through peace agreements fell from 23 percent to four percent over the same period.
- This year's results found that the average level of global peacefulness deteriorated by 0.36 percent.
- Iceland remains the most peaceful country in the world, a position it has held since 2008. It is joined at the top of the index by Ireland, Austria, New Zealand, and Switzerland.
- Russia, for the first time, is the least peaceful country in the world on the 2025 GPI, followed by Ukraine, Sudan, Democratic Republic of the Congo, and Yemen.
- Western and Central Europe is the most peaceful region in the world, home to eight of the ten most peaceful countries, although its peacefulness has been falling over the last four years.
- South America was the only region in the world to record an improvement in peacefulness last year.
- The Middle East and North Africa (MENA) region remains the world's least peaceful region.
- South Asia, the second least peaceful region globally, experienced the largest regional decline in peacefulness.
- India was ranked 115 on the GPI 2025, up one position from its 2024 spot.
- The most peaceful Asian countries were Singapore (6th), Japan (12th), Malaysia (13th), Bhutan (21st), and Mongolia (37th).

Innovations for Defence Excellence

Recently, the Innovations for Defence Excellence - Defence Innovation Organisation has inked an MoU with EdCIL (India) Limited to foster the development of dual-use cutting-edge technologies , driven by the new ASPIRE (Accelerating Strategic Progress in Research and Education) program.

About Innovations for Defence Excellence

- It is the flagship initiative launched in 2018 by the Ministry of Defence, Govt of India
- Objective: The objective of the scheme is to cultivate an innovation ecosystem in the Defence and Aerospace sector by collaborating with startups, innovators, MSMEs, incubators, and academia.
- Funding: It will be funded and managed by a 'Defence Innovation Organization (DIO)'
- Defence Innovation Organization has been formed as a 'not for profit' company as per the Companies Act 2013 for this purpose, by the two founder members. Defence Public Sector Undertakings (DPSUs) Hindustan Aeronautics Limited (HAL) and Bharat Electronics Limited (BEL).
- iDEX functions as the executive arm of DIO, carrying out all the required activities while DIO provides high level policy guidance to iDEX.
- It offers grants and support for R&D with significant potential for future adoption in Indian defence and aerospace
- It is currently engaged with over 650 start-ups and MSMEs.

MY Bharat

Union Minister of Sports and Youth Affairs stated that MY Bharat Aapda Mitras will be mobilised to provide rescue operations in the flood-affected areas of Punjab and Himachal Pradesh.

About MY Bharat

- It is an autonomous body that has been set up by the Department of Youth Affairs, Ministry of Youth Affairs and Sport.
- MY Bharat's digital platform provides equitable access to opportunities for youth to actualize their aspirations and build Viksit Bharat.
- It is meticulously designed to cater to the needs of the dynamic youth demographic, aged between 15 and 29 years.
- This platform offers a wealth of resources, mentorship programs, experiential learning opportunities, networks, and invaluable industry connections.

Key Facts about MY Bharat Aapda Mitras

- They are trained by the National Disaster Management Authority (NDMA) under the Aapda Mitra programme.
- Aapda Mitra programme is a unique initiative under MY Bharat, offering structured NDMA-certified disaster response training to young volunteers.
- It equips them with skills in search and rescue, first aid, crowd management, and emergency coordination, making them valuable assets during natural calamities.
- These youth volunteers will work at the grassroots to ensure that food, medical aid, and essential supplies reach villages cut off due to floods and landslides.

Niveshak Didi Initiative

Recently, the Investor Education and Protection Fund Authority (IEPFA) successfully launched Phase II of its flagship financial literacy initiative – Niveshak Didi at Hyderabad.

About Niveshak Didi Initiative

- Aim: The initiative is aimed at deepening financial awareness and empowering rural communities, particularly women.
- It is based on the ideology of women for women as rural area women feel more comfortable to share their queries with a female itself.
- Nodal Ministry: Ministry of Corporate Affairs
- Launched by: Investor Education and Protection Fund Authority
- Significance: It serves as a catalyst for bridging knowledge gaps and building confidence in communities.

