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# Contents

## Mains Topics

46th Session of the World Heritage.....	3
Share of Women in Unincorporated Sector Enterprises.....	5

## POLITY

1. Governing Council Meeting of NITI Aayog.....	7
2. Sub-Classification of SCs and STs.....	7
3. MSSC Scheme.....	8
4. Hema Committee Report.....	8
5. Pradhan Mantri Awas Yojana-Urban 2.0.....	8
6. Special Lok Adalat Drive.....	9
7. Prerana Programme.....	9
8. Scheme for Special Assistance to States for Capital Investment 2024-25.....	9
9. Prime Minister Employment Generation Programme.....	10
10. Nagaland's DRTPS Initiative.....	10

## ECONOMY

11. Liquidity Coverage Ratio.....	11
12. Banking Laws (Amendment) Bill, 2024.....	11
13. Diamond Imprest Licence.....	11
14. MUDRA 2.0 Loans.....	12
15. Investor Education and Protection Fund.....	12
16. Fully Accessible Route (FAR).....	13
17. Overnight Index Swap.....	13
18. Unified Lending Interface.....	13
19. Price Monitoring System App.....	14
20. Self-Regulatory Organisations.....	14

## INTERNATIONAL RELATIONS

21. Quad Foreign Ministers Meeting.....	15
22. International Labour Organization.....	15
23. Global Development Compact.....	16
24. Orangutan Diplomacy.....	16
25. BIMSTEC Free Trade Agreement.....	16
26. Supply Chain Council.....	17
27. 10 <sup>th</sup> Anniversary Year of the Act East Policy.....	17

28. Multidimensional Vulnerability Index.....	17
29. Monkeypox a Public Health Emergency.....	18
30. India and Japan 2+2 Meet.....	19

## ENVIRONMENT

31. Achanakmar Tiger Reserve.....	20
32. Gross Environment Product Index.....	20
33. Forest Clearance for Non-Foresting Activities in WLS.....	21
34. The State Of The World's Mangroves 2024.....	21
35. Ideas4LiFE Portal.....	22
36. Great Barrier Reef.....	22
37. PARIVESH 2.0 Portal.....	22
38. Clean Plant Programme.....	23
39. New Ramsar Sites.....	24
40. PM-PRANAM Initiative.....	24

## GEOGRAPHY

41. Shiveluch Volcano: Erupted.....	25
42. Omkareshwar Floating Solar Project.....	25
43. Teesta-V Hydropower Station.....	26
44. Earth's Rotational Dynamics: Study.....	26
45. Lunar Magma Ocean.....	26
46. Landslides In Wayanad.....	27
47. Deep Winter Heatwaves.....	27
48. Glacial Lakes.....	28
49. OI Doinyo Lengai Volcano.....	28
50. Pyrocumulonimbus Clouds.....	29

## SCIENCE AND TECH

51. Nano-MIND Technology.....	30
52. National Space Day 2024.....	30
53. Kindlins : Adapter Proteins.....	31
54. Liquid Water on Mars.....	31
55. NEOWISE Telescope.....	32
56. Genome Editing.....	33
57. Rashtriya Vigyan Puraskar.....	33
58. Polaris Dawn Mission.....	33
59. Eta Carinae.....	34
60. India's First Quantum Computer.....	34

**DEFENCE**

61. Tarang Shakti.....	36
62. Exercise Udara Shakti.....	36
63. Maritime Partnership Exercise.....	37
64. Typhoon-K Vehicle.....	37
65. Exercise MITRA SHAKTI.....	37
66. Astra Missile.....	38
67. Shaheen-II Missile.....	38
68. Long Range Glide Bomb.....	39
69. INSArighat.....	39
70. Aarogya Maitri Health Cube.....	40

**SPECIES IN NEWS**

71. Bent-Toed Geckos.....	41
72. Sloth Bear.....	41
73. Gastrodia indica : Discovery.....	42
74. Hoverflies : New Species.....	42
75. Schistura sonarengensis.....	43
76. Gentoo Penguin.....	43
77. Neelakurinji .....	44
78. Four-Ringed Butterfly.....	44
79. Slow Loris.....	45
80. Owlflies.....	45

**PLACES IN NEWS**

81. Galathea Bay.....	46
82. Guru Ghasidas-Tamor Pingla Tiger Reserve.....	46
83. Guam Island.....	47
84. Mount Kilimanjaro.....	47
85. Nankai Trough.....	47

**ART & CULTURE**

86. Vattezhuthu : Discovered.....	48
87. Cultural Property Agreement.....	48
88. Juanga Tribe.....	49
89. 70th National Film Awards 2024.....	49
90. Eri Silk.....	50
91. Thadou People.....	50
92. Lunisolar calendar.....	50
93. Movie Laapataa Ladies.....	51
94. Gotipua Dance.....	51
95. Humayun's Tomb.....	52

**MISCELLANEOUS**

96. Master Clock System for Railways.....	53
97. Grain ATM.....	53
98. Amrit Bharat Station Scheme.....	54
99. Disaster Management (Amendment Bill), 2024.....	54
100. Natal Indian Congress.....	55



# 46th Session of the World Heritage Committee

## **India's Role and Achievements:**

• India is serving a four-year term on the 21-member World Heritage Committee (WHC) from 2021 to 2025. This election underscores India's significant role in the global effort to preserve and recognize world heritage sites.

## **World Heritage Sites in India:**

- India is home to 42 properties inscribed on the World Heritage List, categorized as follows:
- 34 Cultural Sites: Recognized for their historical, architectural, and cultural importance.
- 7 Natural Sites: Noted for their outstanding natural beauty and ecological value.
- 1 Mixed Heritage Site: Combines both cultural and natural significance.

## **Recent Additions:**

- In the past decade, India has added 12 sites to the World Heritage List. Notable recent additions include:
- Santiniketan (West Bengal): Linked to Nobel laureate Rabindranath Tagore.
- Sacred Ensembles of the Hoysalas (Karnataka): Famous for their exceptional temple architecture.

## **Tentative List:**

- India has 57 sites on the Tentative List, awaiting future consideration for inclusion in the World Heritage List. This reflects the nation's diverse and rich heritage.

### **World Heritage Committee Functions:**

- The Committee oversees the implementation of the World Heritage Convention, manages the World Heritage Fund, and allocates financial assistance to States Parties.
- It meets annually and is composed of 21 representatives from States Parties elected by their General Assembly.
- The Committee decides on the inscription of properties on the World Heritage List, reviews conservation reports, and addresses properties at risk of degradation.

### **World Heritage Convention:**

- Established in 1972, the Convention Concerning the Protection of the World Cultural and Natural Heritage aims to conserve both cultural and natural sites of outstanding universal value.
- Signatory countries commit to preserving these sites, reporting on their condition, and undertaking restoration if necessary.

### **Heritage Types:**

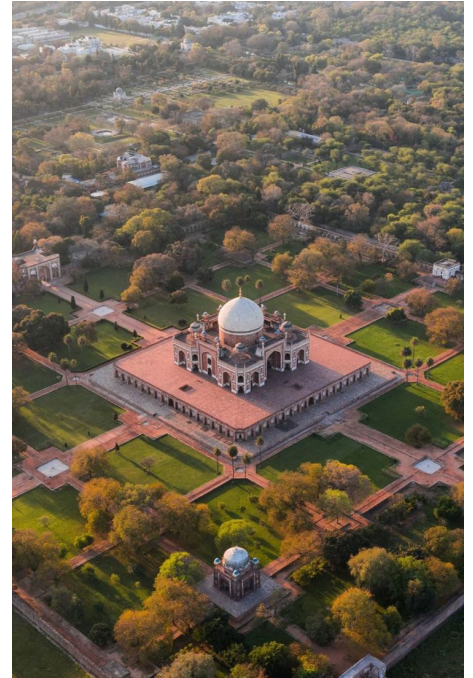
- Cultural Heritage: Includes tangible elements like monuments and artifacts, as well as intangible aspects such as traditions and performing arts.
- Natural Heritage: Encompasses biodiversity, ecosystems, geological formations, and landscapes with universal significance.
- Mixed Heritage: Properties with both cultural and natural values.

### **Project PARI:**

- The Ministry of Culture has launched Project PARI (Public Art of India) for the 46th World Heritage Committee Meeting.
- This project celebrates India's artistic legacy through modern interpretations, featuring wall paintings, murals, sculptures, and installations.

### **Artistic Contributions:**

- The project showcases a range of traditional Indian art forms, including:
  - Phad Paintings (Rajasthan), Thangka (Sikkim/Ladakh), Gond Art (Madhya Pradesh), Tanjore Paintings (Tamil Nadu)
  - Kalamkari (Andhra Pradesh), Alpona (West Bengal), Cheriya (Telangana), Pichhwai (Rajasthan)
  - Lanjia Saura (Odisha), Pattachitra (West Bengal), Bani Thani (Rajasthan), Warli (Maharashtra)
  - Pithora (Gujarat), Aipan (Uttarakhand), Kerala Murals (Kerala), Alpana (Tripura)



# Share of Women in Unincorporated Sector Enterprises

- Annual Survey of Unincorporated Sector (ASUSE) 2022-23: This survey categorizes workers into manufacturing, trade, and other services, excluding agriculture and public sector entities.

## Data Analysis:

- Female Workforce Proportion: The share of female workers increased slightly from 25.52% in ASUSE 2021-22 to 25.63% in ASUSE 2022-23.
- Female Proprietors: In the manufacturing sector, approximately 54% of proprietary establishments were led by female proprietors.



### Regional Distribution:

- Southern and some eastern states show a higher percentage of women owners and workers in unincorporated enterprises.
- Telangana leads with 41%, followed by West Bengal and Odisha, both exceeding 30%.
- Western, northern, and central states have lower proportions of women in these enterprises.

### Nature of the Unincorporated Sector:

- This sector includes roles ranging from street vending to specialized tasks like tailoring and car repair, requiring varying levels of capital and skill.
- Entrepreneurs may operate individually, involve unpaid family members, or hire paid workers. Businesses can be run from homes, small shops, or workshops.
- Women play a crucial role across various industries and activities within this sector.

### Challenges Faced by Women:

- Unpaid Family Workers: Women have a significantly higher share among unpaid family workers compared to other job types.
- Income Levels: Women's income often remains low due to limited skill development and bargaining power.
- Gender Pay Gap: Women generally earn less than men for similar work, contributing to ongoing economic inequality.
- Lack of Social Security: Many women lack access to health insurance, pensions, and other safety nets.
- Informal Nature of Work: The unorganized sector's lack of formal contracts leaves women vulnerable to exploitation.



### Major Initiatives:

- Training and Skill Development: The Government provides training through Women Industrial Training Institutes, National Vocational Training Institutes, and Regional Vocational Training Institutes.
- Skill India Mission: Aims to enhance women's economic independence through skill development and vocational training.
- National Skill Development Policy: Focuses on inclusive skill development to increase women's participation and economic productivity.
- Pradhan Mantri Kaushal Vikas Kendras: Emphasize building infrastructure for women's training and apprenticeships.
- Support Schemes: Initiatives like Pradhan Mantri Mudra Yojana, Stand Up India, and the Prime Minister's Employment Generation Programme (PMEGP) help women establish their own enterprises.

### Way Forward:

- Promote Economic Justice: Recognize and support women's contributions in the unincorporated sector, promoting policies that ensure fair opportunities and compensation.
- Address Workplace Inequities: Implement measures for equal pay, safe working conditions, paid maternity leave, and improved educational access to tackle gender disparities.
- Invest in Skill Development: Expand training programs, support women entrepreneurs, and enhance access to technology for better job opportunities and leadership roles.
- Recognize and Include Women's Contributions: Incorporate women's perspectives in policy-making, extend social security benefits, and foster cultural shifts to value women's work.
- Build an Equitable Society: Addressing the unique needs of women in the unincorporated sector supports broader economic development, social cohesion, and the creation of a prosperous, equitable society.



# Governing Council Meeting of NITI Aayog

- The 9th Governing Council Meeting of NITI Aayog, conducted to discuss the “Viksit Bharat @2047” theme, aiming to establish a framework for India’s development as a developed nation by 2047.
- India aims to become the world’s third-largest economy by 2047, targeting a GDP of USD 30 trillion. This ambition underscores a focus on sustained growth, innovation, and global competitiveness.
- The Prime Minister emphasized the importance of states in achieving national goals, urging each state and district to create a vision aligned with the national goal of a developed India by 2047.

