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A Monthly Magazine For UPSC Civil Service Examination

Current Affairs 2024 NOVEMBER

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India's First Analogue Space Mission

The Indian Space Research Organisation (ISRO) has launched its inaugural analogue space mission in Leh, aiming to simulate space exploration challenges and prepare for future human and interplanetary missions.

Key Features

What are Analogue Missions?

- Simulate space-like conditions on Earth, such as confined habitats, limited resources, and isolation.
- Provide a controlled environment to study and prepare for extraterrestrial missions to the Moon, Mars, or asteroids.

Objectives of the Mission

- Simulated Space Habitats: Create interplanetary habitat conditions focusing on pressure regulation, life-support systems, and efficient layouts.
- Behavioral Insights: Study the psychological and physiological impact of stress, isolation, and teamwork on astronauts during extended missions.
- Technology Testing: Develop and test advanced systems like habitat structures, autonomous equipment, and resource recycling technologies.

Collaborations

- ISRO Human Spaceflight Centre: Technical oversight and mission guidance.
- AAKA Space Studio: Habitat design and technological support.
- University of Ladakh & IIT Bombay: Research on human psychological and physiological responses.
- Ladakh Autonomous Hill Development Council: Logistical and environmental support, leveraging Leh's extreme conditions for testing.

Significance

Technological Advancements

- Tests innovative systems for resource sustainability, such as water and air recycling.
- Improves habitat designs and autonomous technologies essential for future space missions.

Human Spaceflight Readiness

- Provides critical insights for Gaganyaan, India's first crewed spaceflight mission.
- Prepares astronauts to manage physical and psychological challenges of space travel.

Strengthened Global Leadership

- Enhances India's standing in the global space exploration arena.
- Paves the way for collaborative ventures with NASA, ESA, and Roscosmos.

Foundation for Lunar and Martian Bases

- Develops solutions for challenges like energy generation, waste management, and food production in extraterrestrial settings.

Earth Applications

- Adapts space technologies for use in resource-scarce or remote regions on Earth, benefiting water recycling and renewable energy initiatives.

Global Analogue Missions

- NASA's NEEMO: Underwater missions simulating microgravity for tool and procedure testing.
- SIRIUS Program (Russia-UAE): Studies the psychological impacts of isolation with multinational teams in confined environments.
- Arctic Mars Analogue Svalbard Expedition (AMASE): Tests Mars-related procedures in extreme cold and remote terrains.
- Mars Desert Research Station (MDRS): Simulates Martian conditions in Utah's desert for habitat and mobility system testing.
- India's analogue mission marks a significant milestone in advancing human space exploration capabilities and strengthens its position as a global space leader.

India-Spain Bilateral Relations: Key Highlights

President of the Government of Spain, Pedro Sánchez, visited India in 2024, marking the first high-level visit in 18 years, showcasing renewed vigor in bilateral relations.

Key Areas of Cooperation

Geopolitical Cooperation

- Commitment to democracy, freedom, rule of law, and multilateralism.
- Emphasis on a free, open, rules-based Indo-Pacific order.

Defence and Security

- Progress in the C-295 aircraft project under "Make in India."
- Encouragement for joint defence ventures and industrial collaboration.
- Condemnation of terrorism and support for global counterterrorism efforts.

Economic and Trade Relations

- Bilateral trade reached $9.9 billion in 2023, with key exports including textiles and machinery.
- Establishment of a "Fast Track Mechanism" to boost mutual investments.
- Collaboration in renewable energy, transport, and healthcare.
- Agreements on rail transport and customs cooperation.

Cultural and People-to-People Ties

- Declaration of 2026 as the Year of India-Spain in Culture and AI.
- Cultural Exchange Program signed to enhance ties in music, literature, and festivals.
- Establishment of ICCR Chairs in Hindi and Indian Studies at Spanish universities.

Tourism and Connectivity

- Plans for direct flights between India and Spain to bolster tourism.
- Focus on reciprocal investments in hospitality.

Science, Technology, and Innovation

- Joint projects in AI, renewable energy, and sustainable infrastructure.
- Collaboration on startup ecosystems and water desalination technologies.

Multilateral Cooperation

- Spain supports India's UNSC bid for 2028-29; India reciprocates for 2031-32.
- Advocacy for multilateral reforms to address global challenges.

Regional and Global Issues

- Support for dialogue-based solutions in Ukraine and West Asia.
- Collaboration on climate change, renewable energy transitions, and SDGs.

Challenges

Limited high-level engagements and divergent foreign policy priorities.

- Underdeveloped defence and cultural exchanges.
- Visa and mobility restrictions limiting professional and academic collaborations.
- Absence of a comprehensive strategic framework.

Way Forward

- Enhance diplomatic engagement and structured dialogues.
- Diversify trade in emerging sectors like green energy and technology.
- Finalize trade agreements such as the EU-India Free Trade Agreement.
- Strengthen academic and cultural exchanges through scholarships and events.

India and Spain's partnership, rooted in shared values and economic resilience, offers significant potential for growth across sectors, requiring sustained efforts to address challenges and enhance mutual cooperation.

Civil Registration System (CRS)

Union Home Minister recently launched the Civil Registration System (CRS) mobile application to "integrate technology with governance".

- Civil Registration System (CRS) Mobile App is designed to facilitate the registration of births and deaths across India.
- It was developed by the Registrar General and Census Commissioner of India.
- It aims to simplify and expedite the registration process for citizens, making it more accessible and efficient.
- The new app will allow citizens to register births or deaths at any time from any place in their state's official language.

Registrar General and Census Commissioner of India (RGCCI):

- It is an office under the Ministry of Home Affairs, Government of India, responsible for conducting the decennial Census of India, compiling demographic and population statistics, and overseeing the Civil Registration System (CRS) in the country.
- The Registrar General of India is the head of the Office of the Registrar General and Census Commissioner.

Mission Amrit Sarovar

The Prime Minister of India said that over 60,000 Amrit Sarovars were constructed across villages leaving behind a legacy for future generations.

- It was launched on 24th April, 2022with the resolve to build 75 Amrit Sarovars during the 75th year of independence as a part of Azadi ka Amrit Mahotsav.
- It helps to overcome the water crisis in rural areas of the country.
- Every Amrit Sarovar will have a pondage area of at least 1 acre with a water holding capacity of about 10,000 cubic metre.
- It focuses on water conservation, people's participation and proper utilization of soil excavated from the water bodies to boost infrastructure projects.

This Mission has been launched with a whole of Government Approach which involves 6 Ministries/Department namely:

- Dept of Rural Development, Department of land resources, Department of Drinking Water and Sanitation, Department of Water resources, Ministry of Panchayati Raj, Ministry of Forest, Environment and Climate changes.
- There is no separate financial allocation for Mission Amrit Sarovar.
- Bhaskaracharya National Institute for Space Application and Geo-informatics (BISAG-N) has been engaged as Technical partner for the Mission.

Swachh Diwali Shubh Diwali Campaign

The "Swachh Diwali Shubh Diwali" campaign, launched by the Ministry of Housing and Urban Affairs (MoHUA) aims to integrate the festival of Diwali with the Swachh Bharat Mission's goals of cleanliness and sustainability.

- "Swachh Diwali Shubh Diwali" Campaign objective is to promote cleanliness beyond homes to public spaces and neighbourhoods, reinforcing the values of the Swachh Bharat Mission.
- It Emphasizes plastic-free celebrations and "Vocal for Local" to minimize environmental impact.
- It Aligns with principles of public service and sanitation, encouraging Diwali celebrations that support marginalized communities.
- It Engages citizens to create a cleaner, more inclusive Diwali celebration in line with collective well-being and sustainability.

Ayushman Vaya Vandana Card

Prime Minister recently launched the Ayushman Vaya Vandana Card as an extension of the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY).

- This card aims to ensure free healthcare for every citizen aged 70 years and above, providing an annual coverage of up to ₹5 lakh.
- Ayushman Vaya Vandana Card announced during the Union Budget 2024-25.
- It Operates under the Ministry of Health and Family Welfare
- To provide free, universal healthcare access to seniors above 70 years, ensuring they can avail of necessary treatments without financial burdens.
- All Indian citizens aged 70 years or older are eligible, regardless of income or economic status.

- Requires registration via the PM-JAY portal or Ayushman app and mandatory eKYC completion, even for those with existing Ayushman cards.
- Beneficiaries of other government health schemes (e.g., CGHS, ECHS) can either retain existing coverage or opt for the Ayushman Bharat benefits.
- Also available for individuals insured under the Employees State Insurance Corporation (ESIC) and those with private health insurance.

Aarambh 6.0 Initiative

Prime Minister Narendra Modi engaged with young civil servants during Aarambh 6.0, focusing on enhancing governance through public participation (Jan Bhagidari) and improving feedback and grievance redressal systems.

- Aarambh 6.0 initiative is an orientation program for young civil servants, designed to equip them with governance skills and foster innovative thinking.
- This edition emphasized "Jan Bhagidari" (public participation), the importance of robust feedback mechanisms, and streamlined grievance redressal.

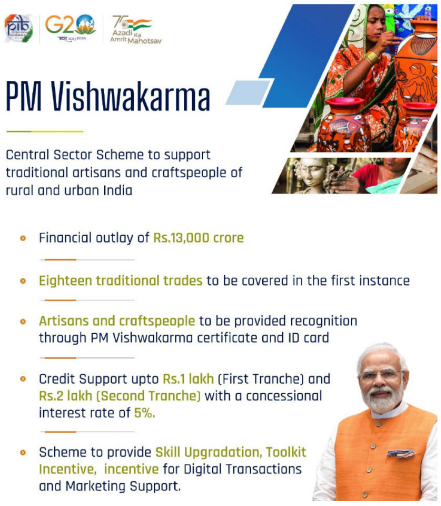
Mummy-Papa Vote Do Campaign

Ahead of the upcoming assembly elections in Jharkhand, the Election Commission launched an innovative voter awareness campaign, "Mummy-Papa, Vote Do,"

- "Mummy-Papa, Vote Do" Campaign aimed at increasing voter turnout by involving children in urging their parents to vote.
- Over 1.7 million students from 18,570 schools wrote letters to their parents, encouraging them to fulfill their civic responsibility.
- Boosts democratic participation, especially in rural areas, and emphasizes the importance of voting as a civic duty.

PM Vishwakarma Yojana

More than two million applications have been successfully registered under the PM Vishwakarma scheme which was launched in 2023.



- PM Vishwakarma Yojana is a central sector scheme launched by the Ministry of Micro, Small, and Medium Enterprises.
- It offers services like market linkage support, skill training, and incentives for digital transactions to artisans and craftspeople engaged in specified trades.
- Time period: Five years (FY 2023-24 to FY 2027-28).
- Aim is to strengthen and nurture the Guru-Shishya parampara, or family-based practice of traditional skills by artisans and craftspeople working with their hands and tools.
- The scheme also aims at improving the quality as well as the reach of the products and services of artisans and craftspeople and to ensure that the Vishwakarmas are integrated with the domestic and global value chains.
- It is available for rural and urban artisans and craftsmen across India.
- It covers 18 traditional crafts such as Boat Maker; Armourer; Blacksmith; Hammer and Tool Kit Maker; etc.
- Five lakh families will be covered in the first year and 30 lakh families over five years.

Deepam 2.0 Scheme

Andhra Pradesh Chief Minister Chandrababu Naidu launched the Deepam 2.0 scheme in Edupuram, Srikakulam.

- The Deepam scheme is a government initiative in Andhra Pradesh. It focuses on providing women with access to liquefied petroleum gas (LPG) for cooking.
- The scheme aims to eliminate the use of traditional cooking methods that can be harmful to health and the environment.
- Deepam 1.0 was the initial phase of the initiative.
- It provided women with LPG connections and subsidies. Deepam 2.0 builds on this by offering three free gas cylinders annually. This continuation demonstrates the government's commitment to women's empowerment and health.
- The primary goal of Deepam 2.0 is to empower women. By providing free gas cylinders, the scheme reduces financial burdens.
- It also promotes cleaner cooking methods, improving health and safety in households. The initiative aims to enhance the quality of life for women and their families.

Khap Panchayat

Khap Panchayats are sometimes seen in the news for multiple reasons, with some leaders advocating for progressive reforms to address key social and economic issues, including unemployment, education, and rural development.

- Efforts are also being made to modernise and regulate Khap Panchayats, integrating them into formal Alternative Dispute Resolution (ADR) systems for better governance and accountability.
- Khap Panchayats are traditional community-based councils primarily in North India, especially in Haryana and Uttar Pradesh, that function as informal judicial bodies.
- Originating centuries ago, they were formed among kinship groups (Khaps) to address social and governance issues within their communities.
- The system played a significant role in maintaining social order in rural societies, acting as a forum for conflict resolution within caste hierarchies, and operating parallel to formal legal systems while prioritising customary norms.

Inter-State Council

The Union government reconstituted the Standing Committee of the Inter-State Council (ISC) and named the Home Minister as its chairman.

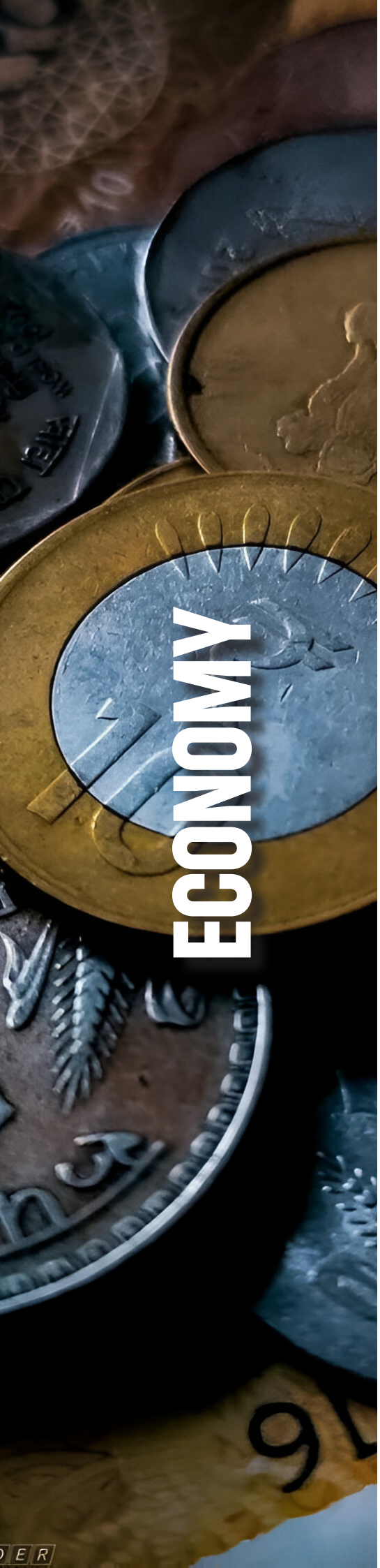
- Inter-State Council is established under Article 263 of the Constitution of India to facilitate coordination and cooperation between the central government and the state governments.
- The formation of a permanent Inter-State council was supported by the Sarkaria Commission.
- The Inter-State council can be set up by the President If at any time it appears to the President that the establishment of such a council would be in the public interest. In 1990, the first such body was established by the presidential order.

The Council consists of;

- Chairman: Prime Minister
- Members: Chief Ministers of all States
- Chief Ministers of Union Territories having a Legislative Assembly and Administrators of UTs not having a Legislative Assembly – Members
- Six Ministers of Cabinet rank in the Union Council of Ministers to be nominated by the Prime Minister – Members

The Council is charged with the duty of:

- Inquiring into and advising upon disputes which may have arisen between States.
- Investigating and discussing subjects in which some or all of the States, or the Union and one or more of the States, have a common interest.
- Making recommendations upon any such subject and particularly recommendations for the better coordination of policy and action.



Gold Reserves

India's total gold reserves held by the Reserve Bank of India (RBI) amount to 854.73 metric tonnes, according to the central bank's latest report.