Key Facts about Investor Education and Protection Fund Authority

- It was established in 2016 under the Companies Act, 2013.
- It empowers individuals to make informed financial choices and fosters a financially aware citizenry.
- Nodal Ministry: Ministry of Corporate Affairs

Functions of Investor Education and Protection Fund Authority

- It manages the Investor Education and Protection Fund (IEPF) and promotes investor awareness and financial protection.
- Make refunds of shares, unclaimed dividends, matured deposits/debentures etc. to investors and promote awareness among investors.
- It is dedicated to safeguarding investor interests by facilitating the return of unclaimed shares and dividends and advancing financial literacy nationwide.
- Initiatives: Niveshak Didi, Niveshak Panchayat, and Niveshak Shivir,

Kapas Kisan App

Recently, the Union Minister of Textiles launched a new mobile application Kapas Kisan app.

About Kapas Kisan App

- It is developed by the Cotton Corporation of India (CCI), under the Ministry of Textiles,

Features of Kapas Kisan App

- It facilitates seamless procurement of cotton from Farmers under the Minimum Support Price scheme.
- It empowers farmers with self-registration, slot booking and payment tracking.
- It provides facility of payment tracking by farmers - bringing greater transparency, convenience and speed to the cotton procurement process.
- It allows farmers to securely register themselves for selling cotton under MSP
- Digital scheduling at designated procurement centres to reduce waiting time and crowding, Real-time status updates on quality assessment, accepted quantities, payment processing User-friendly interface with support for multiple Indian languages.

Advantages of Kapas Kisan App

- Protect cotton farmers against any distress sales through assured MSP procurement,
- Reduce manual paperwork and save time at procurement centres.
- Enhances transparency and improves planning by allowing farmers to choose convenient time slots.

WHO Model Lists of Essential Medicines

Recently, the World Health Organization (WHO) released updated editions of its Model Lists of Essential Medicines (EML), adding new treatments for various types of cancer, diabetes, and obesity associated with comorbidities

About WHO Model Lists of Essential Medicines

- It acts like a register of minimum medicine needs for every health-care system.
- It is updated every two years by the Expert Committee on Selection and Use of Essential Medicines.
- History of the Essential Medicines List
- The first country in the world to compose its EML was Tanzania in 1970.
- Then in 1975, the World Health Assembly requested WHO to assist member states in selecting and procuring essential medicines, assuring good quality at reasonable cost.
- Subsequently, the first WHO model list of essential medicines was published in the year 1977 which contained 186 medicines.
- WHO selects essential medicines based on public health relevance, evidence of benefits and harms, and with consideration of costs, affordability and other relevant factors.
- Globally, over 150 countries have national essential medicines lists based on the WHO Model List.

What are Essential Medicines?

- As per the World Health Organisation (WHO), Essential Medicines are those that satisfy the priority health care needs of the population.
- The list is made with consideration to disease prevalence, efficacy, safety and comparative cost-effectiveness of the medicines.
- Such medicines are intended to be available in adequate amounts, in appropriate dosage forms and strengths with assured quality. They should be available in such a way that an individual or community can afford.

Combined Commanders' Conference (CCC) 2025

The Prime Minister will inaugurate the Combined Commanders' Conference (CCC) 2025 in Kolkata, West Bengal.

About Combined Commanders' Conference

- The CCC is the apex-level brainstorming forum of the Armed Forces, bringing together the nation's top civil and military leadership to exchange views at the conceptual and strategic levels.
- CCC 2025 will be held in Kolkata, West Bengal, from September 15 to 17, 2025.
- The central theme for this year's conference is "Year of Reforms – Transforming for the Future".
- The CCC 2025 will focus on Reforms, Transformation & Change and Operational Preparedness.
- Together, these reflect the Armed Forces' commitment to institutional reforms, deeper integration, and technological modernisation, while sustaining a high level of multi-domain operational readiness.
- The deliberations will seek to further strengthen the Armed Forces, which are agile and decisive in an increasingly complex geo-strategic landscape.
- Continuing with the tradition of inclusive engagement, the conference will feature interactive sessions with officers and personnel of various ranks from the Armed Forces, ensuring that field-level perspectives enrich the discussions at the highest level.
- The conference will also be attended by the Defence Minister, the National Security Adviser, the Minister of State for Defence, the Chief of Defence Staff, and the Defence Secretary.