## Key takeaways included:

- **Eradicating Poverty:** A push for ‘zero poverty’ villages and holistic grassroots development.
- **Investment and Governance:** Infrastructure, law and order, and good governance were highlighted to attract investment, along with an ‘Investment-friendly Charter’ for states.
- **Youth and Demographics:** Skilling youth to leverage India’s demographic dividend and initiating Demographic Management Plans for future population ageing.
- **Agriculture and Environment:** Promoting productivity, agricultural diversification, and natural farming to enhance soil fertility and access global markets.
- **Key Focus Areas:** Addressing key themes like drinking water, electricity, health, education, and land management.
- **Capacity Building:** Encouraging states to build capacity for officials and collaborate with the Capacity Building Commission.
- **Water and Technology:** Proposing river grids for better water management, and stressing technology integration, cybersecurity, and AI for efficient governance.

## Sub-Classification of SCs and STs

The Supreme Court’s ruling in the case of State of Punjab and Ors Vs Davinder Singh and Ors on August 1, 2024, allows states to sub-classify Scheduled Castes (SCs) and Scheduled Tribes (STs) for targeted reservations.

- **Sub-Classification Allowed:** States can now create sub-categories within SCs and STs for more targeted reservations.
- The Court emphasized the need to exclude the ‘creamy layer’—more advantaged members—within SC and ST groups from affirmative action benefits.
- States must conduct studies before implementing sub-classification, and their decisions are subject to judicial review.
- The criteria may include educational background, similar to the OBC model but adjusted for SC/ST contexts
- The state cannot earmark 100% reservation for a sub-class while allowing sub-classification
- The State’s power to sub-classify is subject to judicial review.
- Sub-classification does not violate the principle of equality enshrined under Article 14 and the President’s exclusive authority under Article 341 to identify SCs.

## Mahila Samman Savings Certificate (MSSC) Scheme

- Mahila Samman Savings Certificate (MSSC) Scheme is a one-time scheme announced in Budget 2023 and will remain available for a two-year period, i.e., up to March 2025.
- It is a risk-free scheme dedicated towards women and girls of all age groups.
- The scheme offers a maximum deposit facility of up to Rs 2 lakh in the name of women or girls for a tenure of 2 years.
- The minor account can also be opened by the guardian.
- The deposit amount under this scheme is limited. A minimum of Rs. 1000 and any sum in multiples of one hundred rupees may be deposited in an account subject to a maximum of Rs. 2 lakhs.
- It offers a fixed interest rate of 7.5 percent. Interest shall be compounded every quarter and credited to the account.

## Hema Committee Report

The Hema committee report on the Malayalam film industry was released. It has revealed alarming instances of sexual abuse, gender discrimination, and inhuman treatment of women in the Malayalam film industry.

- It was led by retired Kerala High Court judge Justice K Hema, with members including veteran actor Sharada and retired IAS officer K B Valsala Kumari.
- It include unwanted physical advances even before commencing work, rape threats, code names for women who would agree to compromise among other shameful acts
- The report highlights the prevalence of the casting couch, where women are often forced to exchange sexual favours for job opportunities.
- Directors and producers often coerce female actors into making compromises, with those who comply being termed “cooperating artists.”
- The report indicates that the Malayalam film industry is plagued by criminal influence.
- Although such crimes are covered by the Indian Penal Code and the Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act 2013, women in the film industry are apprehensive about the consequences of lodging an official complaint.
- The situation worsens during menstruation when female artists struggle significantly with changing or disposing of their sanitary products.



## Pradhan Mantri Awas Yojana-Urban (PMAY-U) 2.0: Approved

- The Union Cabinet has approved the Pradhan Mantri Awas Yojana-Urban (PMAY-U) 2.0, which aims to provide financial assistance to help one crore urban poor and middle-class families build, purchase, or rent affordable housing over five years.
- The scheme, targets families with no permanent house and offers subsidies on home loans for economically weaker sections (EWS), low-income groups (LIG), and middle-income groups (MIG).
- The program also includes support for rental housing and innovative construction technologies to ensure better living conditions in urban areas.

## Special Lok Adalat Drive

The Supreme Court of India has launched a week-long special Lok Adalat drive to address and resolve long-standing disputes as part of its 75th anniversary (diamond jubilee) celebrations.

- This initiative aims to tackle the substantial backlog of cases and provide expedited justice.
- The initiative involves the first seven Benches of the Supreme Court, with Chief Justice leading a five-member panel that includes prominent judges and legal professionals.
- Cases Includes matrimonial disputes, property disputes, motor accident claims, land acquisition, compensation, and service and labour issues.
- Citizens with pending cases are encouraged to participate for amicable and speedy resolutions.
- The drive employs an informal, technology-based solution to facilitate dispute resolution, making the process more accessible and efficient for the public.
- Lok Adalats are informal, voluntary and conciliatory dispute resolution forums based on Gandhian principles, which have statutory backing under the Legal Services Authorities Act, 1987.



## PRERANA PROGRAMME

- Prerana Programme was launched in January 2024 by the Union Education Ministry.
- It is driven by a strong commitment to integrate principles of the Indian education system and the philosophy of value-based education which is a cornerstone of the National Education Policy (NEP) 2020.
- Prerana is a week-long residential program for selected students of class IX to XII.
- It is an experiential and inspirational learning program for students with the best-in-class technology where heritage meets innovation.
- A batch of 20 selected students (10 boys and 10 girls) attends the program every week from various parts of the country.
- Prerana program is running from a Vernacular School, established in 1888 in Vadnagar, Mehsana District, Gujarat.



शिक्षा मंत्रालय  
MINISTRY OF  
EDUCATION



## Scheme for Special Assistance to States for Capital Investment 2024-25

- The Centre will provide states with Rs 10,000 crore in incentives for implementing land-related reforms in rural and urban areas, and Rs 5,000 crore for creating a Farmers' Registry during the financial year 2024-25 (FY25).
- In rural areas, Unique Land Parcel Identification Numbers (ULPIN), also referred to as Bhu-Aadhaar, will be assigned to land parcels.
- ULPIN is a number that would uniquely identify every surveyed parcel of land and prevent land fraud, especially in the hinterlands of rural India, where land records are outdated and often disputed.
- Cadastral maps will be digitised, and land subdivisions will be surveyed to reflect current ownership. Additionally, a comprehensive land registry will be established.
- In urban areas, States will receive financial incentives to digitise land records using Geographic Information System (GIS) mapping.
- They are also required to develop IT-based systems for property record administration, updating, and tax management.

# Prime Minister Employment Generation Programme (PMEGP)

- PMEGP is a central sector scheme administered by the Ministry of Micro, Small and Medium Enterprises.
- Objectives are to generate employment opportunities in rural as well as urban areas of the country through setting up of new self-employment ventures/projects/micro enterprises.
- To bring together widely dispersed traditional artisans, rural and urban unemployed youth and give them self-employment opportunities to the extent possible, at their place.
- To provide continuous and sustainable employment to a large segment of traditional and prospective artisans and rural and urban unemployed youth in the country, so as to help arrest migration of rural youth to urban areas.
- To increase the wage-earning capacity of workers and artisans and contribute to increase in the growth rate of rural and urban employment.



# PMEGP

Prime Minister's Employment Generation Programme

## Nagaland's DRTPS Initiative

Nagaland became the first state in India to adopt a Disaster Risk Transfer Parametric Insurance Solution (DRTPS) by signing an MoU with SBI General Insurance.

- The insurance aims to protect critical infrastructure and reduce economic losses from extreme weather events over a three-year period (2024-2027).
- Parametric insurance provides a predefined payout when specific events, like natural disasters, occur, ensuring quick financial support and enhancing the state's resilience.
- The significance of this initiative lies in its ability to enhance Nagaland's financial resilience and safeguard livelihoods against the increasing frequency of extreme weather events.
- Providing quick payouts after disasters helps ensure rapid recovery and reduces economic losses, setting a precedent for disaster risk management in India.



# Liquidity Coverage Ratio

RBI recently issued the draft guidelines for banks on the Liquidity Coverage Ratio (LCR), essentially asking them to set aside higher stock of liquid securities as a buffer on deposits.

- Liquidity Coverage Ratio (LCR) refers to the proportion of highly liquid assets held by financial institutions to ensure that they maintain an on-going ability to meet their short-term obligations (i.e., cash outflows for 30 days).
- 30 days was selected because, in a financial crisis, a response from governments and central banks would typically take around 30 days.
- It is intended to make sure that banks and financial institutions have a sufficient level of capital to ride out any short-term disruptions to liquidity.
- LCR in banking resulted from the Basel III agreement, which is a series of measures undertaken by the Basel Committee on Bank Supervision (BCBS).
- In India, RBI issued Basel III liquidity guidelines in 2012.
- RBI implemented LCR in January 2015, and as per a circular in 2020, banks should maintain sufficient HQLA at all times to meet unexpected withdrawals.



## ECONOMY

### Banking Laws (Amendment) Bill, 2024

A bill proposing changes to banking laws, including allowing up to four nominees for a bank account, was introduced in the Lok Sabha recently.

- The Banking Laws (Amendment) Bill, 2024, aims to strengthen banking governance, enhance reporting consistency to the Reserve Bank of India (RBI), and improve protection for depositors and investors.
- The Bill seeks to elevate audit quality in Public Sector Banks and extend the tenure of directors in cooperative banks, excluding the chairperson and whole-time director.
- These changes are designed to ensure better oversight and accountability within the banking sector.

### Diamond Imprest Licence for Gems and Jewellery Sector

- Commerce and Industry Minister Piyush Goyal has announced the restoration of the Diamond Imprest Licence, a move aimed at revitalizing India's gems and jewellery sector.
- The decision was made during the India International Jewellery Show (IJS) 2024, organized by the Gem and Jewellery Export Promotion Council (GJEPC).

# MUDRA 2.0

The Union Budget 2024 has increased the loan limit under the scheme's Tarun category to Rs 20 lakh, targeting those who have successfully repaid previous MUDRA loans.

- Pradhan Mantri Mudra Yojana (PMMY) is a flagship initiative by the Government of India that was launched in 2015 and aimed at providing affordable credit to micro and small enterprises.
- It focuses on integrating underserved enterprises into the formal financial system by offering them easy access to credit.
- The scheme is designed to “fund the unfunded,” enabling small borrowers to secure loans from various financial institutions including Public Sector Banks (PSBs), Regional Rural Banks (RRBs), Cooperative Banks, Private Sector Banks, Foreign Banks, Micro Finance Institutions (MFIs), and Non-Banking Financial Companies (NBFCs).
- Loan amount: Up to ₹10 lakh for non-farm income-generating activities in sectors such as manufacturing, processing, trading and services.
- Eligibility: Any Indian citizen with a viable business plan for a non-farm sector income-generating activity requiring credit below ₹10 lakh can apply for a MUDRA loan through banks, MFIs, or NBFCs.

Categories of Loans:

- Shishu: Loans up to ₹50,000, aimed at new and micro enterprises.
- Kishore: Loans ranging from ₹50,000 to ₹5 lakh, for businesses in the growth phase.
- Tarun: Loans from ₹5 lakh to ₹10 lakh, for businesses looking to expand further.

## Investor Education and Pro-

Union Finance Minister introduced the Banking Laws (Amendment) Bill, 2024 which proposes to enable the transfer of unclaimed dividends, shares and interest or redemption of bonds to the Investor Education and Protection Fund (IEPF).

- Investor Education and Protection Fund has been established under Section 205C of the Companies Act, 1956 by way of the Companies (Amendment) Act, 1999.
- The following amounts that remained unpaid and unclaimed for a period of seven years from the date they became due for payment are credited to the Fund:

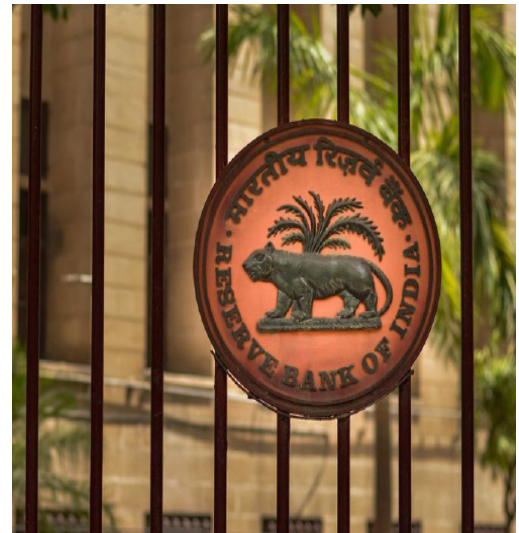
- Amounts in the unpaid dividend accounts of the companies
- The application money received by companies for allotment of any securities and due for refund.
- Matured deposits with companies.
- Matured debentures with companies.
- Grants and donations are given to the fund by the Central Government, State Governments, companies or any other institutions for the purposes of the Fund.
- The interest or other income received out of the investments made from the fund
- This fund is managed by the Investor Education Protection Fund Authority (IEPFA)
- IEPFA was established in 2016 under the Companies Act, of 2013.
- Nodal Ministry: Ministry of Corporate Affairs



## Fully Accessible Route (FAR)

The Reserve Bank of India's (RBI) recent decision to exclude new 14-year and 30-year government securities (G-Secs) from the Fully Accessible Route (FAR) may unsettle bond markets, potentially causing yield spikes for these securities.