India's Gold Reserve Status:

- Total Gold Reserves: 854.73 metric tonnes, with 510.46 metric tonnes held domestically and 324.01 metric tonnes stored at the Bank of England and BIS.
- Gold's Share in Total Reserves: Gold now represents 9.32% of forex reserves as of September 2024, an increase from 8.15% in March.
- Import Cover: As of June 2024, forex reserves cover 11.2 months of imports, slightly down from March's 11.3 months.

World ranking: (as of September 2024)

- Top rankers are United States, Germany and Italy.
- The United States has the most gold reserves and has nearly as many reserves as the combined total of the next three countries with the largest gold holdings: Germany, Italy, and France.
- India holds a significant position in global gold reserves, ranking 8th in the list of countries with the most gold reserves.

Mule Accounts

The Union Ministry of Home Affairs has issued an alert about illegal payment gateways like PeacePay, RTX Pay etc set up by transnational cybercriminals using mule bank accounts for money laundering.

- A mule account is a bank account used to facilitate illegal activities.
- A money mule is someone who transfers or moves illegally acquired money on behalf of someone else.
- Transnational cybercriminals use accounts of shell companies and individuals as mule accounts, exploiting the bulk payout facility provided by banks.
- A shell company is a company without active business operations or significant assets.
- They are not all necessarily illegal, but they can be used illegitimately to conceal business ownership from law enforcement or the public.
- The Bulk Payout facility offered by banks allows businesses and organisations to make multiple payments to various beneficiaries in a single transaction.

General Provident Fund

A division bench of the Madras High Court recently upheld the Central Administrative Tribunal's orders granting pension rights under the General Provident Fund (GPF) scheme to retired Kendriya Vidyalaya teachers.

- General Provident Fund (GPF) is a savings scheme introduced in 1960 that is available only for government employees in India.
- The primary objective of GPF is to provide a dependable source of income after retirement to government employees.
- With a GPF account, all the government employees can contribute a certain percentage of their salary to the GPF.
- Unlike the Employees Provident Fund (EPF), the contributions toward the GPF are made only by the employee.
- The total amount that is accumulated throughout the employment term is paid to the employee at the time of retirement.

Eligiblilty:

- All temporary government servants who have given their service for continuously one year.
- All re-employed pensioners (except those eligible for admission to the contributory provident fund).
- All permanent government servants.
- It is a mandatory scheme for government employees, requiring them to contribute a certain percentage of their salary towards the fund.
- The contributions are deducted from the employee's monthly salary, and the amount earns interest at a predetermined rate.

7th Central Pay Commission

Faculty and staff members from Indian Council of Social Science Research (ICSSR) institutions have written to the Minister of Education expressing concern over the delay in implementation of the 7th Central Pay Commission revised pay scales.

- Indian Council of Social Science Research (ICSSR) was established in the year 1969 by the Government of India to promote and fund research in the social sciences in the country.
- It was established on the recommendation of Prof. V. K. R. V. Rao Committee.
- It is an autonomous organisation working under the aegis of the Department of Higher Education, Ministry of Education
- It provides grants for projects, fellowships, international collaboration, capacity building, surveys, publications, etc. to promote research in social sciences in India.
- An all-India network of 24 frontline research institutes and six regional centres is maintained, and five recognized institutes are programmatically supported by the ICSSR.
- The Documentation center of ICSSR – National Social Science Documentation Centre (NASSDOC)-provides library and information support services to researchers in social sciences.
- ICSSR has developed the ICSSR Data Service to serve as a national data service for promoting a powerful research environment through the sharing and reuse of data among the social science community in India.

Kharif crop production

The Ministry of Agriculture and Farmers' Welfare has recently announced the First Advance Estimates for Kharif crop production for the year 2024-25, revealing a record-breaking output in foodgrains and oilseeds.

- The report reflects the government's growing use of technology and stakeholder input in agricultural planning and underscores a significant rise in production, especially in staple crops such as rice and maize.

Key Highlights of the First Advance Estimates for Kharif Crop Production:

- **Digital Crop Survey (DCS)**: For the first time, the DCS under the Digital Agriculture Mission (DAM) was used to estimate crop areas, replacing the manual Girdawari method in four states (Uttar Pradesh, Madhya Pradesh, Gujarat, and Odisha).
- **Record Foodgrain Production**: The total Kharif food grain production for 2024-25 is projected at 1647.05 Lakh Metric Tonnes (LMT), which is higher by 89.37 LMT as compared to 2023-24 and 124.59 LMT higher than average kharif foodgrain production, due to good production of Rice, Jowar and Maize.

Urad and Tur Imports

The Indian government reported a significant increase in Urad imports from Brazil, reaching over 22,000 metric tonnes.

- The Ministry of Consumer Affairs highlighted Brazil's potential as a major supplier of Urad and Tur for India, benefiting from different cropping seasons that align with India's crop demands.

Urad

- Scientific name: Vigna mungo, commonly known as black gram.
- Essential in Indian cuisine, often used as a dal and paired with rice or curry.
- Grown in both Kharif and Rabi seasons in India.
- Also grown in tropical regions like the Caribbean, Fiji, Myanmar, and Africa, introduced by Indian immigrants.

Tur

- Scientific name: Cajanus cajan, known as toor dal or pigeon pea.
- Indigenous to the Eastern Hemisphere; cultivated widely in tropical and semi-tropical regions.
- Commonly consumed as a staple in South Asia, Southeast Asia, and Africa.
- Cultivated in Latin America and the Caribbean, widely used in regional dishes.

Agricultural Policy Monitoring and Evaluation Report

The Organisation for Economic Co-operation and Development (OECD) in its Agricultural Policy Monitoring and Evaluation 2024 report highlighted that India implicitly taxed its farmers USD 120 billion in 2023, the highest among 54 countries.

- This is a result of government policies like export bans and duties, which aim to keep food prices low for consumers but impose significant costs on the agricultural sector.

Key Highlights of the OECD's Report:

- Total agricultural support across 54 countries averaged USD 842 billion/year from 2021-2023, higher than pre-Covid levels.
- Market Price Support (MPS) fell by USD 28 billion but remained a significant part of the total support.
- India's export restrictions in 2023 led to a negative MPS, causing a USD 110 billion loss, reducing farmers' incomes.
- India accounted for 62.5% of global negative MPS in 2023, an increase from 2000-02.
- Despite USD 10 billion in subsidies and MSP, price-depressing policies outweighed positive support.
- Global agricultural markets affected by geopolitical conflicts, extreme weather, and export restrictions.
- Increasing farmer protests highlight economic struggles and systemic issues in agriculture.
- Global agricultural productivity growth has slowed, threatening food supply sustainability.
- Environmental Public Goods Payments (EPGP), supporting sustainable practices, account for just 0.3% of total agricultural support.

Central Value Added Tax Credit

The Supreme Court, in a landmark judgment, has allowed telecom companies to claim Central Value Added Tax (CENVAT) credit for the installation of mobile towers and prefabricated buildings (PFBs).

- Central Value Added Tax (CENVAT) is tax credit system allowing manufacturers or service providers to claim a set-off on excise duty or service tax paid on inputs or input services used for manufacturing or providing output services.
- Implemented under the CENVAT Credit Rules, 2004, it replaced the Modified Value Added Tax (MODVAT). These rules define eligible goods, input services, and conditions for availing credit.
- It Prevents repeated taxation on the same value addition.
- It Reduces the tax burden on manufacturers and service providers.
- It Encourages businesses to reinvest savings in production and innovation.
- It Reduces the overall cost of goods and services by eliminating cascading taxes.

India's Trade Deficit

According to some economists, India's trade deficit is not a sign of weak manufacturing but reflects India's strength in services and attractiveness as an investment destination.

- A trade deficit occurs when a country imports more goods and services than it exports. It represents the amount by which the value of imports exceeds the value of exports over a certain period.
- Overall Trade Deficit: Reduced from USD 121.6 billion (FY23) to USD 78.1 billion (FY24).
- Services exports stands at USD 339.62 in FY24 and Services Trade Surplus stands at USD 162.06 billion.
- India's share in world services exports rose from 0.5% (1993) to 4.3% (2022), making India the 7th largest services exporter globally.
- Merchandise exports stands at USD 776 billion (FY23). Merchandise Trade Deficit narrowed to USD 238.3 billion (FY24) from USD 264.9 billion (FY23).
- Current Account Deficit (CAD): Reduced to USD 23.2 billion (0.7% of GDP, FY24) from USD 67 billion (2% of GDP, FY23).
- Capital Account Balance: Net inflows rose from USD 58.9 billion (FY23) to USD 86.3 billion (FY24), driven by foreign portfolio investment (FPI).

6th AITIGA Joint Committee Meetings

The 6th ASEAN-India Trade in Goods Agreement (AITIGA) Joint Committee and related meetings were held in New Delhi.

- It marked a crucial phase in reviewing the AITIGA to enhance trade relations between India and ASEAN nations
- India had sought a review of the AITIGA, originally implemented in 2010, citing disproportionate trade benefits for ASEAN countries.
- While India's exports to ASEAN increased from USD 25.62 billion (FY 2010-11) to USD 41.2 billion (FY 2023-24), imports surged from USD 30.6 billion to USD 79.66 billion in the same period.
- India wants ASEAN countries, particularly Vietnam, to make greater market-opening commitments for Indian goods.
- India seeks more stringent ROO provisions to prevent Chinese goods from being routed through ASEAN nations at preferential rates.
- India and ASEAN made initial progress towards initiating tariff negotiations, a crucial step in the review process.

Comprehensive Nuclear-Test-Ban Treaty Organization

The recent rumours of a nuclear test by Iran were promptly refuted by the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO).

- It is an international organization based in Vienna, Austria, established to implement the Comprehensive Nuclear Test-Ban Treaty (CTBT), which aims to ban all nuclear explosions worldwide.
- CTBT is a multilateral treaty opened for signature in 1996 by which states agree to ban all nuclear explosions in all environments, for military or civilian purposes.
- The treaty envisages the mechanisms that control such prohibition, including distant monitoring and data collection.
- It was signed by 183 states and ratified by 164 but has not entered into force as eight specific states among 44 (so-called Annex-2 states whose signatures are required for the Treaty to enter into force, namely the US, China, Iran, Egypt, Israel, India, Pakistan, and North Korea) have not ratified the treaty yet.
- In order to verify compliance with its provisions, the treaty establishes a global network of monitoring facilities and allows for on-site inspections of suspicious events.

Taipei Economic and Cultural Centre

China has expressed its opposition to the Taiwanese government establishing the Taipei Economic and Cultural Centre (TECC) in Mumbai. It is Taiwan's third office in India, following the openings in New Delhi and Chennai.

- In 1993, India and Taiwan set up representative offices: the India-Taipei Association in Taipei and the TECC in New Delhi.
- Other countries, like the US, Australia, and Russia, also maintain such centers to support visa services and cultural-economic exchanges.
- China's official stance is that there is only one China, which includes Taiwan as an inseparable part, with the People's Republic of China (PRC) as the sole legitimate government.
- India recognised the PRC in 1950, becoming one of the earliest countries to do so, and does not officially recognise Taiwan.

First Asian Buddhist Summit

India is set to host the first Asian Buddhist Summit (ABS).

- Initiated by the Government of India and IBC to promote Buddhist heritage and interfaith dialogue across Asia for the first time.
- Organized by the Ministry of Culture, Government of India.
- Location: Bharat Mandapam, New Delhi, India.
- 2024 theme: "Role of Buddha Dhamma in Strengthening Asia."
- Aim is to celebrate the cultural and spiritual heritage of Buddhism in Asia, fostering dialogue and collaboration on challenges faced by the Buddhist community.

NEOM Project

Saudi Arabia has taken a significant step toward realizing its ambitious NEOM project by opening its first luxury tourism site, an island called Sindalah.

- NEOM seeks to establish Saudi Arabia as a global luxury tourism and investment hub while advancing sustainable, high-tech urban development.
- It includes innovative concepts like The Line, twin skyscrapers spanning 170 km, a floating industrial complex called Oxagon, and Trojena, a mountainous skiing and leisure area.
- The first open site, Sindalah is a 840,000 square-meter luxury island aiming to attract global tourists and investors with high-end facilities, yachting berths, and a capacity of up to 2,400 guests daily by 2028.

World Intellectual Property Indicators

The World Intellectual Property Organization (WIPO) published the World Intellectual Property Indicators (WIPI) 2024.

- 15.7% growth in patent applications in 2023, the fastest among the top 20 origins globally.
- India ranked 6th in patent filings with 64,480 applications, over 55% from residents.
- Patent-to-GDP ratio increased from 144 to 381 in a decade.
- India recorded 36.4% growth, driven by sectors like textiles, tools, machines, and health.
- India ranked 4th globally, with a 6.1% rise in trademark filings in 2023
- Health (21.9%), Agriculture (15.3%), and Clothing (12.8%).
- Over 3.2 million active registrations, the 2nd largest globally.
- A record 3.55 million patent applications were filed globally in 2023, marking a 2.7% increase.
- Asia led IP filings, with India, China, South Korea, Japan, and the U.S. driving the growth.

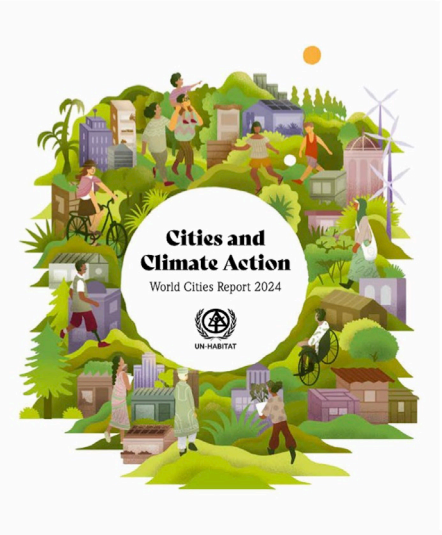
World Intellectual Property Organization (WIPO):

- A specialized UN agency headquartered in Geneva, Switzerland, established in 1967.
- Objective: Ensures that the IP framework evolves with global needs, fostering innovation

World Cities Report 2024

The UN-Habitat has released the World Cities Report 2024: Cities and Climate Action.

- The report highlighted that the cities are among the largest contributors to greenhouse gas emissions, yet they face disproportionately severe impacts of climate change.
- Temperature Increases: By 2040, nearly two billion people in urban areas will experience a 0.5°C rise in temperature.
- 14% of cities are expected to transition to drier climates while at least 900 cities could transition to more humid climates, especially tropical ones.
- **Sea-Level Rise**: By 2040, over 2,000 cities in low coastal areas, many under 5 metres above sea level, will expose more than 1.4 billion people to higher risks from sea-level rise and storm surges.
- **Disproportionate Impact**: Urban areas are disproportionately affected by climate change but are also significant contributors to greenhouse gas emissions (GHGs) making them more vulnerable to climate shocks like floods and cyclones.
- **Investment Gap**: To build climate-resilient systems, cities need an estimated USD 4.5 to USD 5.4 trillion per year. However, current financing stands at just USD 831 billion, highlighting a massive funding shortfall.



- **Riverine Flooding**: Flood exposure in cities has grown significantly, increasing 3.5 times faster than in rural areas since 1975.
- By 2030, 517 million people in cities will be exposed to riverine flooding, representing 14% of the global urban population.
- **Decline of Green Spaces**: Urban green spaces have significantly declined from 19.5% in 1990 to 13.9% in 2020 contributing to both environmental and social challenges in cities.
- **Increased Vulnerability**: Informal settlements (slums) are key drivers of vulnerability, as they are often located in flood-prone, low-lying, or precarious areas.
- Lack of protective infrastructure and legal recognition make them more exposed to climate impacts and unable to invest in upgrades due to eviction fears.
- **Green Gentrification**: Some climate interventions, like the creation of parks, have resulted in green gentrification leading to displacement of underprivileged communities.
- Gentrification means a low-income neighbourhood changes due to an influx of wealthier residents and businesses, leading to rising property values and rents.