Adi Sanskriti Platform

Recently, the Ministry of Tribal Affairs unveiled the Beta Version of Adi Sanskriti at Bharat Mandapam, New Delhi, during the National Conference on Adi Karmayogi Abhiyan.

About Adi Sanskriti Platform

- It is a pioneering digital learning platform for tribal artforms, preserving heritage, enabling livelihoods, and connecting India's tribal communities with the world,
- Objective
- It is envisioned as the world's first Digital University to preserve and promote the culture and traditional knowledge of tribal communities.
- It functions as an online marketplace for the world to access products made by tribal artisans.
- The platform integrates three major components:
- Adi Vishwavidyalaya (Digital Tribal Art Academy): It is currently offering 45 immersive courses on tribal dance, painting, crafts, music, and folklore.
- Adi Sampada (Socio-Cultural Repository): It is a collection of over 5,000 curated documents across five themes, covering paintings, dance, clothing & textiles, artefacts and livelihood.
- Adi Haat (Online marketplace): It is currently linked with TRIFED, this will evolve into a dedicated online marketplace for tribal artisans, enabling sustainable livelihoods and direct consumer access.
- It is being built in close partnership with State Tribal Research Institutes (TRIs).
- States involved in its first phase: TRIs from Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Rajasthan, Tamil Nadu, Telangana, and Uttar Pradesh.
- These states have contributed to the documentation, content curation, and digital mapping of tribal artforms.

INS Aravali

Recently, the Indian Navy commissioned its latest Naval Base, INS Aravali, at Gurugram.

About INS Aravali

- It is named after the Aravali mountain range.
- It is designed to strengthen the Navy's information and communication infrastructure.
- It is located at Gurugram, Haryana.
- Motto: It is guided by the motto 'Maritime Security through Collaboration'.
- It is designed to support naval information and communication centres that are critical to India's maritime security, command and control operations, and Maritime Domain Awareness (MDA).
- It embodies a spirit of cooperation with other naval units, MDA centres, and allied stakeholders.
- It marks a strategic step forward in the Navy's efforts to enhance situational awareness and inter-agency coordination across India's maritime domain.
- The emblem reflects the base's commitment to safeguarding India's maritime interests through constant readiness and innovation.
- It also fulfill the India's collaborative vision of MAHASAGAR, or Mutual and Holistic Advancement for Security and Growth Across Regions.
- Symbolism of the crest: It features a central mountain symbol, representing the steadfast strength of the Aravali range, and a rising sun, signifying eternal vigilance, resilience, and the dawn of advanced technological capabilities in communications and domain awareness.
- Strategic Role: It would strengthen India's role as the Preferred Security Partner in the Indian Ocean Region.

Fast Track Immigration-Trusted Traveller Programme

Recently, the Union Home Minister launched the Fast Track Immigration-Trusted Traveller Programme (FTI-TTP) at 5 more airports.

About Fast Track Immigration-Trusted Traveller Programme

- It is an initiative to speed up the Immigration clearance process for eligible persons from the following categories: Indian Nationals and Foreign Nationals holding OCI Cards.
- It was first launched at Delhi's IGI Airport in 2024.
- Purpose: It has been introduced with the purpose of facilitating international mobility with faster, smoother and secure immigration clearances.

FTI-TTP Enrollment Process

- The FTI-TTP has been implemented through an online portal, https://ftittp.mha.gov.in.
- To enroll in this program, applicants must register online on the portal by filling in their details and uploading the required documents.
- The biometrics of registered applicants are collected at the Foreigners Regional Registration Office (FRRO) or while passing through the airport.
- Immigration Clearance Process
  - Boarding Pass Scan: Registered travellers scan their boarding pass at the e-gates to retrieve flight details.
  - Passport Scan: The passport is scanned to confirm the traveller's identity.
  - Biometric Authentication: Biometrics is authenticated at the e-gates.
  - Automated Clearance: Once verified, the e-gate opens, completing the immigration process automatically.
  - Validity of Registration: It is valid until the passport's expiry or five years, whichever comes first, with an option for renewal.
  - Till now, this facility has been started at 13 airports across the country.
  - Nodal agency: The Bureau of Immigration, under the Ministry of Home Affairs, is the nodal agency responsible for implementing the programme.