- Experts warn that this exclusion could erode investor confidence, reduce participation, and increase yields due to diminished foreign portfolio investor (FPI) demand.
- FPIs generally prefer stable regulatory environments, and changes can lead to uncertainty and adjustments in investment strategies.
- Despite this, large domestic investors are expected to absorb the fresh supply of these tenors.
- RBI's move aims to mitigate the potentially destabilizing effects of large capital flows in fixed-income markets by limiting investments in the more liquid segments.
- The Fully Accessible Route (FAR) regulations impose no limits on investments by Non-Resident Indian retail investors. NRIs can invest in Government Securities both on repatriable and non-repatriable bases, depending on the terms and conditions of the investment scheme.



## Overnight Index Swap

- Overnight Index Swap (OIS) is a derivative instrument where returns under a fixed rate asset are swapped against a pre-determined published index of a daily overnight reference rate for an agreed period of time.
- The primary purpose of an OIS is to manage interest rate risk, particularly the risk associated with fluctuations in the overnight lending rate.
- It is calculated each day.
- This interest rate is based on the average interest rate institutions with loans based on the overnight rate have paid for that day.
- These are instruments that allow financial institutions to swap the interest rates they are paying without having to refinance or change the terms of their existing loan.
- When two financial institutions create an overnight index swap, one of the institutions is swapping an overnight (floating) interest rate and the other institution is swapping a fixed short-term interest rate.
- To get the swap rolling, both the firms would agree to continue servicing their loans, but at the end of a specified time period whoever ends up paying less interest will make up the difference to the other firm.



## Unified Lending Interface

Positioned as a platform to transform the lending space, the Reserve Bank of India (RBI) is currently running a pilot of the Unified Lending Interface (ULI).

- Unified Lending Interface (ULI) is a technological platform that aims to provide a friction-less credit by cutting down the time taken for appraisal, especially for rural and small borrowers.
- It serves as a bridge, connecting banks, Non Banking Financial Companies (NBFCs), fintech firms, and borrowers, enabling a more efficient and transparent credit disbursement process.
- It is expected to cater to a large unmet demand for credit across various sectors, particularly for agricultural and MSME borrowers.
- It facilitates seamless flow of digital information, including land records of various states, from multiple data

service providers to lenders.

- It enables the borrowers to get seamless delivery of credit, quicker turnaround time without requiring extensive documentation.
- It has common and standardised Application Programming Interfaces (APIs) designed for a plug-and-play approach to ensure digital access to information from diverse sources, i.e., information relevant to a lender giving out a loan to a potential borrower.
- The entire system is consent-based, i.e., based on the consent of the potential borrower.
- It reduces the complexity of multiple technical integrations.
- It promotes transparency by allowing borrowers to track their loan applications in real-time.



## Price Monitoring System App

The Union Minister of Consumer Affairs, Food and Public Distribution & New and Renewable Energy launched Version 4.0 of the Price Monitoring System (PMS) Mobile app.

- To improve the quality of price data, the department launched a Mobile App in 2021 – the PMS App – for the reporting of daily prices by the price reporting centres.
- Retail and wholesale prices of commodities from 550 centers are received daily from the State Civil Supplies Departments of the respective State Governments through Mobile App developed by the Department.
- At present the price is monitored for 22 essential commodities (Rice, Wheat, Atta, Gram Dal, Tur (Arhar) Dal, Urad Dal, Moong Dal, Masur Dal, Sugar, Gur, Groundnut Oil, Mustard Oil, Vanaspati, Sunflower Oil, Soya Oil, Palm Oil, Tea, Milk, Potato, Onion, Tomato and Salt).
- The newly added 16 items included are Bajra, Jowar, Ragi, Suji (wheat), Maida (wheat), Besan, Ghee, Butter, Brinjal, Egg, Black Pepper, Coriander, Cummin seed, Red chillies, Turmeric powder and Banana.
- The 38 commodities constitute close to 31% of the total CPI weights as against 26.5% of CPI weights captured by the 22 commodities.
- The price data monitored by the Department provides advance inputs for policy decisions for the Government, RBI and analysts regarding CPI inflation.

## SELF-REGULATORY ORGANISATIONS

- Self-Regulatory Organizations (SROs) is generally a non-governmental entity created by members of a particular industry or sector to help govern the companies in that industry.
  - An SRO sets and enforces rules and standards relating to the conduct of entities in the industry (members) with the aim of protecting the customer and promoting ethics, equality, and professionalism.
  - SROs typically collaborate with all stakeholders in framing rules and regulations.
- Their self-regulatory processes are administered through impartial mechanisms such that members operate in a disciplined environment and accept penal actions by the SRO.
- SROs are private organizations, they are still subject to government-imposed regulation to a degree. However, the government does delegate some aspects of the industry oversight to SROs.
  - Since the SRO has some regulatory influence over an industry or profession, it can often serve as a watchdog to guard against fraud or unprofessional practices.
  - The ability of an SRO to exercise regulatory authority does not stem from a grant of power from the government.



## Quad Foreign Ministers Meeting

The Quad foreign ministers' meeting in Tokyo saw Australia, India, Japan, and the US emphasise ending violence in Ukraine, Gaza, and Myanmar, and expressed their intention to expand the Indo-Pacific Partnership for Maritime Domain Awareness (IPMDA) into the Indian Ocean Region.

- The Quad is an informal diplomatic partnership between Australia, India, Japan, and the United States committed to supporting an open, stable and prosperous Indo-Pacific that is inclusive and resilient.
- It was first proposed by Japanese Prime Minister Shinzo Abe in 2007, it became a formal group in 2017 after overcoming initial setbacks, including Australia's withdrawal due to Chinese pressure.
- Finally in 2017, India, Australia, the US and Japan, came together and formed this "quadrilateral" coalition.



## INTERNATIONAL LABOUR ORGANIZATION

India, a founding member of the International Labour Organization (ILO), is likely to raise a complaint against the UN agency over its India Employment Report 2024.

- International Labour Organization (ILO) is a specialized agency of the United Nations (UN) dedicated to improving labour conditions and living standards throughout the world.
- It was created in 1919, as part of the Treaty of Versailles that ended World War I, to reflect the belief that universal and lasting peace can be accomplished only if it is based on social justice.
- In 1946, the ILO became a specialized agency of the newly formed UN.
- HQ: Geneva,
- It is also a member of the United Nations Development Group (UNDP), a coalition of UN organization aimed at helping meet the Sustainable Development Goals.
- The ILO has 187 member states: 186 out of 193 UN member states plus the Cook Islands.
- It is the only tripartite U.N. agency that brings together governments, employers and workers' representatives of 187-member States



INTERNATIONAL RELATIONS

## GLOBAL DEVELOPMENT COMPACT

PM Narendra Modi proposed a human-centric “Global Development Compact,” during the Voice of the Global South Summit.

- Global Development Compact will be inspired by the development priorities set by the countries of the Global South.
- PM Narendra Modi, in his opening remarks at the virtually held India-hosted third summit, emphasized that global governance and financial institutions established in the last century have failed to address the challenges of the current century.
- PM Modi stated that under this new Compact, needy countries will not be burdened with debt in the name of development finance. Instead, the Compact will draw on India’s own development journey and its experiences in development partnerships.
- The Compact will prioritize trade for development, capacity building for sustainable growth, technology sharing, project-specific concessional finance, and grants. To support trade promotion activities, India will initiate a special fund of USD 2.5 million, with an additional USD 1 million allocated to this cause.
- The prime minister said the compact will help in a balanced and sustainable development of the partner countries.

## ORANGUTAN DIPLOMACY

Malaysia has initiated “Orangutan Diplomacy” to address sustainability concerns related to palm oil-linked deforestation affecting orangutans, in response to backlash.

- Orangutans widely recognized for their distinctive red fur, are considered to be the largest tree-dwelling mammals.
- They are primarily arboreal, spending over 90% of their waking hours in trees.
- Orangutans are highly intelligent and share 4% of their genes with humans, making their conservation even more significant.
- They inhabit the Indonesian island of Sumatra and the Malaysian and Indonesian parts of Borneo.
- Their habitat spans from lowland peat swamp forests to high-altitude mountainous forests, reaching nearly 6 kilometres above sea level
- There are three species of orangutans: Bornean, Sumatran, and Tapanuli.
- Adult males are generally about twice the size of females, standing up to 3 meters tall and weighing up to 130 kg in the wild.
- They are covered in long, sparse orange or reddish hair. They possess arms significantly longer than their legs and have grasping hands and feet with long, curved fingers and toes. Mature males develop prominent cheek pads, a unique feature among primates.
- Lifespan: Orangutans can live up to 50 years in the wild
- They are primarily daytime feeders with a diet mainly consisting of fruit and leaves such as lychees and figs. They also consume nuts, bark, insects, and occasionally bird eggs.
- Orangutans are known for their semi-solitary behaviour.
- Though they are the most solitary among great apes, they do show social tolerance during periods of high fruit availability, coming together in groups known as parties.
- All three species of orangutans are listed as ‘Critically Endangered’ on the IUCN Red List.

## Fast Tracking BIMSTEC Free Trade Agreement

- BIMSTEC members should re-examine the priorities of member nations with regards to trade negotiations so that the delayed Free Trade Agreement can be finalized.
- This was stated by Union Minister of Commerce & Industry Shri Piyush Goyal while delivering his speech at the inaugural edition of the Bay of Bengal Initiative

## SUPPLY CHAIN COUNCIL

India has been elected as Vice-Chair of the Supply Chain Council which is one of the three bodies set up by the 14-member Indo-Pacific Economic Framework (IPEF) bloc.

India and 13 other Indo-Pacific Economic Framework (IPEF) partners have established three supply chain bodies under the landmark Indo-Pacific Economic Framework for Prosperity (IPEF) Agreement relating to Supply Chain Resilience.

- **Supply Chain Council:** To pursue targeted, action-oriented work to strengthen the supply chains for those sectors and goods most critical to national security, public health, and economic well-being.
- **Crisis Response Network:** To provide a forum for a collective emergency response to exigent or imminent disruptions.
- **Labour Rights Advisory Board:** Brings together workers, employers, and governments at the same table to strengthen labour rights and workforce development across regional supply chains.



## Tenth Anniversary Year of the Act East Policy



2024 is the tenth anniversary year of the Act East Policy (AEP).

- The AEP, which replaced the Look East Policy (LEP) in 2014, has laid the foundations for India's engagements with the East.
- India's Act East policy is a diplomatic initiative aimed at promoting economic, strategic, and cultural relations with the vast Asia-Pacific region.
- It serves as a modern version of the Look East Policy, which was launched in 1991 by then Prime Minister V. Narasimha Rao.
- While the Look East Policy primarily focused on economic integration with Southeast Asian countries, the Act East Policy expands its scope to include both economic and security integration.
- The Act East Policy was announced in November 2014 by Prime Minister Narendra Modi.
- The policy aims to enhance economic cooperation with countries in the Asia-Pacific region.
- It seeks to strengthen cultural ties and foster people-to-people connections.
- The Act East Policy aims to develop strategic relationships with neighbouring countries, including those in Southeast Asia and East Asia.
- Enhanced connectivity is a key focus, especially for the North Eastern

## Multidimensional Vulnerability Index

The UN General Assembly recently launched the Multidimensional Vulnerability Index (MVI).

- The MVI is a crucial tool in the global effort to address vulnerabilities and build a more resilient and sustainable future for all nations.
- The Multidimensional Vulnerability Index (MVI) is a comprehensive tool developed by the United Nations to assess the vulnerability of countries, particularly small island developing states (SIDS) and other developing nations.
- It aims to provide a more nuanced understanding of the challenges these countries face, beyond traditional economic indicators.

## HIGH LEVEL PANEL ON THE DEVELOPMENT OF A MULTIDIMENSIONAL VULNERABILITY INDEX



- It helps in identifying the need for concessional financing and other support mechanisms.
- It helps policymakers identify areas of weakness and prioritize interventions to enhance resilience and sustainable development.
- The index can be used by international organizations and donors to allocate resources more effectively, ensuring that aid reaches the most vulnerable populations.

## Monkeypox a Public Health Emergency : WHO

The WHO has declared monkeypox a public health emergency of international concern, with 99,176 cases and 208 deaths reported across 116 countries since 2022. It has been declared a global PHEIC for the second time in two years.