Asia-Pacific Economic Cooperation

US President Joe Biden and Chinese counterpart Xi Jinping recently warned of turbulent times ahead, in remarks at an Asia-Pacific economic summit in Lima overshadowed by Donald Trump's impending return to the White House.

- Asia-Pacific Economic Cooperation (APEC) is a regional economic forum established in 1989 with the purpose of promoting free trade and investment and enhancing cooperation in social and development areas to advance prosperity, sustainable, and inclusive economic growth in the region.
- APEC ensures that goods, services, investments, and people move easily across borders.
- Members facilitate this trade through faster customs procedures at borders, more favourable business climates behind the border, and aligning regulations and standards across the region.
- APEC has contributed to the reduction of barriers to trade in the region over time, leading to the expansion of economic growth and international trade.
- Currently, APEC has 21 members. The 21 members are not necessarily 21 countries.

- Each member is considered an "economy" since APEC is primarily concerned with trade and economic dealings.
- The grouping's current members are Australia, Brunei, Hong Kong, New Zealand, Papua New Guinea, the Philippines, Indonesia, China, Japan, South Korea, Russia, Canada, the United States, Mexico, Peru, Chile, Malaysia, Vietnam, Singapore, Thailand, and Taiwan.
- The 21 APEC member economies account for nearly 40 percent of the global population, almost half of the global trade, and approximately 60 percent of global GDP.
- APEC holds annually the APEC Economic Leaders Meeting, attended by the heads of government of all APEC members.

Asia-Pacific Economic Cooperation

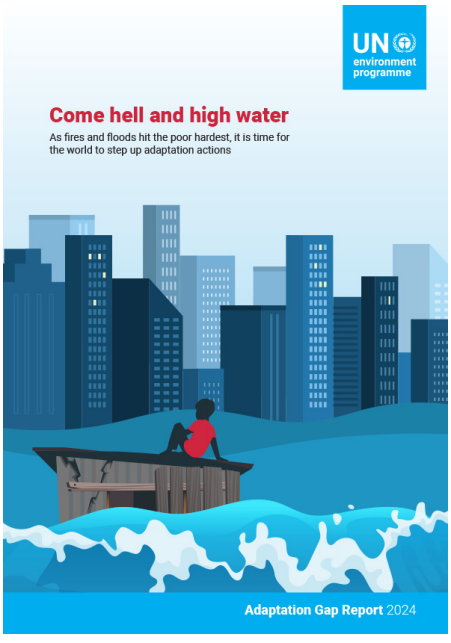
Adaptation Gap Report

The United Nations Environment Programme (UNEP) released the Adaptation Gap Report 2024: Come hell and high water.

- The report stresses the need for significant increases in climate adaptation efforts, particularly regarding adaptation financing for developing nations.

Key Findings of the Adaptation Gap Report 2024:

- The adaptation finance gap, indicating the disparity between financing needs and actual funds, has widened.
- Current funding (2022) is significantly below requirements, with only USD28 billion provided—meeting just 5% of the projected needs under the Glasgow Climate Pact.
- Glasgow Climate Pact aims to reduce methane emissions by at least 30% below 2020 levels by 2030.
- UNEP estimates developing countries need USD 387 billion annually by 2030 for adaptation.
- Only about one-third of the adaptation finance gap is in sectors typically funded by the private sector, leaving significant opportunities for private investment.
- The Emissions Gap Report, 2024 indicates that global temperatures could increase by 2.6°C to 3.1°C above pre-industrial levels by 2100.
- Developing countries suffer the most from climate-induced weather events despite having minimal contributions to global greenhouse gas emissions.
- Recent floods in Nepal, Nigeria, and Chad underscore the financial and infrastructural vulnerabilities of these nations.
- While 171 countries have at least one adaptation policy, out of 26 countries without an adaptation policy, 10 are uninterested in developing one, indicating slow progress in NAP planning and implementation.
- The UAE Framework for Global Climate Resilience (UAE-FGCR), introduced at UNFCCC COP28, sets dimensional and thematic targets (e.g., agriculture, water, health) for adaptation, yet implementation is lagging.
- It is the first international declaration of its kind with climate adaptation as the primary focus.
- UNEP calls for a shift from reactive to strategic adaptation, addressing harder-to-finance areas like ecosystem preservation and cultural heritage.
- The concept of "transformational adaptation" was contentious during COP28 but is considered crucial for addressing the rising risks.
- Transformational Adaptation refers to actions that adapt to climate change by making substantial changes in structure or function, surpassing mere adjustments to current practices.



India and CARICOM

India and CARICOM held their second Joint Commission meeting, an important event that reviewed and charted the future of their multifaceted relationship.

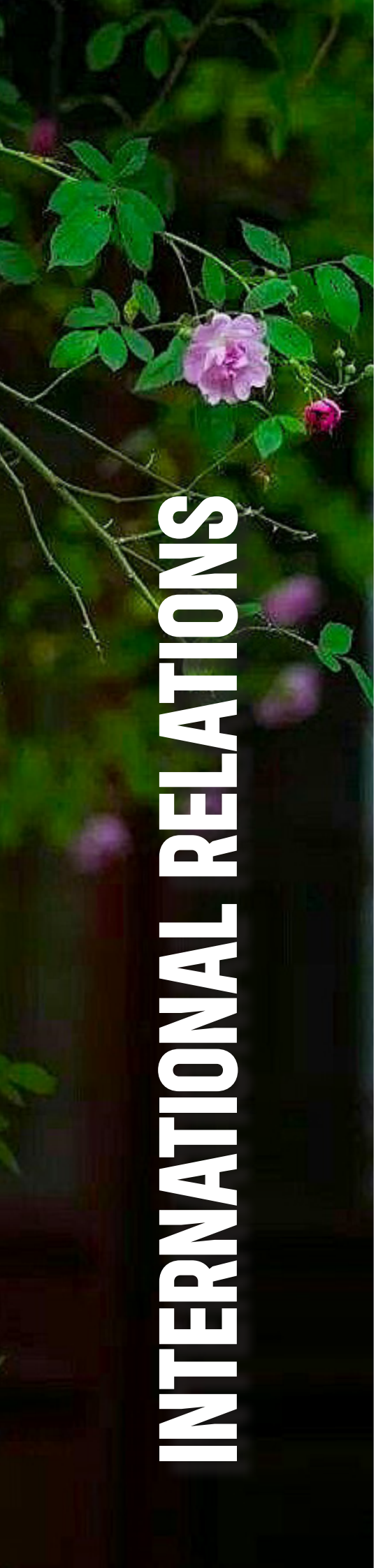
- CARICOM, which stands for Caribbean Community, is the oldest surviving integration movement in the developing world.
- It is an organization of Caribbean countries and dependencies originally established as the Caribbean Community and Commons Market in 1973 by the Treaty of Chaguaramas.
- Main Purposes is to Promote economic integration and cooperation among its members; To ensure that the benefits of integration are equitably shared; To coordinate foreign policy;
- It has 15 members; Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago.
- Anguilla, Bermuda, the British Virgin Islands, the Cayman Islands, and the Turks and Caicos Islands have associate member status, and Aruba, Colombia, the Dominican Republic, Mexico, Puerto Rico, and Venezuela maintain observer status.
- The Chairmanship of the Community is rotated every six months among the member countries' Heads.
- The CARICOM Secretariat in Georgetown, Guyana, is the principal administrative organ of the Community and is headed by a Secretary General who is the Chief Executive Officer of the Community.

Eastern Maritime Corridor

The Chennai-Vladivostok eastern maritime corridor has become operational and is carrying oil, food, and machines, Minister for Ports, Shipping, and Waterways said recently.

- The Chennai-Vladivostok Sea route, also known as the EMC, will link Russia's east coast with South India.
- The EMC offers a significant reduction in both cargo transit time between India and the Russian Far East of up to 16 days and in distance by up to 40%, promising substantial efficiency gains in transportation.

- Currently, the route from Mumbai to St. Petersburg, Russia, via the Western Sea Route and Suez Canal spans 8,675 nautical miles or 16,066 km.
- At present, a large container ship from India takes around 40 days to reach Russia's Far East region through Europe.
- In contrast, the distance from Chennai to Vladivostok via the EMC is significantly shorter, at only 5,647 nautical miles, or 10,458 km.
- This translates to substantial savings of 5,608 km in distance, providing significant reductions in logistical costs and enhancing the efficiency of cargo transportation between Russia, India, and Asia.
- En route, EMC passes through the Sea of Japan, the East China Sea, the South China Sea, the Malacca Straits, the Andaman Sea, and the Bay of Bengal.
- The route includes port options if needed, such as Dalian, Shanghai, Hong Kong, Ho Chi Minh City, Singapore, Kuala Lumpur, Bangkok, Dhaka, Colombo, and Chennai.



INTERNATIONAL RELATIONS

North Atlantic Right Whale

A group of researchers that studies the whales said that the population of North Atlantic right whales increased about 4% from 2020 level after the whale's population fell by about 25% from 2010 to 2020.

- These whales are migratory animals, spending the winter in warmer waters and migrating to the poles for cooler waters in late summer.
- These whales inhabit the temperate and subpolar waters of the North Atlantic and North Pacific oceans.
- Depending on the time of year and which hemisphere they're found, right whales will spend much of their time near bays and peninsulas and in shallow, coastal waters.
- These are generally restricted to the coastal waters of the East coast of the United States and Canada.
- Conservation status IUCN: Critically endangered
- CITES: Appendix I

Transponder Technology

The Department of Fisheries with the help of the Vessel Communication and Support System under the Pradhan Mantri Matsya Sampada Yojana has been able to enhance the safety and security of fishermen at sea.

- This initiative, utilizing indigenous transponder technology developed by ISRO and implemented by New Space India Ltd (NSIL)
- It Provides real-time two-way communication for fishermen beyond mobile range, enhancing safety and allowing for timely advisories during emergencies.
- It Uses transponders developed by ISRO, enabling precise vessel tracking, speed monitoring, and emergency communication, especially crucial in adverse weather.
- The Nabhmitra Application aids in vessel tracking and provides real-time updates on sea conditions, weather alerts, and cyclone data, contributing to safe navigation.
- Broadcasts in local languages ensure accessibility for non-English-speaking fishermen, enhancing response time and safety.
- A transponder is a wireless device that receives incoming signals, amplifies them, and transmits a modified signal back.

Live Seaweeds

The Centre issued the 'Guidelines for Import of Live Seaweeds into India' to support the import of high-quality seed materials or germplasm, aimed at enhancing livelihood opportunities for coastal communities.

- Establishes a regulatory framework with clear guidelines for live seaweed import into India, covering quarantine, risk assessment, and post-import monitoring to prevent pests, diseases, and biosecurity risks.
- India's seaweed industry faces challenges from limited seed availability and quality issues, especially in the widely farmed Kappaphycus species.

Pradhan Mantri Matsya Sampada Yojana (PMMSY)

- The PMMSY targets raising India's seaweed production to over 1.12 million tonnes by 2025, with major initiatives such as a Multipurpose Seaweed Park in Tamil Nadu to bolster seaweed farming.
- The guidelines encourage environmentally sustainable and economically beneficial seaweed cultivation.

Mhadei Wildlife Sanctuary

An adult tigress and three cubs were spotted in the Mhadei Wildlife Sanctuary (WLS), Goa for the first time since 2020.

- Located near the Chorla Ghat, situated between North Goa and Belgavi. It borders both Maharashtra and Karnataka.
- The Mhadei River flows through this sanctuary.
- Mhadei WLS, along with other protected areas in Goa like Mollem National Park, forms part of the Western Ghats. This region is globally renowned for hosting the world's largest tiger population.
- The sanctuary plays a vital role in a network of wildlife corridors that connect tiger populations across the Sahyadri Tiger Reserve (Maharashtra) and the Kali Tiger Reserve (Karnataka)
- Notably, Vazra Falls in Mhadei WLS serves as a nesting ground for critically endangered Long-billed vultures, underscoring the sanctuary's importance for avian conservation.
- Goa stands as the only state in India to have its entire portion of the Western Ghats under state protection, with Mhadei WLS being a critical part of this area.

Tiger Translocation for Genetic Diversity

The Odisha government translocated a tigress named Jamuna from Tadoba Andhari Tiger Reserve in Maharashtra to the Similipal Tiger Reserve (STR) in Odisha.

- Translocation was aimed at enhancing genetic diversity in Similipal, where there are concerns about inbreeding due to a small population.
- The National Tiger Conservation Authority (NTCA) gives approval for the translocation project.
- The Odisha Tiger Estimation conducted in 2024 found a total 24 adult tigers in Similipal, with a notable presence of pseudo-melanistic tigers.
- STR is the only habitat where these black tigers are found in the wild.
- The high number of pseudo-melanistic tigers (13 out of 24 adults) in Similipal raises concerns about inbreeding and lack of genetic flow, prompting the need for external genetic input.
- Tadoba Andhari Tiger Reserve is situated in Maharashtra and is the oldest and largest national park in the state.

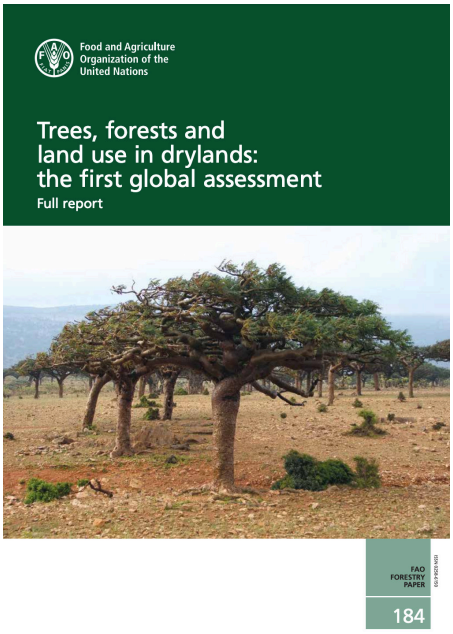
First Global Tree Assessment

The first Global Tree Assessment was published as part of an update to the IUCN Red List of Threatened Species, with its findings announced at the Convention on Biological Diversity (CBD COP16) in Cali, Colombia.

- It aims to evaluate all tree species globally for inclusion in the IUCN Red List, improving conservation information for decision-making.
- Started in 2015, the GTA helps prioritise conservation action, research, and funding for species most at risk of extinction.
- It collaborates with over 60 botanical organisations, 25 IUCN groups, and numerous tree experts worldwide.

Key Findings of the Report:

- Of the 47,282 tree species analysed, 16,425 are threatened with extinction. Iconic species, such as magnolias, oaks, maples, and ebonies, are among those most endangered.
- Threatened tree species exceed the combined total of threatened birds, mammals, reptiles, and amphibians, with trees at risk in 192 countries.
- The South Western Ghats of Kerala host Buchanania barberi, a small tree classified as Critically Endangered on the IUCN Red List since 2018.
- Urgent conservation initiatives, including germination trials that revealed high seed viability, have been undertaken to save this species.



- Land clearing for crops and livestock production is a leading driver of tree extinction, especially in tropical and forest-rich regions like South America.
- Many tree species are exploited for timber and other forest products, putting additional pressure on natural populations.
- Over 5,000 tree species are used for timber, and more than 2,000 for food, medicine, and fuel.
- Invasive Species, Pests, and Diseases: Non-native species and pathogens are increasingly affecting tree health, particularly in temperate zones.
- Warming temperatures, rising sea levels, and more frequent and intense storms pose significant risks, especially in tropical and island ecosystems.
- Initiatives in regions such as the Juan Fernández Islands, Cuba, Madagascar, and Fiji have successfully protected endangered tree species.
- Countries like Ghana, Colombia, Chile, and Kenya have developed national strategies focused on tree conservation.
- Gabon has designated key conservation areas specifically for trees, demonstrating a proactive approach to biodiversity preservation.

Corporate Social Responsibility

India, the first country to mandate Corporate Social Responsibility (CSR), has seen over ₹1.84 lakh crore invested through CSR from 2014 to 2023. With agriculture employing nearly half of the workforce and contributing 16.73% to GDP, interest in directing CSR funds toward agricultural sustainability is rising.