AI-Based Weather Forecasting Program

The Ministry of Agriculture and Farmers' Welfare (MoAFW) launched AI-based monsoon forecasts via SMS (m-Kisan) to nearly 3.8 crore farmers across 13 states this year.

About AI-Based Weather Forecasting Program

- It was launched by the Ministry of Agriculture and Farmers' Welfare.
- Under this initiative AI-based monsoon forecasts were sent using the m-Kisan portal.
- This is the first-of-its-kind targeted dissemination of AI weather forecasts to date.
- These AI-based forecasts distributed by the MoAFW correctly identified 20 days' pause in monsoon progression.
- The government sent updated information to farmers every week until continuous rains arrived in their area.
- AI Models used
- The forecasts used were a blend of two open-access models—Google's Neural GCM and European Centre for Medium-Range Weather Forecasts' (ECMWF) Artificial Intelligence Forecasting Systems (AIFS).
- Significance: It centers specifically on the needs of farmers by providing tailored weather forecasts in easy to understand language and helps them make informed farming decisions.

What is m-Kisan Portal?

- It is a platform which provides web-based mobile advisory to farmers with the technological backstopping from Research Institutes and Agricultural Universities supporting farmers.
- It enables all Central and State government organizations in agriculture and allied sectors to provide information/services/advisories to farmers by SMS in their language, preference of agricultural practices and location.
- Through this portal messages are tailored to the farmer's language, location, and preferred practices, helping them stay updated on weather, crops, pest control, and government schemes.

PLI Scheme for White Goods

Recently, the government has re-opened the application window for the production-linked incentive (PLI) scheme for white goods.

About PLI Scheme for White Goods

- It is designed to create a complete component ecosystem for Air Conditioners and LED Lights Industry in India and make India an integral part of the global supply chains.
- It is implemented as a pan India scheme and is not specific to any location, area or segment of population.
- Objectives: It proposes a financial incentive to boost domestic manufacturing and attract large investments in the White Goods manufacturing value chain.
- Its prime objectives include removing sectoral disabilities, creating economies of scale, enhancing exports, creating a robust component ecosystem and employment generation.
- Incentives: The scheme will extend an incentive of 4-6% on incremental turnover over base year (2019-20) of goods sold in India and exported to global markets, to eligible companies for a period of 5 years.
- Eligibility
- Applicants can be any company that should be incorporated in India under the provisions of the Company Act, 2013.
- Eligibility shall be subject to the achievement of thresholds of net incremental sales of Eligible Products for the respective financial year over the base year and cumulative incremental investment in the preceding financial year.
- Any entity availing benefits under any other PLI Scheme of Govt. of India will not be eligible under this scheme for the same products.
- Duration : It is to be implemented over FY 2021-22 to FY 2028-29
- Nodal Ministry: The scheme was notified by the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.

Frontier 50 Initiative

Recently, the NITI Aayog launched the Frontier 50 Initiative to amplify grassroots adoption of technology and scale impact creation.

About Frontier 50 Initiative

- It will support 50 Aspirational Districts / Blocks to pick use cases from the Repository and deploy those frontier technologies that have potential to accelerate saturation of services across ADP/ABP themes.
- Launched by: NITI Aayog under its Frontier Tech Hub.
- The Frontier Tech Repository showcases 200+ impact stories from across India in four sectors – Agriculture, Healthcare, Education, and National Security.
- It brings to life how states and startups are deploying technology with the purpose to transform livelihoods.

What is NITI Frontier Tech Hub?

- It has been established to anticipate mega technology shifts and chart India's readiness to unlock their potential for inclusive growth, supply chain resilience, and national security.
- It convenes leading experts across government, industry, and academia to assess frontier technologies—such as AI, quantum, and biotechnology.
- It evaluates AI, quantum, and biotechnology opportunities and risks for India, and designs strategies to harness them for Viksit Bharat@2047.