- Mpox (monkeypox) is a DNA virus from the Poxviridae family, first identified in monkeys in 1958.
- It spreads from animals to humans through direct contact, and symptoms include fever, headache, swollen lymph nodes, and a rash that appears within two days of fever onset.
- First detected in humans in 1970 in the Democratic Republic of Congo.
- A new clade (new strain of the virus), primarily spread through sexual contact, is causing concern due to its rapid spread.
- Human-to-human transmission occurs through close contact, including skin-to-skin and sexual contact. Testing is done via PCR.



The outbreak, particularly in Africa, has prompted a global health emergency.

- Public Health Emergency of International Concern (PHEIC) is declared by WHO under the International Health Regulations (IHR) of 2005 when an outbreak is unusual, poses a risk of international spread, and may require immediate global action.
- IHR is a binding agreement involving 196 countries. Since 2009, WHO has declared seven PHEICs, including the H1N1 pandemic, polio, Ebola, Zika, COVID-19, and Mpox.

# India and Japan 2+2 Meet

India and Japan recently held their third 2+2 Foreign and Defence Ministerial Meeting in New Delhi.

- The discussions, which took place against the backdrop of growing geopolitical tensions and China's assertiveness in the Indo-Pacific region, focused on deepening bilateral cooperation across various sectors.

Key Highlights of the India and Japan 2+2 Meet:

- Both countries emphasised their commitment to a free, open, and rules-based Indo-Pacific.
- The strategic alignment is driven by China's growing military presence in the region.
- The ministers supported Association of Southeast Asian Nations (ASEAN)'s unity and centrality, endorsing the ASEAN Outlook on the Indo-Pacific (AOIP).
- The AOIP emphasises ASEAN's central role in fostering cooperation, stability, and peace across the Asia-Pacific and Indian Ocean regions.
- It also reflects ASEAN's commitment to promoting a rules-based regional order founded on the principles of the United Nations Charter.
- They reaffirmed their commitment to advancing cooperation within the Quadrilateral Security Dialogue (QUAD), following the discussions at the Quad Foreign Ministers' Meeting in July 2024.
- Japan and India expressed intentions to collaborate in security assistance to third countries for regional peace and stability.
- The ministers recognized defence cooperation as a pillar of their Special Strategic and Global Partnership.
- Japan's National Security Strategy, issued in 2022, further bolstered the bilateral defence relationship.
- Progress made in multilateral exercises such as Veer Guardian (2023), Dharma Guardian (Military), JIMEX (naval), SHINYUU Maitri (air force) and Malabar (along with Australia and the US) were emphasised.
- They appreciated advancements in unmanned ground vehicles (UGVs) and robotics cooperation.
- Both countries agreed to revise and update the 2008 Joint Declaration to address contemporary security challenges. This update will reflect current priorities and align with the evolving global security landscape.
- Both sides condemned terrorism and violent extremism, with particular emphasis on cross-border terrorism.
- They called for bringing perpetrators of the 26/11 Mumbai attacks and other incidents to justice.
- Efforts to eliminate terrorist safe havens, cut off financing channels, and halt the movement of terrorists were supported, with specific mention of groups such as Al Qaeda, ISIS/Daesh, Lashkar-e-Tayyiba (LeT), and Jaish-e-Mohammad (JeM).



# Achanakmar Tiger Reserve

Achanakmar Tiger Reserve in Chhattisgarh witnessed a significant increase in Tiger count from 5 to 10, according to the All-India Tiger Estimation (AITE) 2022 census.

- Achanakmar Tiger Reserve is situated in Bilaspur district of Chhattisgarh.
- It is part of the huge Achanakmar-Amarkantak Biosphere Reserve.



- It has a corridor connecting Kanha and Bandhavgarh Tiger Reserve and plays a critical role in the dispersal of tigers among these reserves.
- The Maniyari River flows right from the centre of this reserve, which is the forest's lifeline.
- It is home to the Baigas, a forest-dwelling tribal community classified as a "Particularly Vulnerable Tribal Group (PVTG)".
- In 626 hectares of the core area of the reserve, there are 25 forest villages, with approximately 75 percent of the population belonging to the Baiga tribe and the remaining consisting of the Gond and Yadav communities.

## Gross Environment Product Index

Uttarakhand has not just become the first Indian state to launch a Gross Environment Product Index.

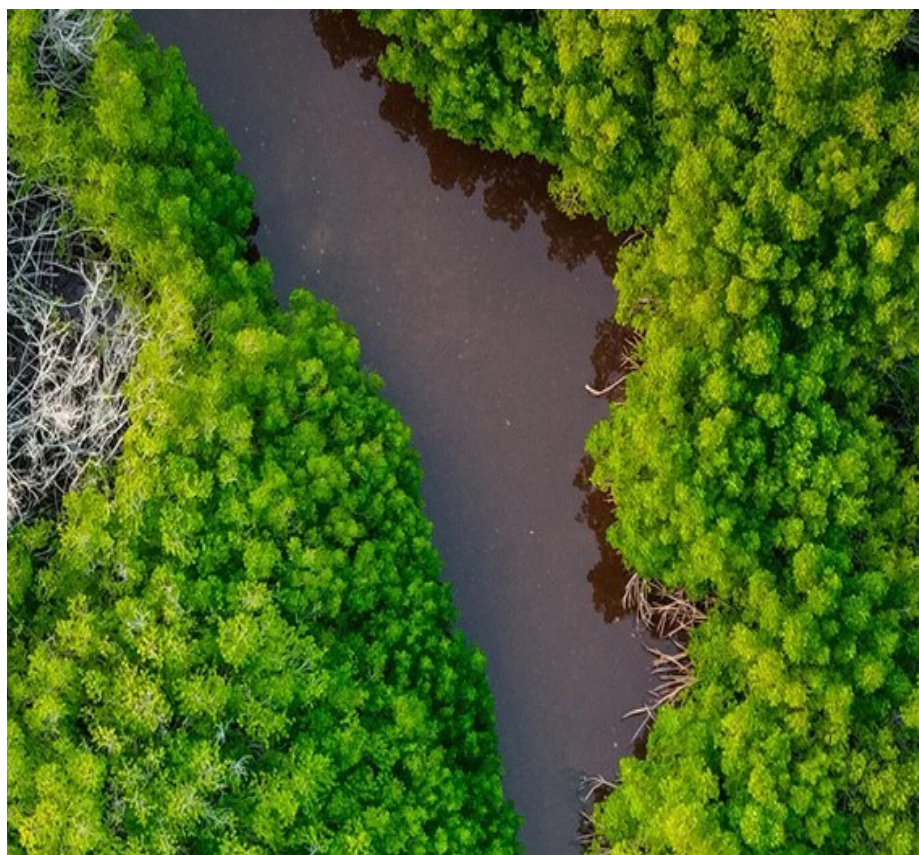
- Gross Environment Product Index is presented as a novel, integrative metric designed exclusively to evaluate ecological development caused by human interventions.
- It will be determined by the condition of four main constituents of the environment which are directly impacted by development activities including air and water quality, number of trees planted in a year and the measure of the area of organic soil.
- The formula is,  $GEP \text{ index} = (\text{Air-GEP index} + \text{Water-GEP index} + \text{Soil-GEP index} + \text{Forest-GEP index})$
- It provides quantized assessments of improvements in air, water, soil, and forest quality.
- It helps in assessing the impact of anthropological pressure on our ecosystem and natural resources.
- It provides a robust and integrated method for assessing a state's ecological growth, capturing various facets of environmental well-being as a result of human actions



# The State Of The World's Mangroves 2024

A report titled “The State of the World’s Mangroves 2024” was released by the Global Mangrove Alliance (GMA) on World Mangrove Day (26 July).

- The GMA is the preeminent alliance of 100-plus members driving the conservation and restoration for the world’s mangroves.
- The latest world maps (GMW v4.0), developed by the Global Mangrove Watch, and provides a six fold improvement in spatial resolution.
- It maps 147,256 km<sup>2</sup> of mangroves in 2020, adding data for six new territories.
- Southeast Asia holds about one-third of the world’s mangroves, with Indonesia alone accounting for 21%.
- Mangroves hold, on average, a remarkable 394 tonnes of carbon per hectare in their living biomass and in the top meter of soil.
- Some mangrove areas like the Philippines, have average values of over 650 tonnes per hectare.
- Biodiversity: Mangroves are home to a tremendous diversity of species, reflecting their ecotone nature.
- Over 5,700 plant and animal species, across 21 phyla, have been recorded in Indian mangroves alone
- Flooding is the most frequently occurring natural disaster worldwide and is exacerbated by climate change.
- Mangroves reduce flood depths by 15-20%, and over 70% in some areas.
- Mangroves support nearly 800 billion young fish, prawns, bivalves, and crabs annually, crucial for global fisheries.
- They provide non-aquatic food resources like honey, leaves, and fruits, essential for local communities.



## FOREST CLEARANCE FOR NON-FORESTING ACTIVITIES IN WILDLIFE SANCTUARIES

The MoEFCC told the NGT that the Assam government did not obtain necessary forest clearance for non-forestry activities in the Sonai-Rupai Wildlife Sanctuary. The Ministry highlighted that such activities require approval from central govt, which was not sought.

• Sonai Rupai Wildlife Sanctuary, located in Assam, India, is known for its diverse flora and fauna, including the endangered one-horned rhinoceros.

• It serves as a critical habitat for various wildlife species and is part of the larger Kaziranga-Karbi Anglong landscape.

• The Ministry advised the NGT to pass suitable orders on encroachment issues, noting that state governments can address unauthorised construction or illegal settlements.

• NGT is a specialised body set up under the National Green Tribunal Act (2010) for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.

• The Ministry’s counter-affidavit, highlighted that non-forestry activities on forest land need central approval under Section 2(1)(ii) of the Forest Conservation Act 1980. No such proposal was received.

• The Forest Conservation Act of 1980 regulates the diversion of forest land for non-forest purposes in India, requiring prior approval from the central government.

• It aims to preserve and protect forest land by controlling deforestation and promoting sustainable forest management.

## Ideas 4 LIFE Portal

The Union Minister for Environment, Forest and Climate Change launched Ideas4LiFE at IIT Delhi.

- Ideas4LiFE portal was launched for inviting ideas related to products and services, which induce behavioral changes related to environment-friendly lifestyles.
- It aims to encourage and motivate students, faculty and research scholars to contribute their innovative ideas to the global initiative of Mission LiFE.
- It is a remarkable opportunity for inspired minds to participate in a global movement dedicated to environmental sustainability.
- Mission LiFE, or Lifestyle for Environment, is an India-led global mass movement to nudge individual and community action to protect and preserve the environment.
- It was launched at the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow in November 2021.
- The program hopes to “mobilize one billion Indians as well as people in other countries to become individuals who practice sustainable lifestyles.
- It emboldens the spirit of the P3 model, i.e., Pro Planet People.

## PARIVESH 2.0 Portal

The Union Ministry of Environment, Forest and Climate Change (MoEFCC) has mandated the registration of exotic pets listed under Schedule IV of the Wildlife Act with state wildlife departments via the PARIVESH 2.0 portal within 6 months.

- PARIVESH 2.0 Portal (Pro-Active and Responsive facilitation by Interactive, Virtuous, and Environmental Single Window Hub) is a web-based workflow application developed by the Union Ministry of Environment,

## Great Barrier Reef

Water temperatures in and around Australia’s Great Barrier Reef have risen to their warmest in 400 years over the past decade, according to a new study.

- Great Barrier Reef is a complex of coral reefs, shoals and islets in the Pacific Ocean.
- It is located off the northeastern coast of Australia in the Coral Sea.
- It is the longest and largest reef complex in the world. It is the largest living structure on Earth.
- It extends in roughly a northwest-southeast direction for more than 2,300 km, at an offshore distance ranging from 16 to 160 km, and its width ranges from 60 to 250 km.
- It has an area of some 350,000 square km.
- The reef, which is large enough to be visible from space, is made up of nearly 3,000 individual reefs and over 900 islands.
- UNESCO declared the Great Barrier Reef a World Heritage Site in 1981.
- Much of the Great Barrier Reef is a marine protected area, managed by the Great Barrier Reef Marine Park Authority of Australia.
- It is estimated that the reef is home to around 2000 species of fish and around 600 different coral species.



**PARIVESH**  
*A Single Window Integrated System for Environment, Forest, Wildlife and CRZ Clearances*



Forest and Climate Change (MoEFCC) for the online submission and monitoring of proposals related to environmental, forest, wildlife, and coastal regulation zone clearances.