- CSR involves corporate initiatives focused on societal, environmental, and economic development, enabling companies to positively impact communities.
- Governed by Section 135 and Schedule VII of the Companies Act, 2013, and Companies (CSR Policy) Rules, 2014, which outline eligibility criteria, implementation, and reporting requirements for CSR activities.

Mandatory for companies meeting any of the following:

- Net worth of ₹500 crore or more,
- Annual turnover of ₹1,000 crore or more,
- Net profit of ₹5 crore or more.
- Such companies are required to allocate 2% of their average net profits from the past three years toward CSR.
- If a company fails to meet CSR obligations, it faces fines ranging from ₹50,000 to ₹25 lakh. Responsible officers may face imprisonment (up to three years), fines between ₹50,000-₹5 lakh, or both.

- Prior to 2019, unspent CSR funds could be carried forward to the next fiscal.
- Post-amendment, unspent funds must be transferred to a specified Schedule VII fund by the end of the fiscal year and utilized within three years, failing which, they must be deposited in a government-specified fund.

Global Nature Conservation Index 2024

India ranks 176th in the 2024 Global Nature Conservation Index. It is among the five lowest-ranked countries, along with Kiribati (180), Turkey (179), Iraq (178), and Micronesia (177), out of 180 nations.

- India's low ranking is due to inefficient land management and increasing biodiversity threats.
- Nature Conservation Index (NCI) is developed by the Goldman Sonnenfeldt School of Sustainability and Climate Change at Ben-Gurion University and BioDB.com, a biodiversity database.
- The first NCI was launched in October 2024 to evaluate conservation efforts.
- It assesses four key markers: land management, biodiversity threats, capacity and governance, and future trends.

Protected Planet Report 2024

The Protected Planet Report 2024, produced by the UNEP– World Conservation Monitoring Centre (UNEP-WCMC) and the IUCN and its World Commission on Protected Areas (WCPA), is the first comprehensive evaluation of the global status of protected and conserved areas.

- It highlights both the progress made and the challenges ahead in achieving Target 3 of the Kunming-Montreal Global Biodiversity Framework (KM-GBF).

Highlights of the Protected Planet Report 2024:

- Global Coverage Progress: 17.6% of land and inland waters and 8.4% of oceans and coastal areas are under protection.
- While progress has been made, the increase is minimal (less than 0.5% in both realms) since 2020.
- To meet the 30% target by 2030, additional protection is needed: 12.4% more land needs to be protected and 21.6% more oceans needs to be safeguarded.
- Progress in Ocean Conservation: Strongest progress since 2020 has been in the ocean, but most of this has been in national waters.
- In areas beyond national jurisdiction, coverage remains very low (<11% of the total area covered by marine and coastal protected areas).
- Less than 5% of land and 1.3% of marine areas have been assessed for management effectiveness. Only 8.5% of protected land is well-connected.
- Governance remains a challenge, with only 0.2% of land and 0.01% of marine areas assessed for equitable management.
- Only one-fifth of areas identified as important for biodiversity are fully protected. Biodiversity is unevenly conserved.

- Though over two thirds of Key Biodiversity Areas (KBAs) are partially or fully covered by protected and conserved areas, the remaining one third (32%) of KBAs fall entirely outside these areas and lack formal protection.
- Indigenous communities govern less than 4% of protected areas, despite holding 13.6% of global terrestrial areas outside formal protection.
- Governance data is lacking for these territories, and their contributions are often not fully recognized.

Wildlife Institute Of India

Experts from the Wildlife Institute of India (WII) have claimed that the controversial 'Project Cheetah' in Kuno National Park, Madhya Pradesh, has proven to be a successful endeavour by the Centre.

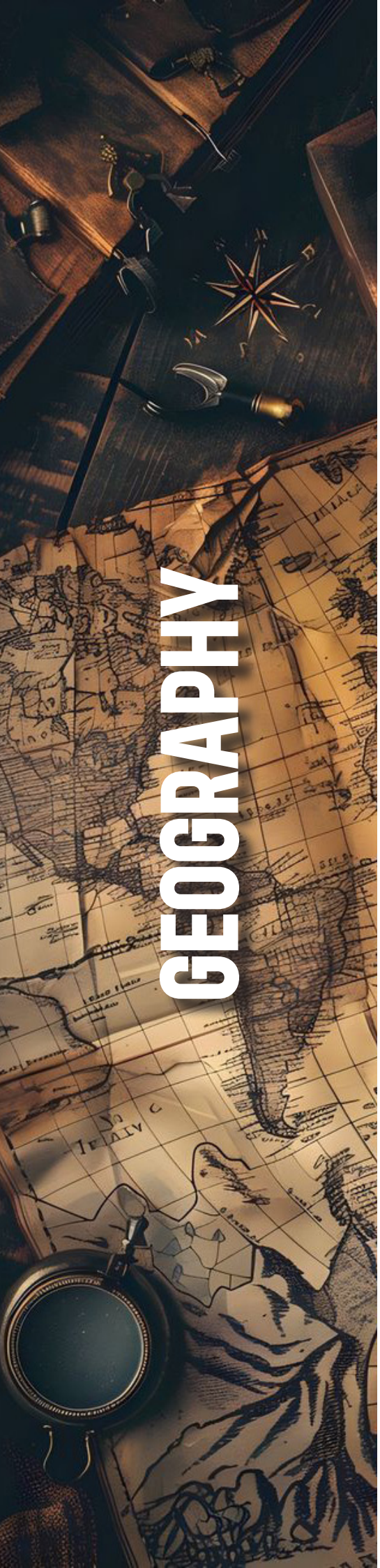
- Wildlife Institute of India (WII) s an autonomous institution established in 1982 under the Ministry of Environment, Forests and Climate Change, Government of India, for nurturing the growth of wildlife science in the country.
- It is located in Dehradun, Uttarakhand.
- It shares the boundaries with the famous Rajaji National Park.
- It is an internationally acclaimed institution, which offers training programs, academic courses, and advisory in wildlife research and management.

भारतीय वन्यजीव संस्थान
Wildlife Institute of India

- It is actively engaged in research across the breadth of the country on biodiversity-related issues.

Objectives:

- Build up scientific knowledge of wildlife resources.
- Train personnel at various levels for conservation and management of wildlife.
- Carry out research relevant to management including the development of techniques appropriate to Indian conditions.
- Provide information and advice on specific wildlife management problems.
- Collaborate with international organizations on wildlife research, management, and training.
- Develop as a regional centre of international importance on wildlife and natural resource conservation.
- The institute carries out research work in the fields of study, which include Biodiversity, policy related to wildlife, Endangered Species, Wildlife management, forensic Wildlife research work, Eco-development, Spatial Modelling, and studies related to changing climatic conditions.
- The board is chaired by the Union Minister and has representatives from the centre and state governments as well as institutions and academia



Central Water Commission

Glacial lakes and other water bodies across the Himalayan region saw a 10.81% increase in area from 2011 to 2024 due to climate change, signalling a heightened risk of Glacial Lake Outburst Floods according to a Central Water Commission's report.

- It is a premier technical organization of India in the field of water resources.
- It is presently functioning as an attached office of the Ministry of Jal Shakti, Department of Water Resources, River Development, and Ganga Rejuvenation, Government of India.
- Headquarters: New Delhi
- The Commission is entrusted with the general responsibilities of initiating, coordinating, and furthering, in consultation with the State Governments concerned, schemes for control, conservation, and utilization of water resources throughout the country for purposes of Flood Control, Irrigation, Navigation, Drinking Water Supply, and Water Power Development.
- It also undertakes the investigations, construction and execution of any such schemes as required.
- It is headed by a chairman, with the status of Ex-Officio Secretary to the Government of India.

The work of the Commission is divided among 3 wings, namely,

- Designs and Research (D&R) Wing
- River Management (RM) Wing
- Water Planning and Projects (WP&P) Wing.
- Each wing is placed under the charge of a full-time member with the status of Ex-Officio Additional Secretary to the Government of India.
- Each wing, comprising a number of organisations, is responsible for the disposal of tasks and duties falling within the scope of functions assigned to them.
- The National Water Academy, located in Pune, is responsible for training of central and state in-service engineers and it functions directly under the guidance of the Chairman.

Mount Lewotobi Laki-Laki

At least 10 people died after Mount Lewotobi Laki-laki in eastern Indonesia erupted and forced authorities to evacuate several nearby villages. Mount Lewotobi Laki-Laki is located on Flores Island.

- The volcano is part of a twin-volcano system that the local residents perceive as male and female mountains.
- The on-going volcanic eruption has occurred at the male counterpart of the system (Lewotobi Lakilaki) while the female mountain is known as Lewotobi Perempuan.
- The two mountains are classified as stratovolcanoes which are the most commonly occurring volcanoes around the world and are formed by the layers of lava that repeatedly oozes out of the crater.
- It is not uncommon for Indonesia to witness such volcanic eruptions as it is situated along the famous 'Ring of Fire' in the Pacific region- an encirclement dotted by active volcanoes that sit on top of vigorous tectonic plates that often collide and lead to seismic activity causing earthquakes and tsunamis.

Foam in Yamuna River

In preparation for Chhath Pooja, Delhi has faced recurring debates and actions around the toxic foam in the Yamuna River, where devotees gather for rituals.

- The river's lean flow during winter time reduces the natural dilution of pollutants, allowing them to concentrate.
- The main contributors to foaming are phosphates from detergents used in domestic and industrial activities. These chemicals lead to surfactant buildup in the water.
- Discharge from industries upstream also contributes chemicals that create foam.
- Anaerobic bacteria act on the pollutants, especially as water falls from heights, such as at the Okhla barrage, aiding foam formation.
- The onset of winter reduces oxygenation, aggravating the foaming.

Dibang Multi-Purpose Hydro Power Project

The Union Minister of State for Consumer Affairs, Food, and Public Distribution recently visited the Dibang Multi-Purpose Hydro Power project site at Arunachal Pradesh's Dambuk village

- Dibang Multi-Purpose Hydro Power Project is a flood control cum hydroelectric power project planned to be developed on the Dibang River, a tributary of the Brahmaputra River, in Arunachal Pradesh.
- At 2,880MW installed capacity, it will be the country's biggest hydropower facility.
- It is being developed by India's state-run National Hydroelectric Power Corporation (NHPC).
- The Project is designed as an energy storage project, with flood moderation as one of the key objectives, besides power generation.
- The project envisages the construction of a 278m-high and 375m-long concrete gravity dam, which will be the highest Concrete-Gravity Dam of India.
- The Dam is planned to be constructed with Roller Compacted Concrete (RCC) technique and it will be the highest RCC Dam of the World.
- The dam will create a 43 km-long reservoir with a gross storage capacity of 3.85 billion cubic metres.
- It includes six Horseshoe-shaped head race tunnels of length varying from 300 m to 600 m with 9 m diameter, an underground Power House, and six horseshoe-shaped tailrace tunnels of length varying from 320m to 470 m with 9 m diameter.

Global Soil Conference 2024

The Global Soil Conference (GSC) 2024 was held in New Delhi, highlighting the importance of soil health for food security, climate change mitigation, and ecosystem services.

- The GSC 2024, organised by the Indian Society of Soil Science (ISSS) in collaboration with the International Union of Soil Sciences (IUSS), aims to address challenges in sustainable soil/resource management.
- The event aimed to foster a global dialogue on how caring for soils can drive sustainability across various sectors.
- Theme: Caring Soils beyond Food Security: Climate change mitigation & Ecosystem Services.
- Soil health was recognized as a pressing issue, with soil degradation affecting productivity and posing a threat to global food security.
- Around 30% of India's soil is reportedly compromised due to erosion, salinity, pollution, and loss of organic carbon.
- The conference underscored the importance of international cooperation in tackling soil erosion, which aligns with Sustainable Development Goal 15 (SDG 15) of the United Nations.
- SDG 15 aims to protect, restore, and promote the sustainable use of terrestrial ecosystems, manage forests sustainably, combat desertification, halt land degradation, and halt biodiversity loss.

AroTrack

Scientists at the Indian Institute of Technology Bombay (IIT Bombay) have developed a water-pollutant detecting device called 'AroTrack'.

- AroTrack accurately detects harmful aromatic xenobiotic pollutants such as phenol or benzene, xylenols.
- It uses proteins typically found in bacteria living in heavily polluted environments to effectively identify multiple aromatic pollutants in water.
- This protein undergoes a highly selective ATP hydrolysis chemical reaction if an aromatic compound is present in the sample.
- This reaction is expressed with a change in the colour of the protein solution, which AroTrack can then detect.
- AroTrack contains a light emitting diode [LED]-phototransistor assembly that shines a light of appropriate wavelength through the sample and detects how much is absorbed.
- The key component of the device is a biosensing module called MopR – a sensitive sensor for detecting phenol.
- The device also reliably worked in water temperatures up to 50 degrees Celsius and completed the tests in less than 30 minutes.
- It's low cost, battery-operated nature, and portability can be ideal for rural and low-income settings that often lack resources and have difficulty accessing expensive laboratory tests.

Cloud Seeding

Delhi is grappling with severe air pollution, the concept of cloud seeding has emerged as a potential short-term solution to combat the hazardous air quality.

- Cloud seeding, also known as artificial rain, is a weather modification technique that aims to enhance precipitation by introducing substances into clouds to stimulate rainfall.
- The science behind cloud seeding involves dispersing materials such as silver iodide, potassium iodide, or dry ice into clouds to encourage the formation of rain or snow.
- These particles serve as nuclei for water droplets to form around, potentially leading to increased precipitation.
- The process can be carried out using aircraft, ground-based generators, or even rockets in some cases.
- Cloud seeding is done to increase the radius of the cloud droplets so that they will grow bigger and because of gravity, they will come down as rainfall.
- In the context of air pollution, cloud seeding is seen as a potential method to "wash away" particulate matter and other pollutants from the air.
- The theory is that increased rainfall could help settle dust and other airborne particles, temporarily improving air quality.
- Suitable atmospheric conditions are necessary for the technique to be effective, including the presence of clouds with sufficient moisture.

Sendai Framework for Disaster Risk Reduction 2015-2030

India is committed to the Sendai Framework for disaster risk reduction.

- Sendai Framework for Disaster Risk Reduction 2015-2030 was the first major agreement of the post-2015 development agenda and provides member states with concrete actions to protect development gains from the risk of disaster.
- It was adopted by the UN member states at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on March 18, 2015.
- It is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015.

The Sendai Framework advocates for:

- The substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries.
- It recognizes that the State has the primary role to reduce disaster risk, but that responsibility should be shared with other stakeholders, including local government, the private sector, and other stakeholders

Tsunami Ready Recognition Programme

Twenty-four coastal villages in Odisha were recognised by the Intergovernmental Oceanographic Commission of UNESCO as 'Tsunami Ready'.

- Tsunami Ready Recognition Programme is an international community-based recognition programme developed by Intergovermental Oceanographic Commission (IOC) of UNESCO.
- It aims to build resilient communities through awareness and preparedness strategies that will protect life, livelihoods and property from tsunamis in different regions.
- The main goal of the Programme is to improve coastal community preparedness for tsunamis and to minimize the loss of life, livelihoods and property.
- This is achieved through a collaborative effort to meet a standard level of tsunami preparedness through the fulfilment of a set of established indicators.
- To get this recognition communities must meet all 12 indicators,which cover Assessment, Preparedness, and Response, will be recognized as 'Tsunami Ready' by the UNESCO/IOC. The recognition is renewable every four years.
- It is implemented as a voluntary, performance-based community recognition programme that promotes an understanding of the concept of readiness as an active collaboration among national and local warning and emergency management agencies, and government authorities, scientists, community leaders and the public.

Global Carbon Project : Report

India's carbon dioxide (CO2) emissions from burning fossil fuels are expected to increase by 4.6% in 2024, the highest among major economies, according to a new report by Global Carbon Project.