Exercise Pacific Reach 2025

Indian Navy's latest indigenously designed and constructed Diving Support Vessel (DSV) INS Nistar is participating in Exercise Pacific Reach 2025 in Singapore.

About Exercise Pacific Reach 2025

- It is a multinational conducted in Singapore.
- It is a biennial exercise which will witness participation of more than 40 nations.
- The exercise is mainly conducted in two phases, including the harbour and sea phases.
- Focus of the Exercise: The harbour phase will involve in-depth discussions on submarine rescue systems, Subject Matter Expert Exchanges (SMEE), a medical symposium and cross-deck visits between the participating nations.
- The Sea phase of the exercise would witness INS Nistar and Submarine Rescue Unit (E) engaging in multiple intervention and rescue operations with participating assets in the South China Sea.

Key Facts about INS Nistar

- It was commissioned on 18 Jul 2025.
- It was developed by HSL, Visakhapatnam, under the Ministry of Defence's 'Aatmanirbhar Bharat' initiative.
- The ship with its Side Scan Sonar, Work & observation class ROVs and expansive deep sea diving systems will be carrying out the role of mothership (MoSHIP) for Deep Submergence Rescue Vehicle (DSRV).
- Diving and Rescue Capabilities
  - Integrated Saturation Diving System (ISDS): Enables diver deployment at depths up to 300 meters, supporting underwater repairs, salvage, and rescue operations.
  - Remotely Operated Vehicles (ROVs): These can be deployed for underwater surveillance and recovery missions in deep waters.
  - Side Scan Sonar and Integrated Platform Management System (IPMS): Aid in locating submerged vessels or wreckage and managing onboard systems, respectively.
  - Submarine Rescue System: Especially crucial for submarine emergencies, allowing the timely and safe recovery of personnel from disabled submarines.

Bima Sugam Portal

Recently, the Insurance Regulatory and Development Authority of India has officially announced the launch of the much-awaited Bima Sugam portal.

About Bima Sugam Portal

- It is a unified digital marketplace for insurance, designed to bring insurers, intermediaries, and customers onto a single platform.
- It is backed by the Life Insurance Council and the General Insurance Council (GIC).

Features of Bima Sugam Portal

- It helps users to buy, sell, service, renew, manage, and even claim insurance policies with ease and full transparency.
- This platform will serve as a centralised database to answer insurance-related queries and help consumers navigate the complex world of insurance.
- It also aims to accelerate the acceptance of new and sandbox products, opening the door for innovation in insurance offerings.
- It will cover life insurance in all its forms, including term plans, savings products, annuity and pension plans, as well as ULIP products.
- It also provides health insurance options, addressing the full range of medical and wellness needs.
- It will remain flexible to host any new insurance products that may be introduced in the future, as determined by the regulatory councils.
- It will leverage advanced digital technologies to automate and digitise processes for multiple stakeholders,

Clean Plant Programme

The Clean Plant Programme (CPP) which was approved by the Union Cabinet is gaining momentum in its implementation.

About Clean Plant Programme

- It was conceptualized by the Ministry of Agriculture & Farmers Welfare in collaboration with the Asian Development Bank.
- It was launched as a major initiative to provide farmers with access to high-quality, virus-free planting material of key fruit crops.
- Implemented by: It is implemented by the National Horticulture Board (NHB) in association with Indian Council of Agricultural Research (ICAR)
- Components of Clean Plant Programme
    - Establishment of Nine Clean Plant Centers (CPCs): These centres will offer disease diagnostics and treatments, develop mother plants for nurseries, and quarantine all domestic and imported planting materials intended for commercial propagation and distribution.
    - Infrastructure Development: This includes setting up large-scale nurseries to efficiently multiply clean planting material. The mother plants produced by the CPCs will be propagated in these nurseries and then distributed to farmers.
    - Regulatory and Certification Framework: A regulatory and certification process will be created to ensure complete accountability and traceability in the production and distribution of planting material.

FAO's Technical Cooperation Programme

Recently, the Ministry of Fisheries, Animal Husbandry and Dairying has signed a Technical Cooperation Programme (TCP) agreement with the Food and Agriculture Organization (FAO) to strengthen Blue Port infrastructure in India.