- Many living specimens of exotic animal species listed in Wild Life (Protection) Act, 1972 are in possession of various individuals, organizations and zoos.
- These living specimens of exotic animals listed under Schedule IV of the Act are to be reported and registered by the concerned individuals, organizations and zoos. The registration of these exotic animal species is to be done in the PARIVESH 2.0 portal.
- Exotic species refer to animals or plants that are moved from their natural habitat to a new location, often due to human activities.
- According to the Living Animal Species (Reporting and Registration) Rules, 2024, any individual possessing species listed under Schedule IV of the Wild Life (Protection) Act, 1972, must report and register them.
- Wild Life (Protection) Amendment Act, 2022: It mandates the registration of the possession, transfer, birth, and death of species listed in the CITES Appendices and Schedule IV of the Wild Life (Protection) Act, 1972.

## Clean Plant Programme

*The Union Cabinet has approved the Clean Plant Programme (CPP), aimed at revolutionizing India's horticulture sector.*

- The CPP, part of the Mission for Integrated Development of Horticulture, will enhance the quality and productivity of fruit crops by providing virus-free, high-quality planting material.
- The program includes the establishment of nine state-of-the-art Clean Plant Centers (CPCs) across India, which will produce and maintain clean planting materials.
- It also introduces a robust certification and legal framework to ensure accountability and traceability in planting material production.
- The CPP aims to boost farmers' incomes, improve consumer produce, increase India's fruit exports, and promote sustainable agricultural practices.
- The program will engage women farmers and address diverse agro-climatic conditions, with implementation overseen by the National Horticulture Board and ICAR.

## New Ramsar Sites

The Union Minister for Environment, Forest and Climate Change informed that three more wetlands from India have been added to the list of Ramsar sites.

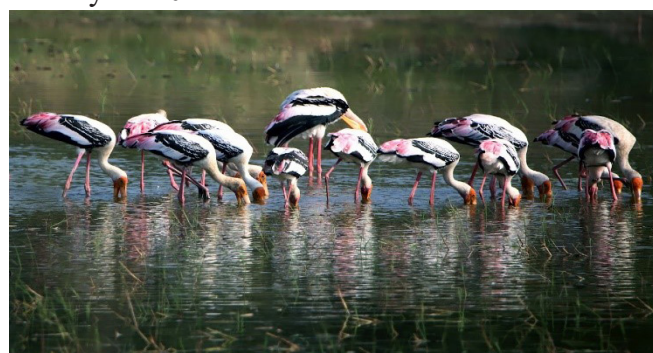
New Ramsar sites

### Nanjarayan Bird Sanctuary

- It is situated along the north-eastern region of Uthukuli Taluk of Tiruppur District in Tamil Nadu.
- The lake falls under two villages (Sarkar Periyapalayam and Neruperichal).
- The lake got its name from the fact that it was repaired and restored by King Nanjarayan who ruled the region many centuries ago.

### Kazhuveli Bird Sanctuary

- It was declared as the 16th bird sanctuary in Tamil Nadu in the year 2021.
- It is a brackish shallow lake located on the Coromandel Coast in Villupuram district, North of
- The lake is connected to the Bay of Bengal by the brackish Uppukalli creek and the Edayanthittu Estuary. Kazhuveli is one of the significant and biodiversity rich wetlands.
- The lake is one of the largest wetlands in peninsular India.



- The lake can be divided into three parts based on the water features viz., the estuarine part with brackish water, the Uppukali creek feeding the sea water and the Kazuveli basin with fresh water.
- This Bird Sanctuary lies in the Central Asian Flyway and is an important stopover site for migratory species of birds.

### Tawa Reservoir

- It is the largest protected area in the state of Madhya Pradesh
- It was constructed at the confluence of the Tawa and Denwa rivers.
- It is located inside the Satpura Tiger Reserve and forms the western boundary of the Satpura National Park and Bori Wildlife Sanctuary.



## PM-PRANAM Initiative

- PM-PRANAM stands for PM Programme for Restoration, Awareness Generation, Nourishment, and Amelioration of Mother-Earth.
- It was announced in the 2023-24 Budget by the Union government.
- Aim is To complement state/UT efforts to promote:
  - Sustainable and balanced use of fertilisers.
  - Encourage the adoption of alternative fertilisers.
  - Promote organic and natural farming practices.
- Financial Mechanism: States and UTs that reduce their chemical fertiliser consumption compared to the past 3 years' average will receive 50% of the savings from the fertiliser subsidy.
- This grant can be used for the benefit of the local population, including farmers.
- Fertiliser Types Covered: Urea, DAP (Diammonium Phosphate), NPK (Nitrogen, Phosphorus, Potassium), and MOP (Muriate of Potash).
- Scope: All States and UTs in India.

## Independence Day 2024



## Shiveluch Volcano: Erupted

Shiveluch volcano in Russia erupted after a 7.0 magnitude earthquake that struck off the eastern coast of the country.

- Shiveluch Volcano is located around 280 miles from Petropavlovsk-Kamchatsky, in Russia's Kamchatka.
- It is one of the largest and most active volcanoes in Kamchatka, having erupted at least 60 times in the past 10,000 years.
- It has two main parts:
  - Old Shiveluch, which tops 3,283 metres (10,771 ft), and
  - Young Shiveluch— a smaller, 2,800-metre peak protruding from its side.
- Young Shiveluch lies within an ancient caldera – a large crater-like basin that likely formed when the older part underwent a catastrophic eruption at least 10,000 years ago.
- The volcano has been continuously erupting since August 1999, but occasionally undergoes powerful explosive events, including in 2007.



## Omkareshwar Floating Solar Project

Madhya Pradesh has commissioned the largest floating solar project in central and north India, generating 90 MW at Omkareshwar.

- Omkareshwar Floating Solar Project is located at Omkareshwar in District Khandwa, Madhya Pradesh.
- The floating power plant was developed on the backwaters of Omkareshwar dam (it is a gravity dam on the Narmada River).
- It is the biggest solar park in India and the largest floating solar project in central and north India, generating 90 MW of energy.
- This project was developed under the Union Ministry of Renewable Energy.
- The project is executed by SJVN Green Energy Limited (SGEL), a wholly owned subsidiary of SJVN, a joint venture between the Government of India and the Government of Himachal Pradesh.
- It is projected to generate 196.5 million units of electricity in its initial year of operation and a cumulative 4,629.3 million units over 25 years.
- On commissioning, it will reduce 2.3 lakh tons of carbon emissions and will significantly contribute to the Government of India's mission of net zero carbon emissions by 2070.



# Teesta-V Hydropower Station

A landslide damaged six houses and a building of the National Hydroelectric Power Corporation (NHPC) at the site of its Teesta-V hydropower station in Sikkim's Gangtok district recently.

- Teesta-V Hydropower Station is a 510 MW hydropower project located on the Teesta River basin in Gangtok district, Sikkim.
- This run-of-river project has an 88.6-meter high, 176.5-meter-long, concrete gravity dam impounding a regulating reservoir for daily power peaking.
- It has been developed in a single phase. The project construction commenced in 1999 and subsequently entered into commercial operation in 2008.
- The project is developed and owned by the National Hydroelectric Power Corporation (NHPC).
- Teesta River is a trans-Himalayan River flowing through the Indian states of Sikkim and West Bengal and Rangpur in Bangladesh.
- It is a tributary of Brahmaputra river.
- This river forms a boundary between Sikkim and West Bengal.

## Earth's Rotational Dynamics: Study

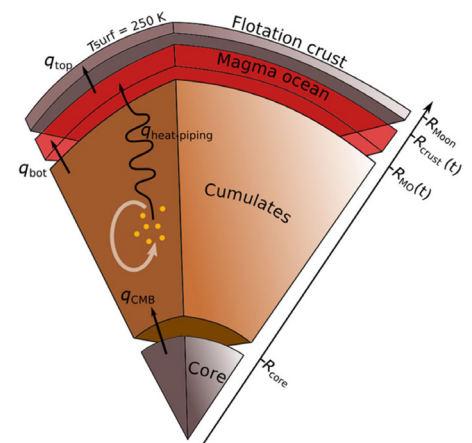
Recent research highlights that melting polar ice caps due to climate change are causing the Earth to spin more slowly, leading to minute changes in the duration of a day.

- This phenomenon, while not immediately noticeable in daily lives, could have significant implications for technology reliant on precise timekeeping.
- The melting of polar ice sheets causes water to flow towards the equator, increasing the Earth's oblateness and moment of inertia.
- Studies show that over the last two decades, the Earth's rotation has slowed by approximately 1.3 milliseconds per century.
- The principle of angular momentum explains this effect, as polar ice melts and moves towards the equator, the Earth's moment of inertia (mass distribution near the equator) increases, causing its rotational speed (velocity) to decrease to conserve angular momentum, resulting in a slower spin.
- Projections indicate that if high emission scenarios persist, this rate may increase to 2.6 milliseconds per century, making climate change a dominant factor in the Earth's rotational slowdown.
- The melting ice also influences the Earth's axis of rotation, causing a slight but measurable shift. This movement, while small, is another indicator of how climate change impacts fundamental Earth processes.
- The Earth's rotational axis is tilted relative to its geographic axis.
- This tilt causes a phenomenon known as the Chandler wobble, which can affect rotational timing and stability.

## Lunar Magma Ocean

The recent findings from India's Chandrayaan-3 mission have sparked renewed interest in the Lunar Magma Ocean (LMO) theory, a crucial concept in planetary science that explains the moon's early formation.

- Chandrayaan-3's Pragyan rover identified a rock type known as ferroan anorthosite in the lunar south pole region.
- This discovery is significant as it aligns with earlier observations made by the Apollo and Luna missions, confirming the theory that these rocks are remnants of an ancient magma ocean that once covered the moon.
- Lunar Magma Ocean (LMO) is a hypothesized early stage in the moon's history when its surface was entirely molten.
- This ocean of magma is believed to have formed following a catastrophic impact between the early Earth and a Mars-sized body, leading to the formation of the moon.





## Landslides In Wayanad

The Wayanad district of Kerala has witnessed one of the most devastating landslide-related disasters due to extreme rainfall and fragile ecological conditions.

- The district received over 140 mm of rain in 24 hours, surpassing expectations and recalling the devastating 2018 floods that claimed around 500 lives.
- A landslide is the downward movement of rock, soil, and debris on a slope, ranging from small shifts to large, destructive events.
- It can occur on natural or man-made slopes and is triggered by factors like heavy rainfall, earthquakes, volcanic activity, human activities, and changes in groundwater levels.
- As per the Geological Survey of India, the economic loss due to landslides may amount to as much as 1% to 2% of the Gross National Product (GNP) in many developing countries.

Causes of Landslides:

- **Gravitational Forces:** These are the primary cause of landslides, constantly pulling materials on slopes downward.
- **Rainfall:** Prolonged or intense rainfall increases soil water content, reducing cohesion and adding weight to slopes, making them more prone to failure.
- **Earthquakes:** Earthquakes destabilise slopes by shaking the ground and weakening the structural integrity of geomaterials, especially in tectonically active regions like the Himalayas.
- **Erosion:** Natural processes such as river or wave action can erode the base of slopes, undermining their stability. Coastal areas are particularly susceptible to landslides due to wave-induced erosion.
- **Hydrological Factors:** Groundwater movement can contribute to landslide risk. Water can seep through porous materials, increasing pore pressure and reducing effective stress, thereby weakening the slope.

## Deep Winter Heatwaves

*Antarctica has been experiencing a significant deep-winter heatwave, marking the second instance of record-breaking temperatures in two years.*

- Ground temperatures have risen by an average of 10 degrees Celsius above normal since mid-July 2024, with some areas experiencing increases of up to 28 degrees Celsius.
- The polar vortex (also known as polar pig) is a large area of low pressure and cold air surrounding both of the Earth's poles.
- The term "vortex" refers to the counterclockwise flow of air that helps keep the colder air near the Poles. It always exists near the poles, but weakens in summer and strengthens in winter.
- Higher temperatures and powerful atmospheric waves (periodic disturbances in the fields of atmospheric variables) disrupted the vortex.

- This allowed cold air to escape and warm air from above to descend.
- The arrival of this warm air led to a rise in temperatures in the region.
- Antarctic sea ice has reached historically low levels, reducing its ability to reflect solar energy and act as a barrier between cold air and warmer waters. This loss contributes to rising global temperatures.
- Antarctica is experiencing warming at a rate nearly double that of the global average, estimated at 0.22 to 0.32 degrees Celsius per decade.
- As per IPCC estimates Earth as a whole is warming at the rate of 0.14-0.18 degrees Celsius per decade.
- This accelerated warming is primarily driven by anthropogenic climate change, which exacerbates the effects of natural climate variability.

## Glacial Lakes

The National Disaster Management Authority (NDMA) has finalised a list of 189 “high-risk” glacial lakes for mitigation measures to reduce the risk emanating from them.