- Carbon Dioxide is a colourless gashaving a faint sharp odour and a sour taste.
- It is an important heat-trapping gas, also known as a greenhouse gas.
- It comes from the extraction and burning of fossil fuels (such as coal, oil, and natural gas), from wildfires, and natural processes like volcanic eruptions.
- It is one of the most important greenhouse gas (GHG) in the atmosphere and is the primary driver of anthropogenic climate change.
- Studies have shown that CO2 has contributed more than any driver to climate change.
- It is much more abundant in the atmosphere compared to CH4 and HFCs.
- CO2 remains in the atmosphere longer than the other major GHGs emitted due to human activities.
- After a pulse of CO2 is emitted into the atmosphere, 40% will remain in the atmosphere for 100 years and 20% will reside for 1000 years, while the final 10% will take 10,000 years to turn over," a report by the Union of Concerned Scientists (UCS), a US-based non-profit organisation.

Chronic Wasting Disease

New York State authorities recently confirmed a case of Chronic Wasting Disease (CWD) in a deer facility

- Chronic Wasting Disease (CWD) is a progressive and fatal neurological disease affecting deer, elk, moose, and other cervids (members of the deer family).
- It's caused by abnormal proteins called prions that damage brain tissue, leading to severe neurological symptoms, weight loss, and eventually death.
- CWD is part of a group of diseases known as Transmissible Spongiform Encephalopathies (TSEs), which also include mad cow disease in cattle and Creutzfeldt-Jakob disease in humans.
- CWD spreads between animals through bodily fluids, like saliva, urine, and feces, as well as contaminated soil and plants.
- There is currently no evidence that CWD can infect humans.

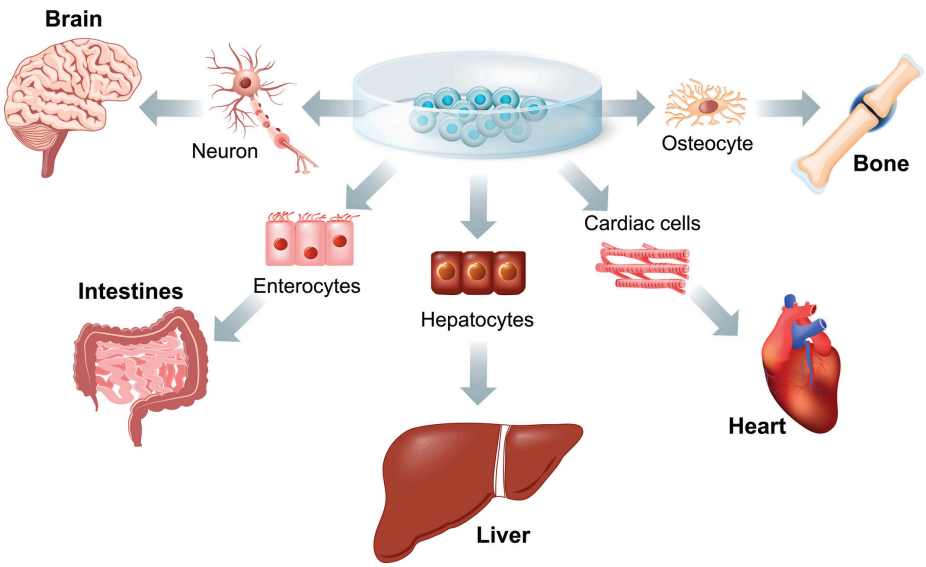
Stem Cell Transplants

A recent study published in Science Translational Medicine examined long-term outcomes in patients who underwent hematopoietic stem cell transplants (HSCT), focusing on how transplanted stem cells evolve and mutate over time.

- The research involved 16 pairs of donors and recipients where both exhibited surprisingly low mutation rates, average 2% in donors and 2.6% in recipients annually.
- This finding suggests a stable clonal expansion of stem cells over decades.
- While all donors exhibited some level of clonal hematopoiesis, the absence of widespread clonal expansion indicates a robust regenerative capacity of the bone marrow.

Implications:

- Crucial for improving long-term transplant outcomes.
- Potential risk of developing blood cancers or chronic diseases in recipients due to the presence of clonal hematopoiesis.



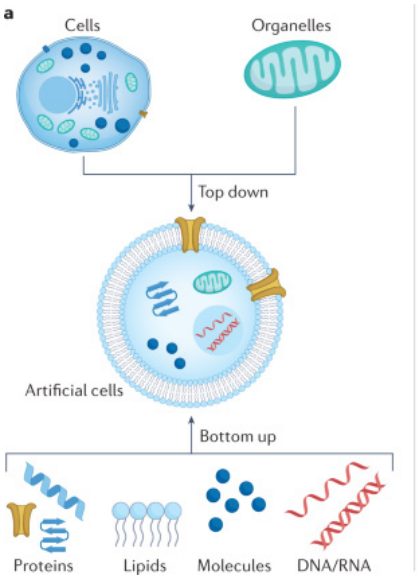
Iron Beam

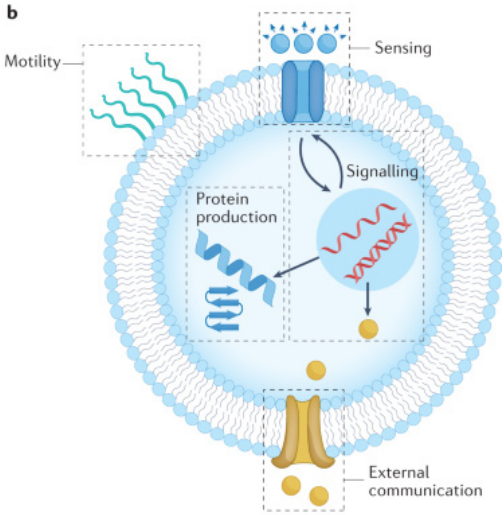
Israel's 'Iron Beam', designed to use a high-power laser to down projectiles, will be operational within a year.

- The Iron Beam, also known as Magen or Light Shield, is a new laser-based missile defence system developed by Israel.
- It is a 100kW class High Energy Laser Weapon System (HELWS) that is expected to become the first operational system in its class.
- It is a directed-energy weapon air defence system that fires powerful beams of light that can destroy fast-moving projectiles.
- Built by Rafael Advanced Defense Systems, Iron Beam was first unveiled in 2014.
- Its operational range extends up to 7 km (4.3 miles).
- With a continuous energy supply for the laser, the advantage lies in never depleting ammunition, ensuring a sustained capability for defence.
- The absence of conventional ammunition will directly result in significant cost savings.

Hydrogels

A new way discovered by a team of researchers at the Department of Chemical Sciences in Bose Institute to create hydrogels using tiny protein fragments of just five amino acids from the SARS-CoV-1 virus.





- Hydrogels is a three-dimensional network composed of hydrophobic polymers synthesized by crosslinking water-soluble polymers.
- Hydrogels can retain a large quantity of water within their network without disturbing their original structure. This imparts flexibility and swelling properties to the hydrogel structures.
- It is a "smart" material that can change its structure in response to its environment, such as the local temperature, pH, salt or water concentration.
- Severe Acute Respiratory Syndrome (SARS) is a viral respiratory disease caused by the virus SARS-CoV-1.
- It is an airborne virus and can spread through small droplets of saliva in a similar way to the cold and influenza.
- It can also be spread indirectly via surfaces that have been touched by someone who is infected with the virus.

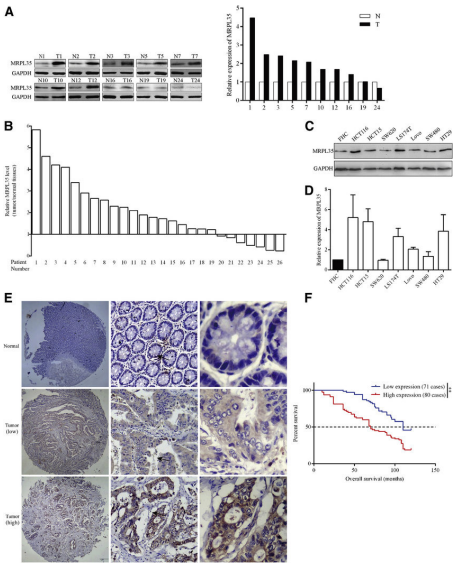
Gujarat Semiconductor Policy 2022–2027

Aligning with the vision for a developed India by 2047, the Gujarat government has introduced the Gujarat Semiconductor Policy 2022-2027 to position Gujarat as a leader in semiconductor manufacturing.

- The Gujarat government has introduced India's first 'Gujarat Semiconductor Policy 2022-2027.
- In Dholera's emerging 'Semicon City,' Tata Electronics Private Limited (TEPL) and Taiwan's Powerchip Semiconductor Manufacturing Corporation (PSMC) are establishing India's first AI-enabled semiconductor fabrication facility with an investment exceeding Rs 91,000 crore.
- Dholera, is being developed as India's first Greenfield Smart City.

L-35 Protein

Scientists at the Institute of Advanced Study in Science and Technology (IASST) in Guwahati, have discovered a specific protein IL-35.



- IL-35 Protein is a specific protein of IL-12α and IL-27β chains.
- It helps protect against type 1 and autoimmune diabetes.
- It regulates macrophage activation, T-cell proteins and regulatory B cells.
- It inhibited pancreatic beta cell-attacking immune cells. Additionally, IL-35 lowered particular immune cells that produce inflammatory chemicals, reducing pancreatic cell infiltration, a key contributor in type 1 diabetes and autoimmune diabetes mellitus.
- Autoimmune diabetes mellitus or T1DM is an organ-specific autoimmune disease.
- It affects the insulin-producing pancreatic beta cells after an inflammatory process, leading to a chronic deficiency of insulin in genetically susceptible individuals.
- It ultimately results in lifelong dependence on exogenous insulin.
- It is a complex multifactorial diseasein which both genetic susceptibility and environmental factors promote the autoimmune responses against beta cells.
- Several environmental risk factors have been suggested as candidate triggers of islet autoimmunity, including certain viruses higher birthweight, infant weight gain, dysbiosis of the gut microbiota and various dietary factors (e.g., vitamin D deficiency, omega-3 fatty acid deficiency, high milk consumption).

BRIC-NABI

India's first Biomanufacturing Institute, the "BRIC-National Agri-Food Bio-Manufacturing Institute" (BRIC-NABI), was inaugurated in Mohali.

- BRIC-NABI is formed by merging National Agri-Food Biotechnology Institute (NABI) and the Center of Innovative and Applied Bioprocessing (CIAB), combining expertise in biotechnology and bioprocessing to scale up agri-tech innovations.
- It aims to boost India's agri-food sector through advanced biotechnology, enhancing agricultural R&D for high-yield crops, disease-resistant crops, biofertilizers, and biopesticides to support sustainable practices.
- The Center aids agri-food startups, bridging research and industry while empowering local youth, women, and farmers.
- This policy will explore biomanufacturing applications in agriculture, food, pharmaceuticals, and energy sectors, aligned with the eco-friendly goals of the BioE3 policy.
- BioE3 Policy highlights biotechnology's role in economic growth, job creation, and environmental protection, showcasing the administration's commitment to a high-impact science strategy.
- The establishment of BRIC-NABI marks a major step towards a science-driven economy focused on biomanufacturing,

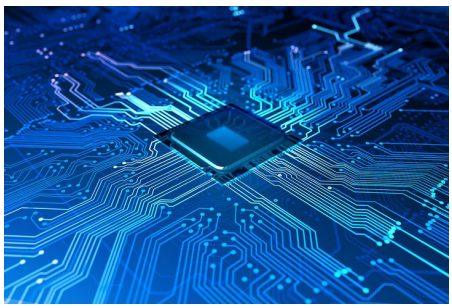
Millimeter Wave Transceiver

The Centre for Development of Telematics (C-DOT) has signed an agreement with the IIT Roorkee to develop a Millimeter Wave Transceiver aimed at improving 5G connectivity in rural areas under the Telecom Technology Development Fund (TTDF) scheme.

- Millimeter Wave Transceiver Technology is a device used to transmit and receive signals in the millimeter wave (mmWave) frequency range (30-300 GHz), enabling high-speed wireless communication for applications like 5G.
- It Uses small cells to emit high-frequency mmWaves that provide fast data rates over short distances; small cells are placed in clusters to ensure continuous coverage.
- Advantages – High data rates and bandwidth
  - Low latency
  - Less interference with other systems
  - Compact antennas for IoT compatibility
  - Increased data capacity
- Disadvantages
  - Limited range; blocked by physical objects
  - Prone to signal degradation from rain, humidity, and obstructions
  - Higher manufacturing costs and need for clustered cells

Processing-In-Memory (PIM) Technology

Israeli researchers have created software that allows data processing directly in memory, bypassing the CPU.

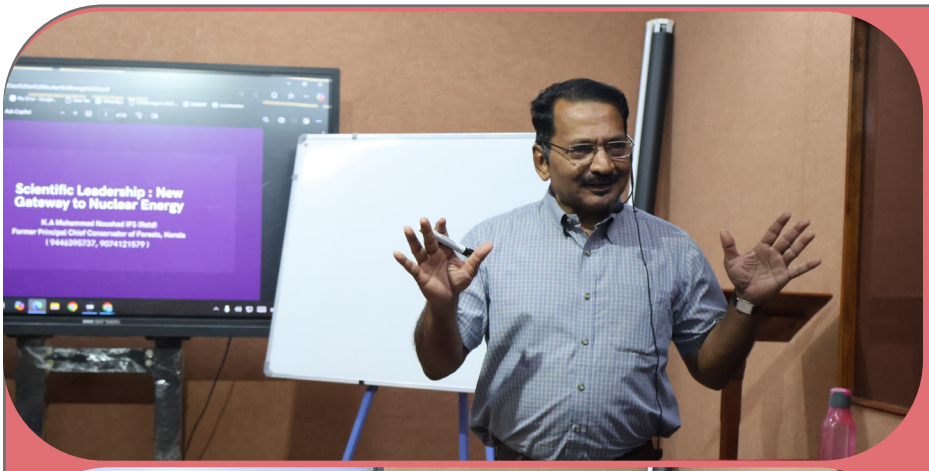


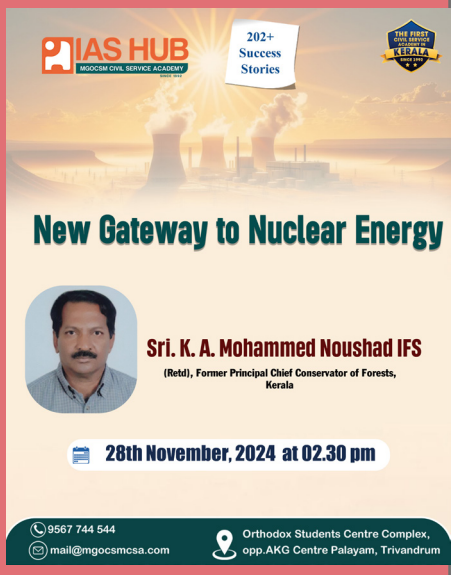
- This advancement, developed at the Israel Institute of Technology, aims to address the energy-intensive and time-consuming data transfers between memory and CPU, which are bottlenecks in modern computing.
- By reducing the CPU's workload, this in-memory approach promises substantial time and energy savings.
- Python Programming Language with Digital Processing-In-Memory (PIM) Technology Combines Python with processing-in-memory (PIM) technology, enabling computations to take place directly in memory, bypassing the CPU.
- It Tackles the "memory wall" problem, where data transfer rates fall behind advancements in processor speeds and memory capacity.
- PyPIM platform introduces new instructions for in-memory operations.
- It Allows developers to use Python to create software for PIM systems.
- Includes a simulation tool to estimate performance gains from in-memory processing.
- It Reduces data transfer bottlenecks.
- It Accelerates processing for mathematical and algorithmic tasks.
- It Saves energy, making it efficient for high-performance computing needs.