About FAO's Technical Cooperation Programme

- It was created to enable FAO to make its know-how and technical expertise available to member countries upon request.
- Purpose: To help countries improve their population's food security and alleviate poverty with lasting impact.
- Goal: To assist in solving technical problems in crop production, livestock, fisheries and aquaculture, forestry, nutrition, food safety, rural development and other areas identified in the Country Programming Framework (CPF).
- Funding: The Technical Cooperation Programme is part of FAO's Regular Programme budget. This means that TCP funds come directly from the dues paid by FAO members.
- The FAO's TCP programme on 'Strengthening of Blue Ports' intends:
- To assist the GoI to strengthen the fishing ports' technical capacities to address the main environmental, social and economic challenges that affect the aquatic value chain.
- Two pilot fishing ports Vanakbara (Diu) and Jakhau in Gujarat, will benefit from this TCP that will provide them with specific strategic and operational tools to identify and formulate investment projects.

Key Facts about Blue Ports framework

- Under framework, the DoF is leading the development of Smart and Integrated Fishing Harbours that combine technological innovation with environmental stewardship.
- Three pilot harbours namely Vanakbara (Diu), Karaikal (Puducherry), and Jakhau (Gujarat) have been approved.
- These modern harbours aim to revolutionize post-harvest fisheries infrastructure by Ensuring safer, cleaner, and more efficient operations for India's fishing communities.
- It is supported under the Pradhan Mantri Matsya Sampada Yojana and it involves
- Integrates smart technologies: Such as IoT devices, sensor networks, satellite communication, and data analytics to streamline harbour operations and enable real-time decision-making.
- Eco-friendly features: Rainwater harvesting, energy-efficient lighting, electric-powered equipment, and robust waste management systems etc.

SPARSH Pension System

Recently, System for Pension Administration – Raksha (SPARSH) has resolved legacy discrepancies—upto the extent of 5.60 lakh out of 6.43 lakh cases (87%).

About SPARSH Pension System

- It is an initiative of the Ministry of Defence, Government of India.
- SPARSH is world's largest pension system for defence personnel which aims to provide comprehensive solution to the defence pensioners
- Objective: Meeting the pension sanction and disbursement requirements for Armed Forces viz. Army, Navy, Air Force and Defence Civilians.
- It is administered by the Defence Accounts Department through the Principal Controller of Defence Accounts (Pensions), Prayagraj and shall cater to all the three Services and allied organisations.

Features of SPARSH Pension System

- Without relying on a third-party intermediary, this web-based system handles pension claims, and deposits pension payments into the bank accounts of defence pensioners.
- It is a centralized sanction, claim and pension disbursement system with easy validation and rectification of data through self-verification.
- It uses a digital process for pensioner identification, removing the requirement of multiple visits by pensioners to the pension offices.
- The defence pensioner will be given a completely transparent view of his pension account through this platform.
- It will capture and maintain a complete history of events and entitlements the pensioner right from the date of commencement of pension to the date of cessation of pension due to his/her last eligible beneficiary.
- The system would cater to all activities of the pension cycle namely
    - Initiation and Sanction
    - Disbursement
    - Revision
    - Service and Grievance Request Management

Maitri 2.0 Cross-Incubation Programme

Recently, the Indian Council of Agricultural Research (ICAR) launched the second edition of the Brazil–India Cross-Incubation Programme in Agritech (Maitri 2.0) at New Delhi.

About Maitri 2.0 Cross-Incubation Programme

- It is the second edition of the Brazil–India Cross-Incubation Programme in Agritech.
- It is a two-way learning platform for co-creation between Indian and Brazilian innovators to build a stronger, innovative, and inclusive agri-food ecosystem for global food security.
- It was launched by the Indian Council of Agricultural Research.
- The Maitri 2.0 programme aims to:
- Strengthen incubator linkages between India and Brazil.
- Promote co-incubation models and exchange of best practices.
- Open new opportunities in sustainable agriculture, digital technologies, and agri-value chains.
- Foster inclusive innovation ecosystems that directly benefit farmers.
- It reflects the broader Brazil–India strategic partnership, aligning with the leaders' shared vision for cooperation in agriculture, emerging technologies, and food and nutritional security.
- This initiative not only strengthens bilateral ties in agri-tech but also positions both nations as leading voices in global discussions on sustainable agriculture and climate resilience.