- Glacial Lakes is a body of water that originates from a glacier.

• It typically forms at the foot of a glacier, but may form on, in, or under it.

• ISRO categorised glacial lakes into four broad categories based on how they were formed — moraine-dammed, ice-dammed, erosion-based, and ‘others’.

• As glaciers move, they erode the terrain under them, leaving depressions and grooves on the land.

• When they churn up rock and soil, they etch ridges of debris known as moraines.

• Most glacial lakes form when a glacier retreats and meltwater fills the hole left behind.

• However, natural dams, formed out of ice and terminal moraines, can also form glacial lakes.

• An ice dam forms when a surging glacier, which can move up to 100 times faster than an average glacier, may dam up meltwater as it closes off a valley or fjord and prevents it from draining.

• Dams formed by moraines can be dense and stable, holding sizable lakes behind them for years.

• They can also be leaky, allowing the lake to drain slowly into nearby rivers.

• Glacial lakes are crucial sources of freshwater for rivers.

• However, they also pose significant risks, specifically of Glacial Lake Outburst Floods (GLOFs).



## Ol Doinyo Lengai Volcano

According to a new study, the Ol Doinyo Lengai volcano which is filled with magma has been erupting beyond the ground hose and at the same time sinking for the past 10 years.

• Ol Doinyo Lengai Volcano is located in northern Tanzania, at the southern end of Lake Natron.

• It is known to the local Maasai people as the “Mountain of God.

• It is an active stratovolcano with unique geological characteristics.



- It rises to an elevation of 9,442 feet (2,878 metres) and is one of the many volcanoes situated along the East African Rift System.
- It contains basalts rich in sodium and potassium and is so alkaline that its lavas resemble washing soda.
- The volcano has more than one active centre and most of the recent eruptions were from its northern crater.
- This volcano is the only one existing on Earth which has an actively erupting and extremely runny carbonatite magma.
- The magma is saturated with alkali elements, like calcium and sodium and is poor in silica.

## Pyrocumulonimbus Clouds

- Studies have shown that with temperatures soaring across the world, wildfires are becoming more common and intense, which could be spiking the occurrence of pyrocumulonimbus clouds.

Cumulonimbus Cloud (Cb) is a heavy and dense cloud of considerable vertical extent in the form of a mountain or huge tower, often associated with heavy precipitation, lightning, and thunder.

• More commonly known as thunderclouds, cumulonimbus is the only cloud type that can produce hail, thunder and lightning.

• The base of the cloud is often flat, with a very dark wall-like feature hanging underneath, and may only lie a few hundred feet above the Earth's surface.



- The vertical extent of Cumulonimbus ranges from 3 km to rarely more than 15 km (10 000 – 50 000 ft).



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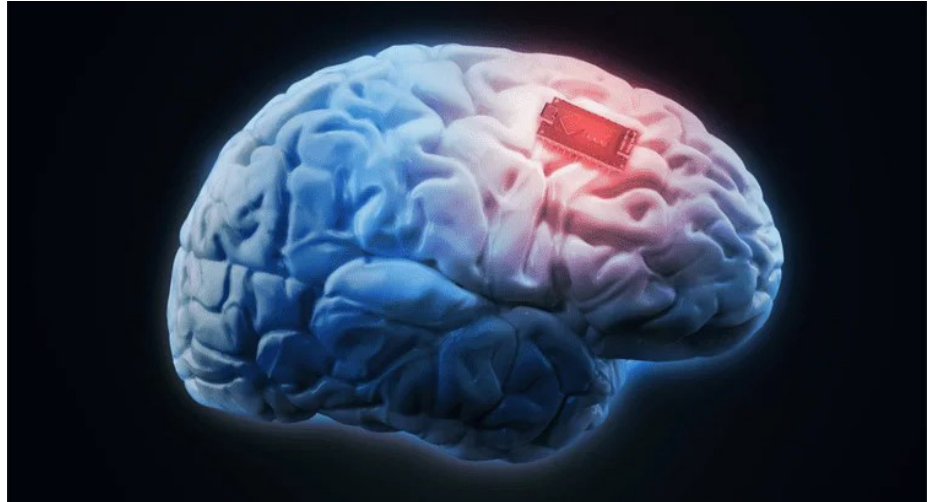
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## Nano-MIND Technology

Researchers from the Korean Institute of Basic Science have developed a magnetogenetics technology named Nano Magnetogenetic Interface for NeuroDynamics (Nano-MIND) which has been demonstrated on mice



- Nano-MIND (Magnetogenetic Interface for NeuroDynamics) technology, opens up new possibilities for understanding and manipulating complex brain functions such as cognition, emotion, and motivation.
- It allows for wireless, remote, and precise modulation of specific deep brain neural circuits using magnetism.
- This innovative approach leverages magnetic fields and magnetized nanoparticles to selectively activate targeted brain circuits, offering a significant advancement over existing methods of brain manipulation.

Highlights of the research:

- The research team demonstrated the technology's capabilities by activating specific neurons in different brain regions of mice.
- One notable achievement was the activation of inhibitory GABA receptors in the medial preoptic area (MPOA), which is responsible for maternal behaviours.
- When these neurons were stimulated in non-maternal female mice, the animals exhibited significantly increased nurturing behaviours, mimicking those of maternal mice.
- The researchers also successfully regulated feeding behaviours by targeting motivation circuits in the lateral hypothalamus.
- Activation of inhibitory neurons in this area resulted in a remarkable 100% increase in appetite and feeding behaviours in mice.
- Conversely, when excitatory neurons were activated, the mice showed a more than 50% reduction in appetite and feeding behaviours.

## National Space Day 2024

India celebrated its first National Space Day on 23rd August 2024. It is celebrated to mark the safe and soft landing of Vikram Lander of Chandrayaan-3 mission, on the lunar surface on 23rd August 2023.

- Additionally, the recent findings based on Chandrayaan-3, represent the first analysis of the Moon's southern topsoil composition and support the hypothesis of the sea of molten material on the lunar surface.
- National Space Day Celebrated on 23rd August, commemorates





India's space achievements, particularly Chandrayaan-3's success.

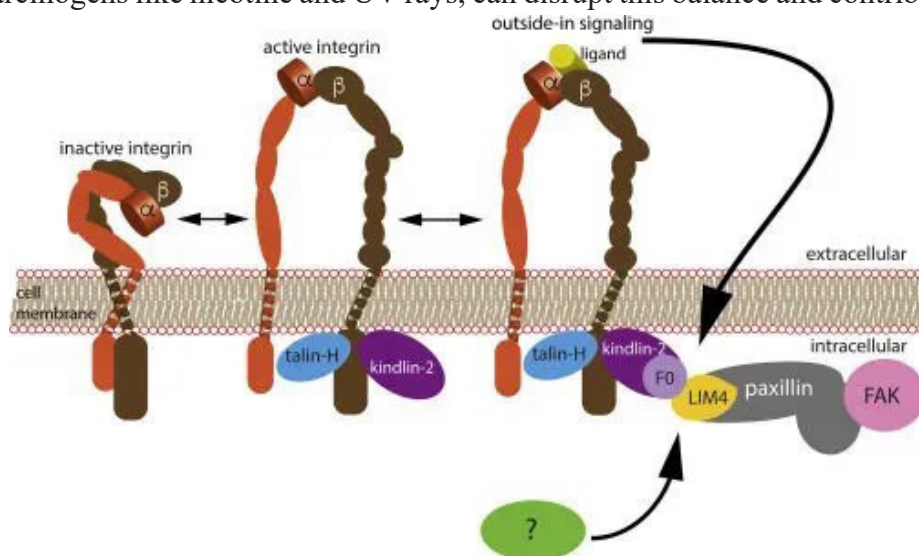
- With the launch of Chandrayaan-3 in 2023, India became the fourth nation to successfully land on the Moon and the first to reach its southern polar region.
- It highlights India's space exploration capabilities and aims to inspire future generations to pursue careers in science, technology, engineering, and mathematics (STEM), contributing to India's ongoing space endeavours.
- Theme for 2024: The theme for National Space Day 2024 is 'Touching Lives while Touching the Moon: India's Space Saga'.



## KINDLINS : ADAPTER PROTEINS

A study explored the role of Kindlins—adapter proteins involved in cell signalling—in various cancers.

- These proteins are critical for transferring extracellular cues to biochemical signals within cells, influencing multiple signalling pathways essential for cellular homeostasis.
- Mutations in Kindlins, caused by carcinogens like nicotine and UV rays, can disrupt this balance and contribute to cancer progression.
- The researchers analysed data from 10,000 patients with 33 cancer types, revealing that Kindlin 1 regulates the immune microenvironment in breast cancer, while Kindlin 2 governs cancer-specific metabolic processes and HIPPO signalling, which promotes cell migration and invasion.
- The study emphasized the importance of Kindlins in tumour progression, metastasis, and epithelial-mesenchymal transition (EMT).
- Their findings suggest that Kindlins are involved in essential mechano-sensitive pathways and their dysfunction is linked to adverse survival outcomes.
- The research provides evidence for Kindlins as potential targets for innovative cancer treatments, offering new strategies to address chemoresistance and tumour relapse.



## Liquid Water on Mars

A recent study has uncovered the presence of vast amounts of liquid water hidden deep within Mars' rocky outer crust, marking a significant breakthrough in our understanding of the Red Planet.

- This discovery marks the first time that scientists have found evidence of liquid water on the Martian surface, beyond the known presence of water ice at the planet's poles.
- The study, titled "Liquid water in the Martian mid-crust," was published in the prestigious Proceedings of the National Academy of Sciences (PNAS).

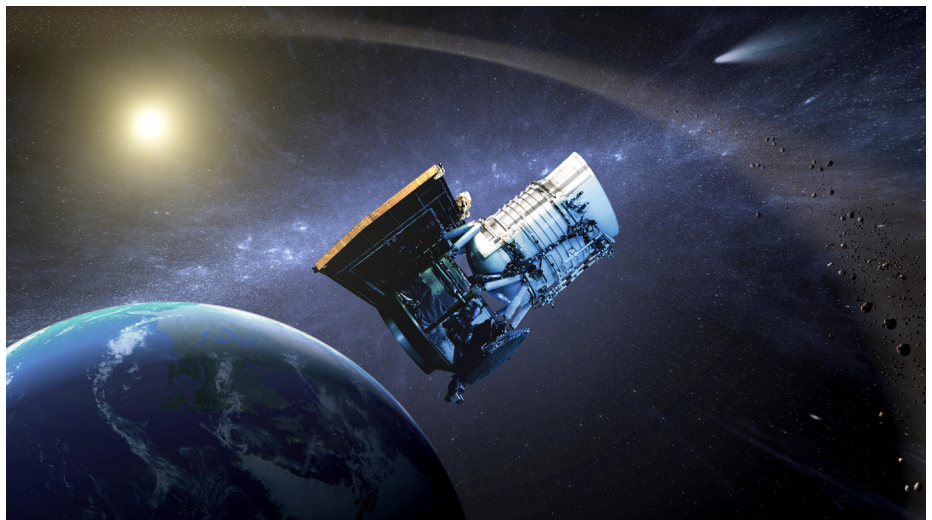
- The research was conducted by a team of scientists from the University of California.
- The discovery could deepen our understanding of Mars' water cycle, providing insights into the planet's climatic history, surface processes, and internal structure.
- The presence of liquid water boosts the potential for finding habitable environments, enhancing the ongoing search for life on Mars.
- The researchers utilized data from NASA's InSight Lander, which operated on the Martian surface from 2018 to 2022.
- The lander was equipped with a seismometer that recorded more than 1,300 Marsquakes and meteorite impacts over four years.
- By analysing the speed of the seismic waves, the researchers could infer the type of material the waves travelled through and apply a geophysical model to identify the presence of liquid water.
- The study identified a water-containing layer located at depths of 10 to 20 kilometres within the Martian crust.
- The water is believed to have seeped from the surface billions of years ago when Mars had a warmer climate and more permeable upper crust, similar to groundwater infiltration on Earth.
- If the findings are representative of the entire planet, the amount of water trapped in these rock fractures could fill an ocean 1-2 kilometres deep across Mars.



## NEOWISE Telescope

Nasa's Near-Earth Object Wide-field Infrared Survey Explorer (NEOWISE) has concluded its mission, marking the end of a journey spanning over a decade.

- NEOWISE Telescope was launched in 2009 by NASA as the Wide-Field Infrared Survey Explorer, or WISE.
- The space telescope was originally designed to survey the sky in infrared, detecting asteroids, stars and some of the faintest galaxies in space.
- It had completed its primary mission in February 2011.
- Observations resumed in December 2013, when the telescope was taken out of hibernation and re-purposed for the NEOWISE project as an instrument to study near-Earth objects, or NEOs, as well as more distant asteroids and comets.
- It was formerly orbited at an altitude of 310 miles, NEOWISE now sits just 217 miles above Earth's surface, its descent spurred by increasing solar activity.