AI-enabled e-Tarang System

- *The Ministry of Defence launched the AI-enabled e-Tarang System.*

- It is a unique software, developed in collaboration with Bhaskaracharya National Institute for Space Applications and Geo-informatics (BISAG-N).
- It will improve planning for the interference-free operation of defence equipment during both wartime and peacetime.
- It will enable automated, efficient planning and management of Defence Spectrum, as well as support the development of newer technologies in higher frequency bands.
- It is set to support rapid decision-making, thereby allowing seamless integration of newer technologies critical for modern defence applications.
- BISAG-N is an Autonomous Scientific Society of the Ministry of Electronics & Information Technology (MeitY), Government of India.
- It undertakes technology development and management, research and development, facilitation of National and international cooperation, capacity building, and support of technology transfer and entrepreneurship development in geospatial technology.
- The Organisation has three main domain areas: Satellite Communication, Geo-informatics and Geo-spatial technology.





Black Hole Triple System

A new study says scientists have discovered a "black hole triple" in space for the first time.

- The system comprises a black hole at its centre, currently in the process of consuming a small star spiralling very close to it.
- There is also a second star, which appears to be circling the black hole but is actually far away.
- The discovery of the system, located about 8,000 light years away from Earth has raised questions about how black holes are formed.
- Many black holes discovered until now have been part of binary systems, consisting of a black hole and a secondary object (such as a star or another black hole).
- But the black hole triple not only has one star which orbits the black hole about every 6.5 days, but also a more far-off star which orbits it every 70,000 years.
- It is situated in the constellation of Cygnus, the system features one of the oldest known black holes, the V404 Cygni, which is nine times as big as the Sun in our solar system.

Voyager 2 Spacecraft

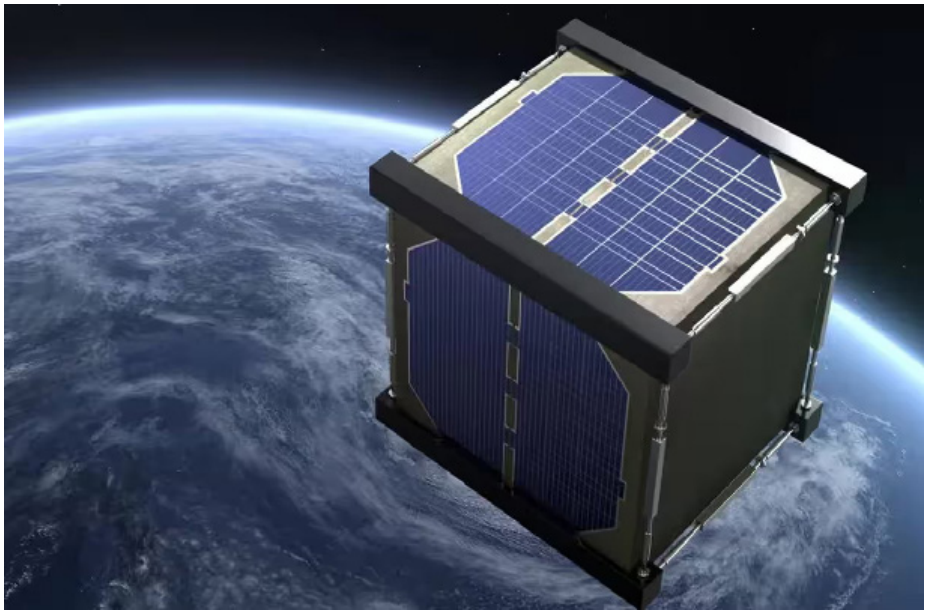
Voyager 2 spacecraft made its historic flyby of Uranus, scientists have uncovered new revelations about the ice giant's peculiar magnetic field.

- Voyager 2 Spacecraft is an unmanned space probe launched by NASA on August 20, 1977, just a few weeks before its sister craft, Voyager 1.
- Its mission was to study the outer planets of our solar system, including Jupiter, Saturn, Uranus, and Neptune and their moons, and then continue on an interstellar mission.
- It is the only spacecraft to have ever visited Uranus and Neptune.
- It carries a Golden Record, a phonograph record containing sounds and images from Earth, intended to be a message to any potential extra-terrestrial civilizations it might encounter in the future
- It is the only spacecraft to study all four of the solar system's giant planets at close range.
- It discovered a 14th moon of Jupiter.
- After completing its primary mission, Voyager 2 continued on its journey into interstellar space, where it is still sending back data on the interstellar medium and the heliosphere.

LignoSat

The world's first wooden satellite LignoSat built by Japanese researchers was launched into space in an early test of using timber in lunar and Mars exploration.

- LignoSat", a fusion of "ligno" (the Latin word for wood) and "satellite".
- It is developed through collaborative research and development by a team comprising members from Kyoto University and Sumitomo Forestry Co.
- Their objective is to leverage the eco-friendliness and cost-effectiveness of wood in space exploration.
- It is tasked to demonstrate the cosmic potential of renewable material as humans explore living in space.
- It is constructed from magnolia wood, chosen for its durability and adaptability.

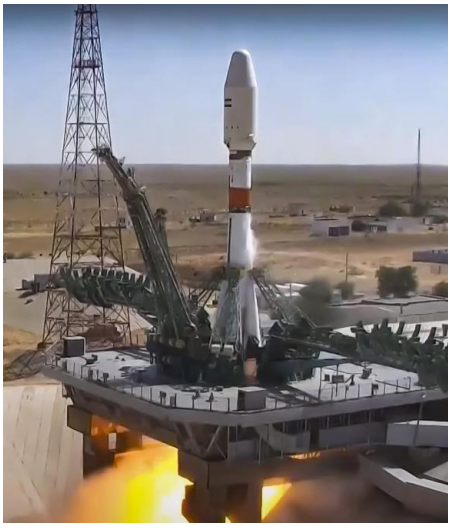


- It will first be sent to the International Space Station (ISS) aboard a SpaceX rocket from the Kennedy Space Center.
- Once it reaches the ISS, it will be released from the Japanese experiment module to test its durability and strength.
- Wooden satellites are viewed as more environmentally friendly upon reentering the Earth's atmosphere after their mission.
- Unlike metal satellites, which pose air pollution risks due to the generation of metal particles during reentry, wooden satellites mitigate these concerns.

Kowsar and Hodhod

A Russian Soyuz rocket successfully launched two Iranian satellites, Kowsar and Hodhod, into orbit from the Vostochny Cosmodrome.

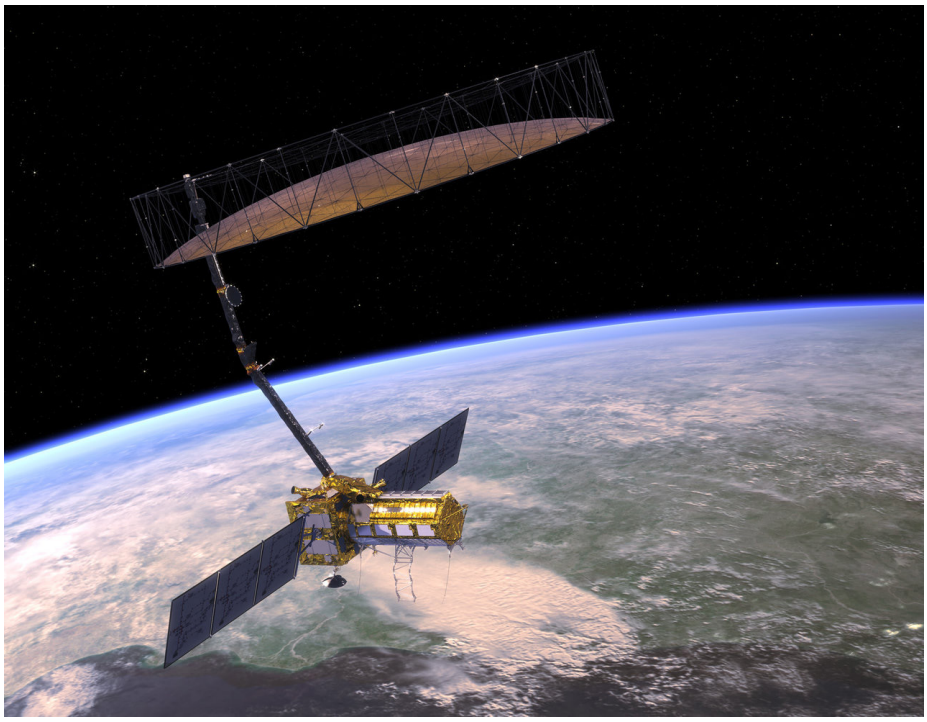
- Moscow and Tehran have been deepening their ties in defense, technology, and energy, planning to establish a "comprehensive strategic partnership" during Iranian President Masoud Pezeshkian's upcoming visit to Russia.
- Both countries have faced Western accusations that Iran is supplying Russia with explosive drones for use in Ukraine, although both have denied this.
- Iranian Satellites:
- Kowsar: Developed for Earth observation to support environmental monitoring and agriculture.
- Hodhod: Aimed at gathering data for research and development to strengthen Iran's private space sector.
- Khayyam and Pars-1, launched in 2022 and 2023, were part of Iran's national space expansion for civilian purposes.



NISAR Satellite

ISRO and NASA are planning to launch a new satellite called NISAR in early 2025 that will help keep track of Earth's surface on land and ice-covered areas.

- NISAR Satellite is a Low Earth Orbit (LEO) observatory jointly developed by NASA and ISRO.
- It will be launched by using ISRO's Geosynchronous Satellite Launch Vehicle Mark-II rocket.
- It consists of both L-band and S-band Synthetic Aperture Radar (SAR) instruments, which makes it a dual-frequency imaging radar satellite.



- NISAR will be the first satellite mission to use two different radar frequencies (L-band and S-band) to measure changes in our planet's surface.
- It is capable of penetrating clouds and can collect data day and night regardless of the weather conditions.
- NASA has provided the L-band radar, GPS, a high-capacity solid-state recorder to store data, and a payload data subsystem. ISRO has provided the S-band radar, the GSLV launch system, and spacecraft.
- It also consists of a large 39-foot stationary antenna reflector made of a gold-plated wire mesh which will be used to focus "the radar signals emitted and received by the upward-facing feed on the instrument structure.
- It will measure Earth's changing ecosystems, dynamic surfaces, and ice masses, providing information about biomass, natural hazards, sea level rise, and groundwater.
- NISAR will observe Earth's land and ice-covered surfaces globally with 12-day regularity on ascending and descending passes.
- The satellite will observe movements from earthquakes, ice sheet movements, landslides and volcanic activity, track changes in forests, wetlands and farmland and even check infrastructure stability.
- The NISAR mission will also benefit researchers focused on volcanic activity by helping track surface bulging or sinking caused by magma movement.

Exercise VINBAX 2024

The Exercise "VINBAX 2024" is conducted from 4 to 23rd November 2024 at Ambala and Chandimandir.

- Exercise VINBAX 2024 is a bilateral army exercise conducted between India and Vietnam.
- This edition marks a significant increase in the scope with Bi Service level participation for the first time by personnel of Army and Air Force from both the countries.
- The Indian Army contingent comprising 47 personnel is being represented by a Regiment of the Corps of Engineers along with personnel from other arms and services.
- The conduct of VINBAX-2024 as a field training exercise with enhanced scope from previous editions of bilateral exercise will strengthen mutual confidence, interoperability and enable sharing of best practices between the Indian Army and Vietnam People's Army.
- A 48 hours Validation Exercise with Humanitarian Assistance & Disaster Relief demonstration and equipment display is also part of the schedule to assess the standards achieved by both contingents
- The joint exercise will also provide an opportunity to the troops of both the Contingents to learn about the social and cultural heritages of each other.

Minuteman III Missile

The US army would be carrying out a test launch of a Minuteman III hypersonic nuclear missile hours after voting close on Election Day.

- The LGM-30G Minuteman III is an American Intercontinental Ballistic Missile (ICBM).
- "L" in LGM is the US Department of Defence designation for silo-launched; "G" means surface attack; and "M" stands for guided missile.

- It is the sole land-based component of the U.S. nuclear triad.
- It was designed and manufactured by the Boeing Corporation.
- Originally, it was only supposed to be kept in service for about ten years, but instead, it has been modernized as its replacement, the Ground-Based Strategic Deterrent (GBSD), is due to become available for use in 2029.
- It was the first U.S. missile fitted with multiple independently targetable re-entry vehicles (MIRVs).
- It is a three-stage, solid-fuel missile.
- Speed: Approximately 15,000 mph (Mach 23 or 24,000 kph) at burnout (Hypersonic).

Long Range Land Attack Cruise Missile

The Defence Research and Development Organisation (DRDO) successfully conducted the maiden flight test of its Long Range Land Attack Cruise Missile.

- Long Range Land Attack Cruise Missile (LRLACM) is designed to be launched from both mobile ground-based systems and frontline ships, using a universal vertical launch module, further enhancing its operational flexibility.
- It is also able to execute complex manoeuvres while flying at different speeds and altitudes, showcasing the missile's versatility and precision.
- The LRLACM is equipped with state-of-the-art avionics and software that enhances its performance and reliability.
- These missiles are typically subsonic and can follow terrain-hugging flight paths, making them harder to detect and intercept, thus allowing for a strategic advantage in penetrating enemy defenses.
- The Defence Acquisition Council (DAC) had previously approved LRLACM as a Mission Mode Project, sanctioned under the Acceptance of Necessity (AoN) procedure.
- The missile's successful test is seen as a key milestone in advancing India's defence capabilities, particularly in the area of long-range precision strikes.

Exercise Sea Vigil

The Indian Navy is conducted the fourth edition of the 'Pan-India' Coastal Defence Exercise 'Sea Vigil-24'

- Exercise Sea Vigil is the National Level Coastal Defence Exercise conceptualized in 2018 to validate various measures that have been instituted towards enhancing maritime security since '26/11'.
- The concept of 'Sea Vigil' is to activate the Coastal Security apparatus across India and assess the overarching Coastal Defence mechanism.
- This fourth edition of Ex Sea Vigil involves 06 Ministries and 21 Organisations/ agencies.
- The exercise will focus on strengthening the security of coastal assets like ports, oil rigs, Single Point Moorings, Cable Landing Points and critical coastal infrastructure including the coastal population.
- This year participation by other Services (Indian Army and Air Force) and the planned deployment of a large number of ships and aircraft have enhanced the tempo of the exercise.
- One of the aims of the exercise is to raise awareness amongst coastal communities about maritime security, and thus, the involvement of fishing communities, coastal populace, and students from NCC and Bharat Scouts and Guides will add to the fervour of the endeavour.
- It is serving as a precursor to the Theatre Level Readiness Operational Exercise (TROPEX), conducted biennially by the Indian Navy.

Pinaka Multi-Barrel Rocket Launcher

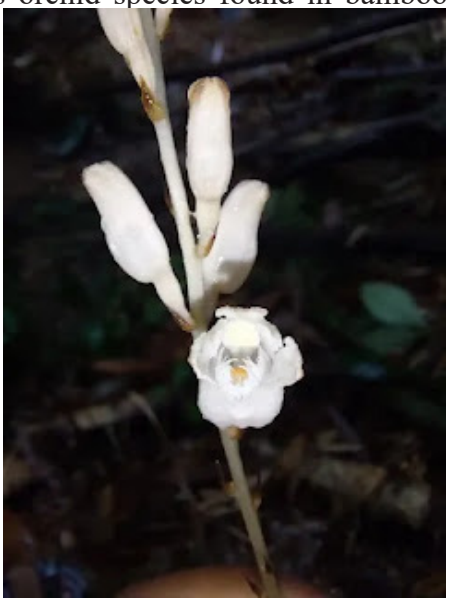
France is considering India's Pinaka Multi-Barrel Rocket Launch (MBRL) system for its requirements and is soon going to carry out a detailed evaluation of the system.

- Pinaka Multi-Barrel Rocket Launcher is designed by the Armament Research and Development Establishment (ARDE), a laboratory of the DRDO.
- It was first used during the Kargil War, where it successfully neutralised Pakistan Army positions on the mountain tops.
- It delivers lethal and responsive fire against a variety of area targets, such as exposed enemy troops, armoured and soft-skin vehicles, communication centres, air terminal complexes, and fuel and ammunition dumps.