Jal Sanchay Jan Bhagidari Initiative

Bidar district of Karnataka has emerged as a winner of the Centre's Jal Sanchay Jan Bhagidari Award given to top performing districts under the campaign, Jal Shakti Abhiyan: Catch the Rain.

About Jal Sanchay Jan Bhagidari Initiative

- It was launched in 2024.
- Aim: The initiative aims to enhance water recharge through rainwater harvesting/aquifer recharge/borewell recharge/ recharge shafts etc.
- Objective: To ensure that every drop of water is conserved through collective efforts, following a whole-of-society and whole-of-government approach.
- It is designed to foster active participation from all stakeholders, including government agencies, local communities, industries, NGOs and resident welfare associations.
- The initiative will ensure
- Boost in Groundwater Levels: Capture and store rainwater and surface runoff to stabilize and increase groundwater levels,
- Promotion of Water Conservation Foster a culture of water conservation by engaging communities in local water resource management.
- Enhancement of Climate Resilience Mitigate the impacts of climate change by developing storage solutions for heavy rainfall and providing a buffer against droughts.
- Improvement of Water Quality: Utilizing artificial recharge methods to naturally filter water as it percolates through soil layers, reducing salinity and contamination.
- Nodal Ministry: Ministry of Jal Shakti

National Crime Records Bureau

According to the latest data released by the National Crime Records Bureau (NCRB), crimes against Scheduled Tribes (STs) increased 28.8 per cent in 2023 as compared to the previous year.

About National Crime Records Bureau

- It was established in 1986 to act as a repository of information on crime and criminals.
- It was set up based on the recommendations of the Tandon Committee, the National Police Commission (1977-1981) and the Task Force of the Home Ministry.
- Nodal Ministry: It comes under the Ministry of Home Affairs (MHA), Government of India.
- Headquarters: New Delhi

Functions of National Crime Records Bureau

- It is responsible for collecting and analysing crime data as well as serving as a repository of such information to aid investigators in tracing crimes and criminals.
- It is entrusted with the responsibility of monitoring, coordination, and implementing the Crime and Criminal Tracking Network and System (CCTNS) project.
- Under the National Digital Police Portal police officers look for a criminal or suspect on the CCTNS database and give citizens with services such as online complaint filing, etc.
- The Bureau has also been entrusted to maintain the National Database of Sexual Offenders (NDSO) and share it with the States/UTs on a regular basis.
- NCRB has also been designated as the Central Nodal Agency to manage the technical and operational functions of the 'Online Cyber-Crime Reporting Portal' through which any citizen can lodge a complaint or upload a video clip as evidence of crime related to child pornography, rape/gang rape.
- The NCRB has also launched CyTrain, a portal for online training of different stakeholders in cybercrime investigations and prosecution.
- The Central Finger Print Bureau under the NCRB is a national repository of all fingerprints in the country.
- NCRB also compiles and publishes National Crime Statistics i.e. Crime in India, Accidental Deaths & Suicides, and also Prison Statistics.

Jal Prahar 2025

The Indian Navy recently concluded the 'Jal Prahar 2025' joint exercise with the Indian Army to enhance amphibious operations along the eastern seaboard.

About Jal Prahar 2025

- It is a biannual joint amphibious exercise conducted by the Indian Navy in close coordination with the Indian Army
- The Jal Prahar 2025 showcased synergy, coordination, and interoperability between the Indian Navy and Indian Army, enhancing operational readiness, maritime security, and national defence capabilities.
- The exercise was conducted in two phases.
- The Harbour Phase at Visakhapatnam focused on the induction and integration of army troops onboard INS Gharial.
- This included onboard training, safety briefings, orientation towards a mariner's life, sports and interactions sessions to foster camaraderie, the release stated.
- The Sea Phase witnessed the execution of amphibious operations, which included hard beaching at Kakinada, launching of LCAs and BMPs, and validation of SOPs and Joint Training Protocols.