- During its primary mission, NEOWISE detected more than 158,000 minor planets, 34,000 of which had never been discovered previously.
- NEOWISE data have been used to set limits on the numbers, orbits, sizes and probable compositions of asteroids throughout our solar system and enabled the discovery of the first known Earth Trojan asteroid.

# Rashtriya Vigyan Puraskar

The central government recently announced the full list of the first-ever Rashtriya Vigyan Puraskar (RVP) 2024 awardees.

- The ISRO-Chandrayan 3 Team will be awarded the Vigyan Team award for their contribution in the field of Space Science and Technology.
- Celebrated biochemist Govindarajan Padmanabhan has been selected as the first recipient of the Vigyan Ratna Puraskar.
- Rashtriya Vigyan Puraskar (RVP) is a new set of awards introduced by the Government of India in the field of Science, Technology, and Innovation.
- Objective is to recognize the notable and inspiring contributions made by scientists, technologists, and innovators individually or in teams in various fields of science, technology, and technology-led innovation.
- It is one of the highest recognitions in the field of science, technology, and innovation in India.
- Scientists will be selected across 13 domains, namely Physics, Chemistry, Biological Sciences, Mathematics & Computer Science, Earth Science, Medicine, Engineering Sciences, Agricultural Science, Environmental Science, Technology & Innovation, Atomic Energy, Space Science and Technology, and Others.
- The representation from each domain/field, including gender parity will be ensured.



## Genome Editing- ISDra2TnpB

A recent breakthrough in plant genome editing comes from a collaborative effort between the ICAR-National Rice Research Institute in Cuttack, India, and Pennsylvania State University, USA.

- Genome editing is a powerful tool that allows scientists to make precise changes to the Deoxy-Ribonucleic Acid (DNA) sequence of living organisms.
- This technology has vast applications in agriculture, where it can be used to enhance crop yields, improve resistance to pests and diseases, and introduce desirable traits like drought tolerance.
- The most commonly known genome-editing tool is CRISPR, which has revolutionised genetic research due to its precision and efficiency.
- CRISPR technology, particularly using proteins like Cas9 and Cas12, has been widely used in genome editing.
- These proteins work by cutting DNA at specific locations, allowing scientists to remove, add, or replace genetic material.
- However, a major limitation in plant genome editing has been the size of these proteins, which are often too large to be efficiently accommodated by plant cells.
- This has created a need for smaller, more efficient genome-editing tools that can work effectively in plant systems.
- The ISDra2TnpB genome editor have developed a new genome-editing tool called ISDra2TnpB, derived from the bacteria Deinococcus radiodurans.
- This tool is significantly smaller than the traditional CRISPR-associated proteins like Cas9 and Cas12, making it more suitable for use in plant cells.

## Polaris Dawn Mission

It aims to revolutionise commercial spaceflight with a high-orbit mission and the first-ever private spacewalk by non-professional astronauts.

- Polaris Dawn Mission will be the first non-governmental mission to conduct a spacewalk, reaching an unprecedented altitude of approximately 700 kilometres (435 miles) above Earth.
- It will also orbit Earth through regions of a highly-charged belt of radiation. There are two of these “Van Allen Belts”, an inner and an outer one.
- This altitude surpasses that of the International Space Station (ISS), which orbits at about 400 kilometres.

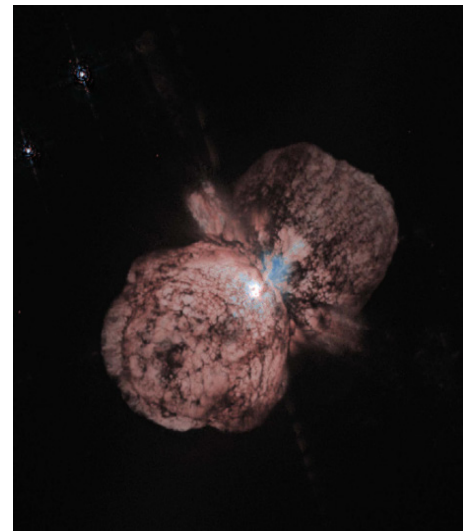
- SpaceX will provide the Falcon 9 rocket and Dragon capsule for the mission.
- The spacecraft will attempt to break the altitude record set by NASA's Gemini 11 mission in 1966, which reached 1,373 kilometres
- It is spearheaded by billionaire entrepreneur Jared Isaacman, who previously financed and flew on SpaceX's Inspiration4 mission, the first civilian mission to orbit Earth.



## Eta Carinae

*Astronomers are closely monitoring Eta Carinae, as it may be on the verge of a spectacular explosion.*

- Eta Carinae is a hypergiant star with a mass approximately 100 times that of our Sun.
- It is located about 7,500 light-years away in the Carina Nebula, Eta Carinae is one of the most massive and luminous stars known to science, making it an excellent candidate for a supernova.
- Historical records reveal that about 170 years ago, the star underwent a significant outburst, known as the Great Eruption, which temporarily made it one of the brightest stars in the southern sky.
- This event created the Homunculus Nebula, a distinctive hour-glass-shaped cloud of gas and dust that surrounds the star.
- It is the only known star to emit natural laser light, adding to its enigmatic nature.
- Recently the Hubble Space Telescope highlighted the intricate details of the surrounding nebula, including diffraction spikes and radial streaks, which remain unexplained.
- Eta Carinae's eventual supernova will be a monumental event, potentially outshining any supernova observed in recent history, including SN 2006gy.
- When it does explode, it will provide an extraordinary light show visible from Earth and offer invaluable insights into the life cycles of massive stars.



## India's First Quantum Computer Set For Launch

India's first quantum computer set for launch under National Quantum Mission. The National Quantum Mission is set to advance India's quantum technologies across four key verticals: quantum computing, communication, measurement and sensing.

- The mission has been allocated nearly ₹6,000 crore, with plans to establish four Section 8 companies under the aegis of premier institutions like IITs and IISc. These companies will spearhead activities across the identified verticals.
- The National Quantum Mission (NQM) is a visionary initiative (2023) led by the Department of Science and Technology (DST) to fortify India's research and development in the quantum domain.
- Over the next eight years (2023-2031), the mission aims to pioneer the development of intermediate-scale quantum computers with 50-1000 physical qubits using cutting-edge platforms like superconducting and photonic technology.
- It seeks to establish satellite-based secure quantum communications. It spans a range of 2000 km within India and extends to other countries.
- It seeks to develop highly sensitive magnetometers in atomic systems and precision atomic clocks for timing,

communications, and Navigation.

- It will provide crucial support for the design and synthesis of quantum materials such as superconductors, novel semiconductor structures, and topological materials to fabricate advanced quantum devices.
- Thematic Hubs (T-Hubs): To catalyze research and development, four T-Hubs will be instituted in premier academic and national research and development institutes, with a focus on igniting new knowledge through fundamental and applied research, as well as driving R&D activities forward.
- It will find utility across diverse sectors including healthcare, diagnostics, defence, energy and data security.



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## Tarang Shakti

India hosted its first-ever multinational air exercise, “Tarang Shakti,” showcasing the capabilities of indigenously manufactured aircraft, including the Sarang helicopters and LCA Tejas.

- The exercise is being conducted in two phases.
- The exercise was a significant achievement, emphasizing India’s focus on “Aatmanirbharta” (self-reliance) and showcasing indigenous military capabilities.
- India’s Rafale, Sukhoi, and LCA Tejas aircraft were part of the first phase.



## Exercise Udara Shakti

Indian Air Force and Royal Malaysian Air Force participated in Exercise Udara Shakti 2024.

- Exercise Udara Shakti is the joint air exercise was conducted in collaboration with the Royal Malaysian Air Force (RMAF) at Kuantan, Malaysia.
- It was aimed at bolstering operational efficiency, technical experts of both Air Forces engaged in exchange of their maintenance practices.
- During the exercise, IAF’s Su-30MKI fighter jets engaged in air combat missions alongside the RMAF’s Su-30MKM fighters, enabling the crew of both air forces to familiarize with each other’s operational protocols, thereby enhancing interoperability, commonality and overall effectiveness in Su-30 aircraft operations.
- The Sukhoi Su-30MKI is a multirole combat fighter aircraft.
- It is jointly developed by the Sukhoi Design Bureau and Hindustan Aeronautics Limited (HAL) for the Indian Air Force (IAF).
- Based on the Su-30 fighter aircraft, Su-30MKI is equipped with thrust vectoring control and canards.



## Maritime Partnership Exercise



*A Maritime Partnership Exercise (MPX) was conducted between India and Russia in St. Petersburg.*

- Maritime Partnership Exercise was conducted between Russia and India on the occasion of the 328th Russian Navy Day.
- It involved INS Tabar naval ship from India and Soobrazitelny from Russia.
- It marks a significant milestone in the maritime cooperation between India and Russia, reinforcing the commitment of both nations to maintain peace, stability and security in the region.
- The MPX involved a series of complex naval manoeuvres, including communication drills, Search & Rescue tactics and Replenishment at Sea serials. Ships from both navies demonstrated high levels of professionalism and interoperability.
- The Indian Navy remains committed to fostering partnerships with navies across the world.
- The MPX with the Russian Navy reinforces the strong bilateral naval ties, further strengthening our resolve and commitment towards ensuring enhanced cooperation in the maritime domain.

## 10<sup>th</sup> Edition Of Exercise MITRA SHAKTI

*The 10th edition of the India-Sri Lanka Joint Military Exercise MITRA SHAKTI began.*

- MITRA SHAKTI is an annual exercise based on counter insurgency and counter terrorism operations in semi urban terrain.
- It is the largest bilateral exercise being undertaken by the Sri Lankan Army and it forms a major part of India and Sri Lanka's growing defence partnership.
- It is designed for incorporating the current dynamics of UN' peace-keeping operations through tactical exercises and practical discussions.



## Typhoon-K Vehicle

*The Indo-Tibetan Border Police (ITBP) has successfully conducted a demonstration and trial of the formidable Typhoon vehicle at its Transport Battalion in Chandigarh.*

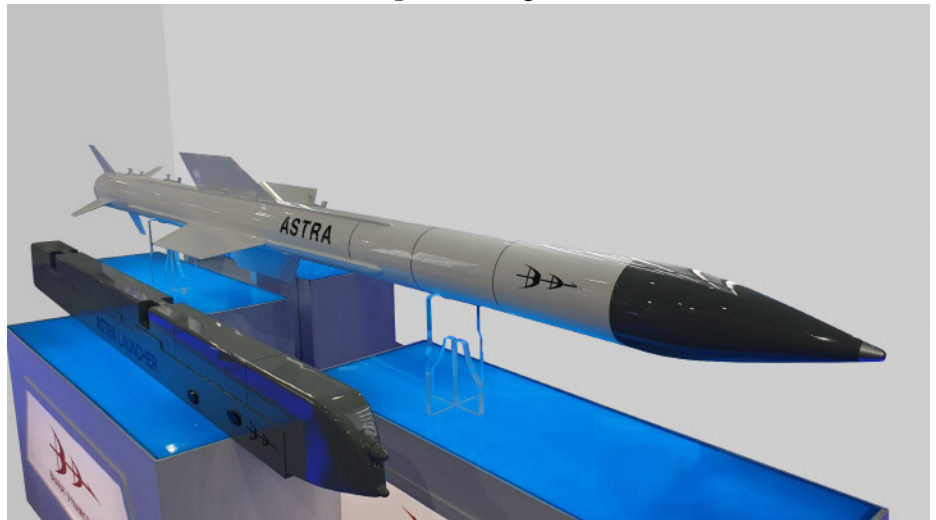
- Typhoon-K Vehicle is a Russian-made 4×4 Mine-Resistant Ambush Protected (MRAP) vehicle.
- It was developed by Remdiesel, a subsidiary of KamAZ.
- It was developed for the safe transportation of troops and military cargo in areas with a high risk of mines.
- It can also be configured as a command post vehicle, ambulance and logistics support vehicle.
- It measures 6.7 m long, 2.5 m wide, and 2.8 m high. It has a curb weight of 13,700 kg and can carry a payload of 2,000 kg.
- It has a maximum road speed of 100 km/h and a range of up to 1,000 km without refueling.
- The vehicle accommodates two crew members and eight fully equipped troops.
- The hull features four side doors and a rear door. The roof is fitted with two hatches for observation, firing, and emergency exit purposes.
- It can withstand the impact of an 8 kg TNT explosion under the floor and a 10kg TNT explosion under the wheels.
- The vehicle also features a signature reduction package, an all-around video surveillance system, and an automatic fire-extinguishing unit.
- It is fitted with a stabilised remotely controlled weapon station (RCWS).
- The RCWS can be armed with medium-to-heavy machine guns.