- It consists of a multi-tube launcher vehicle, a replenishment-cum-loader vehicle, a replenishment vehicle, and a command post vehicle.
- The rocket launcher has two pods containing six rockets each and can neutralise an area of 700 × 500 square metres within 48 seconds.
- The launcher system is supported on four hydraulically-actuated outriggers at the time of firing.
- The system is mounted on a Tatra truck for mobility.
- Range: It has a range of 60 to 75 kilometers.

Gastrodia lohitensis

A team of Indian botanists has identified a new leafless orchid species, Gastrodia lohitensis, in Arunachal Pradesh's Lohit district.



- Gastrodia lohitensis is a leafless orchid species found in bamboo thickets around Tezu and it is named after Lohit district.
- The orchid presents unique adaptations, thriving without sunlight by extracting nutrients from fungi in decomposing leaf litter.
- It grows 50-110 cm tall, the orchid's defining features include a pair of linear calli and ridges on its flower lip, setting it apart from closely related species in Southeast Asia.
- It flourishes only in dense, shaded bamboo canopies, underlining its limited ecological niche.
- With just a small range in the district, Gastrodia lohitensis faces pressures from local land use, including bamboo harvesting and agriculture.

Okinawicius tekdi

Researchers have found a new species of jumping spider on Baner Hill.

- The spider has been named Okinawicius tekdi, after the Marathi word for hill, and takes the number of jumping spiders in India to 326.
- The species was first described by Atharva Kulkarni, an MSc student in environmental science from MIT-World Peace University in Pune.
- A spider species was last discovered in Pune over 30 years ago.

Markhor

The largest wild goat in the world, is battling for survival in Jammu and Kashmir and measures must to protect its habitat to increase its population.

- The markhor is a wild goat species indigenous to the mountainous regions of Central and South Asia.
- It is known for its thick fur, flowing beard and corkscrew horns.
- It is considered to be an apt flagship species for catalysing conservation in these mountain tracks.
- It is adapted to mountainous terrain, between 600 and 3,600 m elevation, with open woodlands, scrublands and light forests.
- It is a diurnal animal and is mainly active in the early morning and late afternoon.
- It is found in the moist to semi-arid mountain tracts of Pakistan, India, Afghanistan, Uzbekistan, Turkmenistan and Tajikistan.
- In J&K, Markhor's population is found in Shopian, Banihal passes to the Shamsbari area of the Kazinag Uri and Pir Panjal range in Poonch.
- Conservation status
- IUCN: 'Near Threatened'
- Wildlife (Protection) Act, 1972: Schedule I
- CITES: Appendix I

Common Cat Snake

The elusive common cat snake was recently discovered in the Valmiki Tiger Reserve, Bihar.

- Common Cat Snake, also known as Indian gamma snake, is a species of rear-fanged snake endemic to South Asia.
- Scientific Name: Boiga trigonata
- In India, it is found all over the country, excluding north-east states after Sikkim; it is also, not found in Indian islands.

- While venomous, the Common Cat Snake's venom is not considered highly dangerous to humans. It primarily uses its venom to subdue prey.
- Its upper body colour is grey-brown, with cream-coloured irregular markings, margined with black colour.
- Unlike other cat snakes of its range, this species bears characteristic "gamma" or "Y"-shaped marking that helps in its quick identification on the field.
- Lifespan: 12-20 years
- IUCN Red List: Least Concern

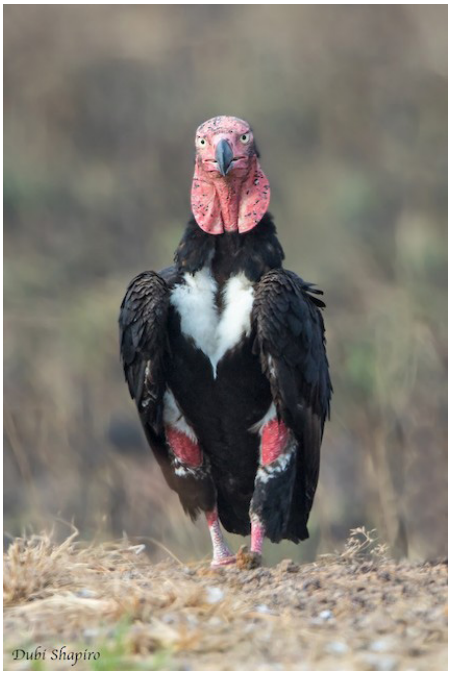
Scarlet Tanager

The rare bird, Scarlet Tanager, was recently spotted in the UK for the first time in 40 years.

- Scarlet Tanager is a strikingly beautiful songbird native to North America.
- Scientific Name: Piranga olivacea
- Breeds in deciduous and mixed deciduous-evergreen forests; winters in forests and forest edges.
- They migrate to tropical forests in Central and South America during winter.
- They are medium-sized songbirds with fairly stocky proportions. They average seven inches in length.
- They have thick, rounded bills suitable both for catching insects and eating fruit.
- In spring and summer, adult males are unmistakable, brilliant red with black wings and tails.
- After breeding, adult males molt to female-like plumage, but with black wings and tails.
- IUCN Red List: Least Concern

Red-Headed Vulture

Red-Headed Vulture was sighted for the first time at Manhampothikunnu near Mavungal in Kasaragod, Kerala.



- Red-Headed Vulture is one of the 9 species of Vulture which are found in India.
- It is also called the Asian King vulture or Pondicherry Vulture
- It is a dark, medium-sized vulture with a bare reddish head and loose flaps on the side of the neck.
- It weighs around 5 kg and averaging over 80 cm in length, the vulture is primarily solitary, often seen alone or with a mate.
- Its black plumage is marked by a distinctive white patch on the abdomen, which becomes more prominent during flight.
- The Red-Headed Vulture is typically found in Central India, Nepal, Myanmar, Thailand, Vietnam, and parts of Kerala, Karnataka, and Tamil Nadu.
- Breeding: Breeding typically takes place between November and January.
- Conservation status
- IUCN Red List:Critically Endangered
- Wildlife Protection Act, 1972: Schedule 1

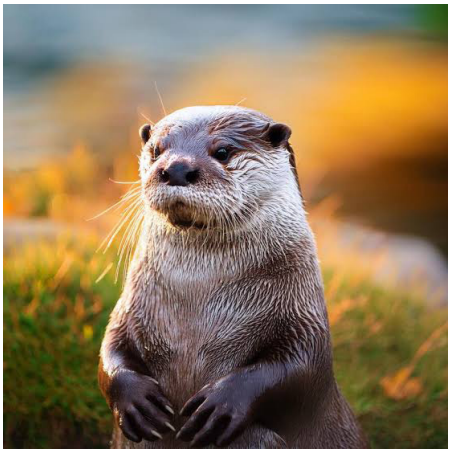
Senna tora Plant

The Tamil Nadu Forest Department is experimenting with the removal of a potential new species of invasive plant Senna tora that has begun emerging in parts of the Mudumalai Tiger Reserve (MTR).

- Senna tora Plant is a native species of Central America.
- It is an annual, perennial or subshrub and grows primarily in the wet tropical biome.
- It is emerging in drier areas and germinates after the south-west monsoon and gradually withers by the end of the year.
- It is used as animal food, a poison and a medicine, has environmental uses and for food.
- Mudumalai Tiger Reserve (MTR)is located in the Nilgiris District of Tamil Nadu state at the tri-junction of three states, viz, Karnataka, Kerala and Tamil Nadu.

Eurasian Otter

A rescue operation conducted by the Pune Forest Department and RESQ Charitable Trust has revealed a rare Eurasian Otter in Indapur, Pune District, a species previously unrecorded in this area.



- The Eurasian otter, also known as the European otter, Eurasian River otter, common otter, and Old-World otter, is a semiaquatic carnivorous mammal native to Eurasia.
- Scientific Name: Lutra lutra
- It has one of the widest distributions of all palearctic mammals, spanning countries in the Middle East, Europe, and Northern Africa, across to Eastern Russia, China, and other Asian countries.
- In India, it occurs in northern, northeast and southern India.
- It lives in a wide variety of aquatic habitats, including highland and lowland lakes, rivers, streams, marshes, swamp forests, and coastal areas, independent of their size, origin, or latitude.
- In the Indian subcontinent, it is found in cold hills and mountain streams.
- It has sleek brown fur, which is often paler on the underside, and a long, lithe body with a thick tail and short legs.
- Adaptations for an aquatic lifestyle include webbed feet, the ability to close the small ears and the nose when underwater, and very dense, short fur that traps a layer of air to insulate the animal.
- Many sensitive hairs (‘vibrissae’) frame the snout; these help the otter to locate prey.
- It has an acute sense of sight, smell, and hearing.
- Vocalizations include a high-pitched whistle between a mother and her cubs, twittering noises produced during play-fighting, and cat-like noises when fighting.
- Conservation Status:
- IUCN: Near threatened
- Wildlife Protection Act, 1972: Schedule II
- CITES: Appendix I

Ottavalo's Andean Mouse

A new species of mouse with a remarkably long tail, dubbed Otavalo's Andean mouse, has been discovered near a dormant volcano in Ecuador.

- It is a new species of mouse with a remarkably long tail.
- It was discovered near Mojanda, a dormant volcano with a caldera filled with the site is about a 50-mile trip from Quito, a city situated in the high Andes of northern Ecuador.
- It has been identified as endemic to the temperate, high-altitude Andean regions of the montane forest.
- It was named in honor of the local Otavalo culture, which is widely recognized for its musical heritage and skilled weaving and textile commerce.

Crinum andhricum

Botanists recently discovered a new species of flowering plant 'Crinum andhricum' in the Eastern Ghats of Andhra Pradesh.

- Crinum andhricum is a new species of flowering plant.
- It was recorded from the Eastern Ghats of Andhra Pradesh.
- The species was named after Andhra Pradesh in recognition of the State where it was first found.
- It is part of the Amaryllidaceae family.
- It is the latest addition to India's Crinum species, bringing the total to 16, with several being endemic to India.
- It has distinct features, including wider, oblanceolate perianth lobes (the outer part of the flower) and a greater number of flowers per cluster, producing between 12 and 38 flowers in each.
- The plant's pedicelled flowers (with a stalk-like structure) make it unique among species in the region.
- The flowers of Crinum andhricum are waxy white, blooming between April and June.
- Standing on a tall stem that reaches up to 100 cm, the plant is well-suited to dry, rocky crevices in the Eastern Ghats.
- Based on its current limited distribution and environmental threats, the researchers have given Crinum andhricum a preliminary status of 'Data Deficient' under the IUCN guidelines.

Durgesh Aranya Zoological Park

Himachal Pradesh's upcoming Durgesh Aranya Zoological Park in Kangra's Dehra constituency is set to become India's first zoo certified by the Indian Green Building Council (IGBC) for sustainable and eco-friendly infrastructure.

- The park will feature 34 enclosures within its Van Vaibhav Path and Biodiversity Court, housing 73 species, including Asiatic lions, crocodiles, gharials, and indigenous birds.
- It emphasizes eco-friendly design and will be the first zoo to earn IGBC certification.
- Aims to attract tourists, create jobs, and promote eco-tourism in Kangra, reinforcing its status as Himachal Pradesh's "Tourism Capital."
- Indian Green Building Council (IGBC) formed in 2001 as part of the Confederation of Indian Industry (CII).
- Headquarters: Based in Hyderabad, India.

Sirpur Lake

Following the order of the National Green Tribunal, a team of Indore Municipal Corporation along with police removed encroachments and 30 stalls from the catchment area in Sirpur Lake recently.

- Sirpur Lake is a human-made wetland located in Indore, Madhya Pradesh.
- It is a 670-acre lake, which is more than 130 years old, made by Maharaja Shivajirao Holkar to generate water supply for the city of Indore.
- The Indore City Gazette, 1908, has many references to Sirpur Lake, utilised for water supply and recreational purposes.
- It is a shallow, alkaline, nutrient-rich lake that floods during the monsoon.
- Sirpur Lake boasts a diverse habitat, featuring extensive wetlands, shrub forests, grasslands, tall trees, and shallow and deep-water areas.
- It is inhabited by 189 species of birds, belonging to 55 families.
- It is also home to several species of reptiles, insects, butterflies, and fish.
- It was designated a Ramsar site under the Ramsar Convention on January 7, 2022.

Lake Kariba

A punishing drought has drained the huge Kariba Lake close to record lows, raising the prospect that the Kariba Dam, which powers the economies of Zambia and Zimbabwe, may have to shut down for the first time in its 65-year history.

- Lake Kariba is a lake in central Africa, along the border between Zambia and Zimbabwe.
- It is positioned 810 miles upstream from the Indian Ocean.
- It is the world's largest man-made lake. It covers an area of 2,000 square miles (5,200 square km).
- It was formed by damming the Zambezi Riverin the Kariba Gorge, where the river narrows between hills of hard rock 250 miles (400 km) below Victoria Falls.
- The Kariba Dam consists of adouble-arch wall. It is 128 meters in height, 617 meters in length, 13 meters wide at its top, and 24 meters wide at the base.
- It provides considerable electric power to both Zambia and Zimbabwe and supports a thriving commercial fishing industry.
- The lake encompasses a total of 102 islands, including well-known ones like Chete Island and Spurwing Island.
- Chete Island boasts the world's largest expanse of protected, undeveloped wetlands and hosts the largest single population of African elephants.

Sukhna Lake

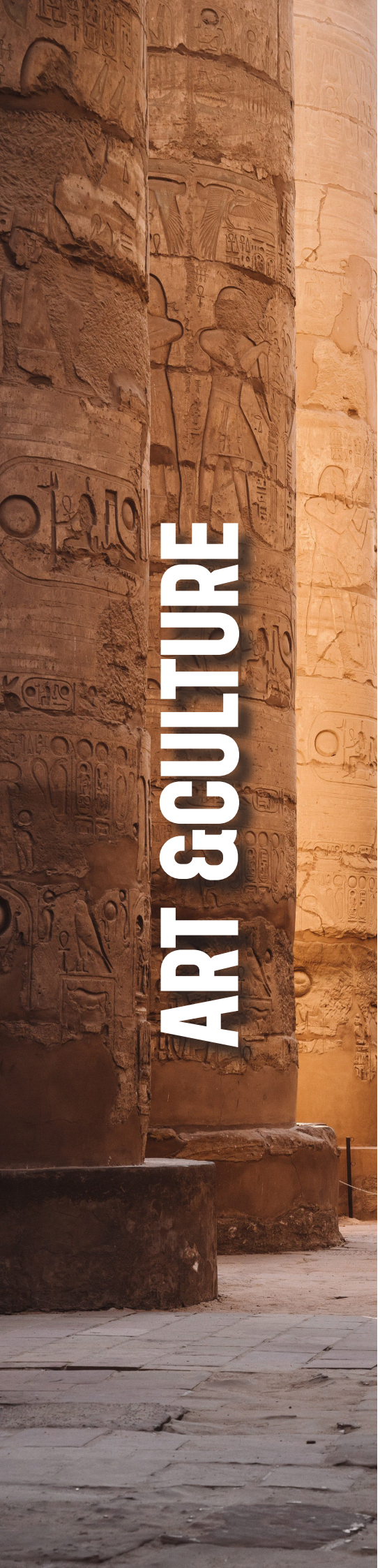
The Union Ministry of Environment, Forest and Climate Change, has finally issued a notification demarcating an area from 1 km to 2.035 km around the Sukhna Wildlife Sanctuary as an Eco-Sensitive Zone (ESZ) on the Haryana side.

- Sukhna Lake is an artificial lake located in Chandigarh, India.
- It lies at the foothills (Shivalik hills) of the Himalayas.
- It was created in 1958 by damming the Sukhna Choe, a seasonal stream coming down from the Shivalik Hills.
- It is declared a National Wetland by the Government of India.
- The catchment area of the lake has rugged terrain and steep slopes, and the soils are predominantly alluvial sandy embedded with layers of clay and are highly susceptible to soil erosion by water run-off action.
- The water flowing into the lake is heavily loaded with silt.
- Sukhna Wildlife Sanctuary Spread over an area of about 26 square kilometers, the sanctuary is home to various species of birds, mammals, and reptiles.
- It is a sanctuary for many exotic migratory birds like the Siberian duck, Storks, and Cranes, during the winter months

Scarborough Shoal

- *China recently released geographic coordinates marking baselines around the contested Scarborough Shoal in the South China Sea.*

- The Scarborough Shoal (also known in English as the Scarborough Reef) is an oceanic coral atoll that developed on top of a seamount into a triangle shape in the eastern part of the South China Sea.
- 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.
- This atoll extends 18 km along its northwest-southeast axis and reaches 10 km along its northeast-southwest axis.
- 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.
- The shoal is the source of an ongoing and, so far, unresolved dispute between the People's Republic of China and the Philippines, with both countries claiming that the shoal lies within their territory and saying they have exclusive rights to access its waters.



Simhachalam Temple

During recent conservation efforts, epigraphists from the Archaeological Survey of India (ASI) uncovered a Telugu inscription on the wall above the statue of Lord Hanuman at the 13th-century Simhachalam temple

- Simhachalam Temple, originally known as Varaha Lakshmi Narasimha Temple, is a Hindu temple located in Visakhapatnam, Andhra Pradesh.
- It is dedicated to the incarnation (avatar) of Vishnu known as Narasimha (the man-lion).
- The temple's architecture is a blend of Kalinga and Dravidian styles, with its main sanctum adorned with intricate carvings and sculptures.
- The presiding deity, Lord Narasimha, is depicted with a human torso and a lion's face, exuding a sense of divine power and grace.
- It boasts of a beautiful stone chariot drawn by horses.
- The Kalyana Mandapa within the temple has 16 pillars with bas reliefs depicting the incarnations of Vishnu.
- The outer walls of the sanctum depict images of a royal personality (said to be King Narasimha) in various postures.

Konark Wheels

Four replicas of the Konark wheels, made of sandstone, have been installed at Rashtrapati Bhavan Cultural Centre and Amrit Udyan.

- This initiative aims to highlight India's cultural heritage, presenting visitors with a glimpse of traditional and historical artistry associated with the 13th-century Konark Sun Temple in Odisha.
- The Konark wheel, built in the 13th century, represents time (Kalachakra), progression, and democracy.
- With 24 spokes, it embodies ancient wisdom and architectural mastery, symbolized in the national flag.
- The wheel served as a sundial in the temple, symbolizing the passage of time and India's commitment to progress and resilience.

Thadou Tribe

The organisers of the Thadou Convention held in Assam's Guwahati event released a 10-point declaration to protect the Thadou tribe's distinct identity and heritage amid the ethnic crisis in Manipur.
Thadou Tribe are an indigenous people who live in the hill country adjacent to the Imphal Valley in the north-eastern state of Manipur.

- Other names: Chillya, Kuki, Kukihin, Teizang and Theruvan.
- They speak Chin and Thado which belongs to the Tibeto-Burman family of the Sino-Tibetan languages.
- The village chief's house is usually the largest dwelling within the village. Outside it, there is a platform upon which men gather to discuss matters of importance and to mediate disputes.
- They practice subsistence activities including animal domestication, cultivation, hunting, and fishing. Jhum (slash-and-burn) agriculture is predominant.
- The god Pathen is believed by the Thadou to have created everything. He is also believed to be the ruler of the universe. Sacrifice is offered to Pathen for health or assistance in times of trouble.
- The Hun-Thadou cultural festival is an annual celebration of this community which is celebrated at the arrival of the New Year

Tumaini Festival

The Tumaini Festival, an annual event held since 2014 at Malawi's Dzaleka Refugee Camp, celebrates the resilience and culture of refugees through music, art, and crafts.

- Tumaini Festival founded in 2014, by Menes La Plume, a Congolese poet.
- To Builds connections and breaks stereotypes by humanizing the refugee experience, allowing people to share common experiences and celebrate cultural diversity.
- 2024 Event: Organized by the camp's youth, many of whom were born in the camp, reflecting local pride and ownership.
- Dzaleka Refugee Camp is located Near Lilongwe, Malawi, originally established on a former prison site.
- Established in 1994, following regional conflicts, particularly in Africa's Great Lakes region.

Yanadi Tribe

Three children of the Yanadi tribe who went missing from their homes at Kalekhanpeta in Machilipatnam, Andhra Pradesh, were traced recently.

- Yanadis are one of the major scheduled tribes of Andhra Pradesh.
- They are among the most vulnerable tribal groups in India.
- They live in extreme conditions of poverty and social exclusion.
- A significant population of Yanadis live in the plains of Nellore, a district in the eastern coastal state of Andhra Pradesh.
- Their mother tongue is Telugu.
- The Yanadis have been associated with occupations such as hunting, gathering, and agriculture, relying on their intimate knowledge of the land and its resources for sustenance.
- They have rich traditional health knowledge, including knowledge for everyday healthcare and specialized knowledge (e.g., snakebite cures).

Cia-Cia Tribe

The Cia-Cia tribe is using Hangul, the Korean alphabet, to document and preserve their indigenous language.

- Cia-Cia tribe is Indigenous community in Buton Island, Indonesia, with a population of around 93,000.
- The Cia-Cia language has existed orally for centuries without a formal script, making it vulnerable to extinction.
- To prevent language loss, Cia-Cia is being transcribed using Hangul, which aligns closely with its phonetic structure.
- Hangul Script:
- Known for its unique phonetic system of circles and lines, representing sounds clearly.
- Adoption for Cia-Cia: Introduced in 2009 for Cia-Cia as Arabic script did not suit the language's sounds.

Maha Kumbh Mela 2025

The Maha Kumbh Mela 2025 in Prayagraj will be held from January 13 to February 26

- Maha Kumbh Mela rooted in Hindu mythology, the Maha Kumbh Mela began as a pilgrimage tradition thousands of years ago, with early references in Maurya and Gupta periods (4th century BCE to 6th century CE).
- Occurs every 12 years, rotating between four locations — Prayagraj, Haridwar, Ujjain, and Nashik — each with its sacred rivers: Ganges, Yamuna, Shipra, and Godavari.
- Prayagraj hosts the Mela at the Triveni Sangam, the confluence of the Ganges, Yamuna, and the mythical Sarasvati, considered highly auspicious for spiritual cleansing.
- Recognized as a UNESCO intangible cultural heritage, it represents a quest for spiritual purity, unity, and self-realization, attracting diverse pilgrims, sadhus, and international seekers.

AL-NATAH

Archaeologists have uncovered a 4,000-year-old fortified town in Saudi Arabia, illustrating the gradual shift from nomadic to urban lifestyles.

- French archaeologist Guillaume Charloux and his crew led the discovery.
- Excavation at the Khaybar oasis has found that a sophisticated Bronze Age town existed between 2400 and 1500 BCE.
- The town reveals- The presence of an organised settlement in an era previously believed to be dominated by nomadic pastoral societies.
- It is enclosed by a 14.5-kilometre wall and occupies a 2.6-hectare area.
- It housed up to 500 residents who lived in multi-story dwellings.
- The town was likely a centre for agricultural production and trade, sustaining a cooperative society in the otherwise arid environment.
- Residents of Al-Natah lived in rectangular dwellings, constructed from materials such as stone and mudbrick, with narrow paths connecting the various structures.
- The town's layout included burial sites, with some graves and tiered towers marking higher social status.
- A similar town in southern Saudi Arabia, Al Faw, was given UNESCO World Heritage Site status this year.

1st Bodoland Mahotsav

The Prime Minister inaugurated the 1st Bodoland Mahotsav in New Delhi.

- Bodoland Mahotsav is a mega event on language, literature, and culture to sustain peace and build a Vibrant Bodo Society.
- The theme for the Mahotsav is 'Peace and Harmony for Prosperous Bharat' with a focus on the rich culture, language and education of the Bodo community along with other communities from the Bodoland Territorial Region.
- It aims to capitalise on the richness of cultural and linguistic heritage, ecological biodiversity and touristic potential of Bodoland.
- It is also about celebrating the remarkable journey of recovery and resilience ever since the signing of the Bodo Peace Accord in 2020.

Menhir

An Iron Age menhir, a memorial pillar locally known as 'Niluvu Rayi' found in Kamasanpalli village of Nagarkurnool district in Telangana, faces neglect.

- A menhir is a large upright standing stone.
- Menhirs may be found singly as monoliths, or as part of a group of similar stones.
- They are widely distributed across Europe, Africa, and Asia, but are most numerous in Western Europe.
- Their size can vary considerably; but their shape is generally uneven and squared, often tapering towards the top.
- Often menhirs were placed together, forming circles, semicircles, or vast ellipses.
- Megalithic menhirs were also placed in several parallel rows, called alignments. The most famous of these are the Carnac, France, alignments, which include 2,935 menhirs.

MISCELLANEOUS

National Commission for Indian System of Medicine

The National Commission for Indian System of Medicine (NCISM) conducted a workshop for drafting the Ayurveda Process Handbook at the NCISM office.

- National Commission for Indian System of Medicine is the statutory body constituted under NCISM Act, 2020. It replaced the erstwhile regulator Central Council for Indian Medicine (CCIM) to ensure transparency.
- The Act aims to provide for a medical education system that improves access to quality and affordable medical education, ensures availability of adequate and high quality medical professionals of Indian System of Medicine in all parts of the country.
- It consists of 29 members, appointed by the Central Government.
- A Search Committee will recommend names to the Central Government for the post of Chairperson, part time members, and presidents of the four autonomous boards set up under the NCISM.

ncism
प्राणाभिसरः प्राणायतनानाम्
National Commission for Indian System of Medicine

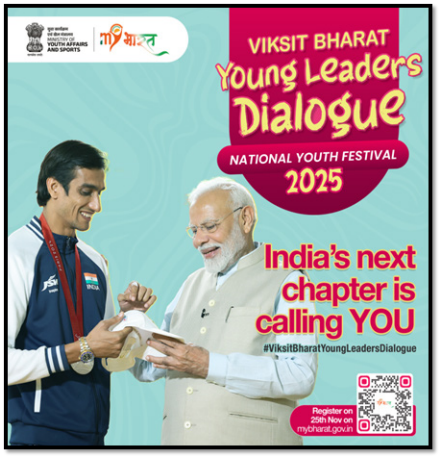
"Waves" OTT Platform

Prasar Bharati, India's public broadcaster, launched its OTT platform.

- "Waves" during the opening ceremony of the International Film Festival of India (IFFI) 2024.
- Waves OTT Platform developed by Prasar Bharati, under the Ministry of Information and Broadcasting.
- Inaugurated at IFFI 2024.
- Tagline: "Waves – Family Entertainment Ki Nayi Lehar."
- It Offers content in 12+ languages, including Hindi, English, Tamil, Konkani, and Assamese. Features infotainment, gaming, education, and shopping.
- Streams 65 live TV channels, including "Mann Ki Baat" and Ayodhya's Prabhu Shriram Lalla Aarti.

Viksit Bharat Young Leaders Dialogue

The Prime Minister of India announced the 'Viksit Bharat Young Leaders Dialogue' (VBYLD) to be held in January in Delhi, coinciding with Swami Vivekananda's 162nd birth anniversary, and highlighted the National Cadet Corps (NCC) role in youth development.



- VBYLD aims to engage young minds from across India with no political background in politics, marking a significant initiative for youth empowerment.
- The event will host 2,000 selected youth, with the PM engaging them alongside national and international experts to present innovative ideas for the nation's progress, helping to create a roadmap for India's future.
- The NCC was established in 1948 (on the recommendation of H. N. Kunzru Committee-1946), under the NCC Act of 1948, with the aim to develop character, comradeship, leadership, and service ideals in the youth.
- It also seeks to stimulate interest in national defence and build a reserve for the Armed Forces in emergencies.
- The NCC was preceded by the University Corps (1917), later evolving into the University Training Corps (UTC) in 1920, and the University Officers Training Corps (UOTC) in 1942.
- NCC is headed by a Director General, an Army Officer of the rank of Lieutenant General, who oversees its operations from the NCC Headquarters in Delhi.

Bidar Fort : Waqf Board Identified As Its Property

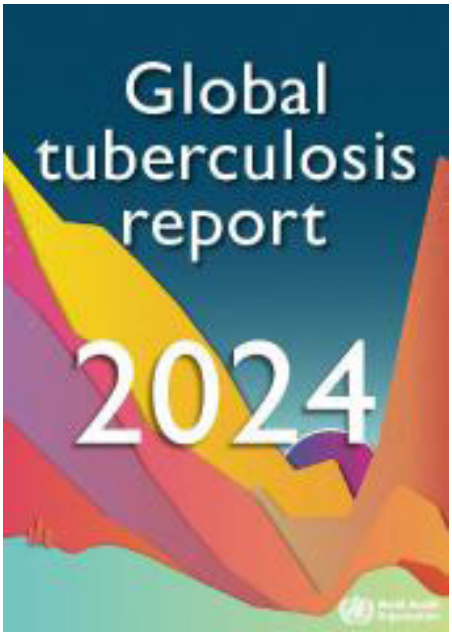
The Waqf Board identified 17 monuments inside the historic Bidar Fort in Karnataka as its property.

- Bidar Fort is situated in Bidar City on the northern plateau of Karnataka, India.
- The history of Bidar Fort dates back over 500 years, starting with the reign of the Western Chalukya dynasty.
- Sultan Ahmed Shah Wali of the Bahmani dynasty made Bidar his capital in 1430 and renovated it as an impressive citadel.
- It had been built of trap rock. Stone and mortar were used to build the fort walls.

- The entrance gate has a lofty dome, the interior of which had been painted in bright colours.
- Bidar Fort includes:
  - o Islamic and Persian architecture,
  - o Seven main entrances,
  - o 37 bastions (Balcony structures extending from the fort) of octagonal shape with metal-shielded cannons,
  - o Mosques and mahals,
  - o Thirty-plus Islamic monuments.
- The Bahmani Kingdom rose to power after the Turkish Governor Ala-ud-din Hassan Bahman Shan established an independent empire by revolting against the Sultan of Delhi Sultanate, Muhammad Bin Tughlaq in 1347.

Global Tuberculosis (TB) Report

It is an annual report published by the World Health Organization (WHO).



- It provides a comprehensive and up-to-date assessment of the TB epidemic and of progress in prevention, diagnosis, and treatment of the disease at global, regional, and country levels.
- Highlights of the 2024 Report:
- It shows 8.2 million people were newly diagnosed with TB in 2023, a figure that represents the highest number of TB cases recorded by the WHO since it began global TB monitoring in 1995.
- It also marks a significant increase from the 7.5 million new TB cases reported in 2022.
- Although the estimated number of 1.25 million TB deaths in 2023 is down from the 1.32 million recorded in 2022 and continues a declining trend from the height of the COVID-19 pandemic, that number still far surpasses the 320,000 COVID deaths officially reported to the WHO last year.
- The data show that 30 mostly low- and middle-income countries (LMICs) bear 87% of the global TB burden, with five countries—India (26%), Indonesia (10%), China (6.8%), the Philippines (6.8%), and Pakistan (6.3%)—combining for 56% of the burden.
- 55 percent of people who developed TB were men, 33 percent were women, and 12 percent were children and young adolescents.
- According to the report, a significant number of new TB cases are driven by five major risk factors: undernutrition, HIV infection, alcohol use disorders, smoking, and diabetes.
- In 2023, India was estimated to have had 27 lakh TB cases, of which 25.1 lakh persons were diagnosed and put on treatment.
- This has buoyed India's treatment coverage to 89 percent in 2023 from 72 percent in 2015, thereby bridging the gap of missing cases.
- It acknowledged a drop in India's TB incidence – from 237 per lakh population in 2015, to 195 per lakh population in 2023, accounting for a 17.7 percent decline.

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