# Astra Missile

The Indian Air Force (IAF) has given clearance to the Defence Research and Development Organisation (DRDO) and the Bharat Dynamics Limited (BDL) to produce 200 Astra air-to-air missiles for its Su-30 and LCA Tejas fighter aircraft.

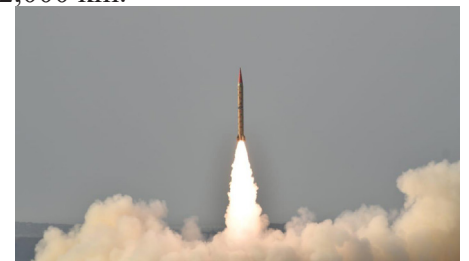
- Astra Missile is a Beyond-Visual-Range (BVR) air-to-air missile designed to be mounted on fighter aircraft.
- It is indigenously developed by the Defence Research and Development Organisation (DRDO) and manufactured by Bharat Dynamics Ltd. (BDL) for the Indian Air Force (IAF).
- The missile was built to engage and destroy aerial targets, which have high maneuverability and supersonic speed.
- The missile is capable of advanced air combat, which allows it to engage in multiple high-performance targets.
- It is the best in its class of weapon systems in the world in the category of air-to-air missiles.
- The missile is being developed in multiple variants to meet specific requirements.
- Astra is 3.6 m long and with a diameter of 178 mm, weighing 154 kg.
- It has a range of 80 to 110 km in a head-on chase and can travel at 5 Mach speed (almost hypersonic).
- The missile uses an inertial guidance system driven by a fibre optic gyroscope with terminal guidance through active radar homing.
- It offers the pilot the option to choose between “Lock on Before Launch – LOBL” and “Lock on After Launch – LOAL” and later allows the aircraft to shoot and scoot to safety after firing the missile in the direction of the target.
- It is based on an advanced solid-fuel ducted ramjet (SFDR) engine technology.
- It is capable of operating under all weather conditions, both day and night and offers high overall reliability and a very high “Single Shot Kill Probability – SSKP”.



# Shaheen-II Missile

The Pakistani military recently conducted the successful training launch of its surface-to-surface ballistic missile Shaheen-II.

- Shaheen-II Missile is a Pakistani medium-range surface-to-surface ballistic missile.
- It is believed that the Shaheen 2 is derived from the People’s Republic of China (PRC)-developed M-18, though this has not been confirmed.
- It is a solid-fueled, two-stage missile with an estimated range of 1,500–2,000 km.
- It measures 17.2 m long, 1.4 m in diameter, and weighs 23,600 kg at launch.
- It is designed to carry conventional or nuclear payloads.
- Its separating warhead is thought to feature four small motors to improve accuracy; the missile’s accuracy is estimated at 350 m circular error probable (CEP).
- It is transported and launched by a 6-axle transporter erector launcher (TEL).
- A ballistic missile is a rocket-propelled, self-guided strategic weapons system that follows a ballistic trajectory to deliver a payload from its launch site to a predetermined target.
- They are powered initially by a rocket or series of rockets in stages, but then follow an unpowered trajectory that arches upwards before descending to reach its intended target.
- They can carry conventional high explosives as well as chemical, biological, or nuclear munitions.
- They can be launched from aircraft, ships, and submarines, in addition to land-based silos and mobile platforms.





# Long Range Glide Bomb

Defence Research and Development Organisation (DRDO) carried out a successful maiden flight test of a Long-Range Glide Bomb (LRGB), GAURAV from the Su-30 MK-I platform of the Indian Air Force (IAF).

- Long Range Glide Bomb (LRGB) is an air-launched 1,000 kg class glide bomb capable of hitting targets at long distances.



- It is an Air to Surface LRGB with conventional warheads to destroy enemy airstrips, bunkers, hard installations, buildings etc.
- It is designed to integrate with fighter aircraft.
- It consists of an Inertial Navigation based guidance system with Digital Control.
- GAURAV has been designed and developed indigenously by the Research Centre Imarat (RCI), Hyderabad.

- After being launched, the glide bomb steers towards the target using a highly accurate hybrid navigation scheme with a combination of INS and GPS data.
- During the flight test, the glide bomb hit the target erected at Long Wheeler's island with pinpoint accuracy.
- Complete flight data during the test launch was captured by Telemetry and Electro-optical tracking systems deployed by the Integrated Test Range along the coastline.

# INS Arighat

*India is now all set to commission its second nuclear-powered submarine, INS Arighat, armed with nuclear missiles for strategic deterrence.*

- INS Arighat is India's second indigenously built nuclear-powered ballistic missile submarine (SSBN), following India's first nuclear submarine, INS Arihant, commissioned in 2018.
- It was constructed at the Indian Navy's Ship Building Centre (SBC) in Visakhapatnam.
- It represents a critical component of India's nuclear triad, enabling the nation to launch nuclear missiles from land, air, and sea.
- It measures 111.6 meters in length, has a beam of 11 meters, a draught of 9.5 meters, and a displacement of 6,000 tonnes.
- It will have one seven-blade propeller powered by a pressurized water reactor.
- It can achieve a maximum speed of 12–15 knots (22–28 km/h) when on surface and 24 knots (44 km/h) when submerged.
- It can carry up to four nuclear-capable K-4 SLBMs (Submarine Launched Ballistic Missile) with a range of over 3500 kilometers or twelve conventional warheads K-15 SLBMs with a range of about 750 kilometers.
- The K-15 can also carry a strategic nuclear warhead.
- It also carries torpedoes and mines.
- Additional safety measures include two standby auxiliary engines and a retractable thruster for emergency power and mobility.



# Aarogya Maitri Health Cube

The Indian Army and Air Force recently conducted a first-of-its-kind paradrop of the Aarogya Maitri Health Cube, the indigenously-made world's first portable hospital, at 15,000 feet elevation.

- Aarogya Maitri Health Cube is the world's first portable hospital.
- It was designed indigenously under Project BHISHM (Bharat Health Initiative for Sahyog Hita and Maitri),
- It contains medical equipment and supplies such as a mini-ICU, an operation theatre, a cooking station, food, water, a power generator, blood test equipment, power generator, an X-ray machine, and more.
- The 'Aarogya Maitri Cube Cage' includes three frames, each accommodating 12 mini-cubes.
- The cage can fit in 36 mini-cubes, including almost everything that can be packed for survival for a period of 48 hours for 100 survivors.
- The design allows joining two cages—master cube one and master cube two, including 72 cubes in total—with damage control capabilities for 200 survivors.
- Mini cubes are durable and waterproof and are designed to open “in different configurations”.
- These cubes are light and portable and can be carried by a single person—a messenger bag, as a strolley or as a briefcase—or even transported through a drone.
- The cubes can handle several severe injuries, including 40 bullet injuries, 25 major bleeds, 25 major burns, around 10 head injuries, long limb fractures, spinal injuries, chest injuries, and spinal fractures.
- The system also integrates AI and data analytics.



## Bent-Toed Geckos



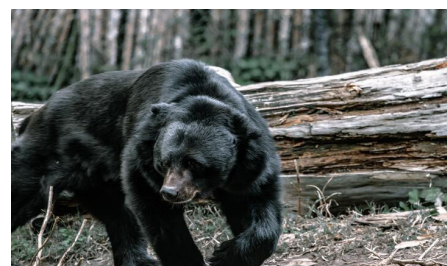
Scientists from India and the United Kingdom have described six new species of bent-toed geckos from Northeast India.

- Bent-Toed Geckos of the genus *Cyrtodactylus* are diverse.
- They are commonly known as bow-fingered geckos and forest geckos.
- Geckos are ectothermic, meaning they rely on external sources of heat to regulate their body temperature.
- Reproduction in this gecko species typically occurs during the warm and wet seasons.
- Bent-toed geckos have about 346 species distributed across multiple biogeographic zones in Peninsular India, Sri Lanka, the Himalayan foothills, Northeast India, Southeast Asia and the Solomon Islands.
- Namdapha bent-toed gecko: It was documented from the Namdapha Tiger Reserve in Arunachal Pradesh and is widespread within lowland evergreen forests of the Namdapha and Kamlang Tiger Reserves.
- Siang Valley Bent-Toed Gecko (Arunachal Pradesh): It was discovered in the Siang River valley, renowned for its unique biodiversity.
- Ngengpui bent-toed gecko (Mizoram): It was discovered in the Ngengpui Wildlife Sanctuary of Lawngtlai district. The site is located in one of the easternmost protected areas of the country.
- Manipur bent-toed gecko: It was discovered near the Lamdan Kabui village of Manipur.
- Kiphire bent-toed gecko and Barail Hill bent-toed gecko (Nagaland): These two were discovered in Nagaland.

## Sloth Bear

Scientists suggested that a careful study of sloth bear behaviour during its encounters with tigers can help people across South Asia avert deadly attacks.

- Sloth bears are one of the eight bear species found across the world.
- They are myrmecophagous, meaning, they find bugs and termites to be their most sought after meal.
- They live in a variety of dry and moist forests and in some tall grasslands, where boulders, scattered shrubs and trees provide shelter.



They mainly inhabit the region of India, Nepal, Sri Lanka and presumably Bhutan.

- They have long, shaggy dark brown or black fur and curved claws, which are the longest out of any of the bear species.
- These bears are mostly nocturnal, foraging for food at night and resting in secluded locations
- Sloth Bear Sanctuaries in India: Daroji Sloth Bear Sanctuary (Karnataka), Jessore Sloth Bear Sanctuary (Gujarat).
- Conservation Status
  - IUCN: Vulnerable
  - Wildlife Protection Act, 1972: Schedule 1
  - CITES: Appendix I

## Gastrodia indica : Discovery

A unique orchid species- *Gastrodia indica* was recently discovered in Fambonglho Wildlife Sanctuary, Sikkim.

- *Gastrodia indica* is the first orchid from India that never opens its flower.
- The orchid was found at an elevation of 1,950–2,100 metres above sea level.
- This is the first cleistogamous species of the genus *Gastrodia* discovered from India.
- The *Gastrodia* genus is known for terrestrial, herbaceous, and holomycotrophic orchids.
- Cleistogamous plants are highly specialized, as they do not depend on external pollinators like insects or wind for reproduction.
- Holomycotrophic species like *Gastrodia indica* rely entirely on a fungal host for sustenance, lacking chlorophyll and drawing carbon from underground fungi.
- It is morphologically allied to *G. exilis* & *G. dyeriana* but critical examination revealed considerable differences in floral morphological characters.

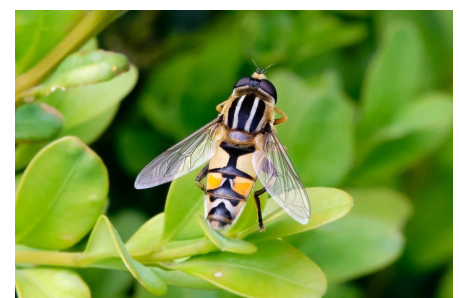


- This new species thrives in dense, rotten leaf litter and is associated with trees such as *Magnolia doltsopa*, *Acer campbelli*, and *Quercus lamellosa*.
- The discovery adds to India's botanical diversity, bringing the total number of *Gastrodia* species in the country to 10.
- Threats: *Gastrodia indica* faces potential threats due to its limited population and specific habitat requirements.

## Hoverflies : New Species

Three Kashmiri scientists recently discovered a new species of hoverfly that mimics the wasp in the high-altitude alpine forests.

- Hoverflies sometimes called 'flower flies' or 'syrphid flies', are any member of a family that contains about 6,000 species of insects in the fly order, Diptera.
- Their various common names refer to the behaviour of hovering around flowers.
- They are found worldwide, from temperate regions to tropical environments.
- Hoverflies, with their yellow markings, resemble wasps or bees but do not bite or sting.



- They can be readily distinguished from wasps and bees by their single pair of wings.
- They are distinguished from other flies by a false (spurious) vein that closely parallels the fourth longitudinal wing vein.
- The species vary from small, elongated, and slender to large, hairy and yellow and black.
- They also have a typical fly head with short antennae and bulbous eyes.
- Beneficial Insect : Adults feed on nectar and pollen, making them important pollinators in a variety of habitats.
- The larvae of many species feed on aphids (soft-bodied insects that use their piercing-sucking mouthparts to feed on plant sap), mites and small insects helping to control populations of these pests.

## Schistura sonarengaensis

A group of scientists recently identified a new species of loach, named *Schistura sonarengaensis*, in Meghalaya's South Garo Hills district, near the Bangladesh border.

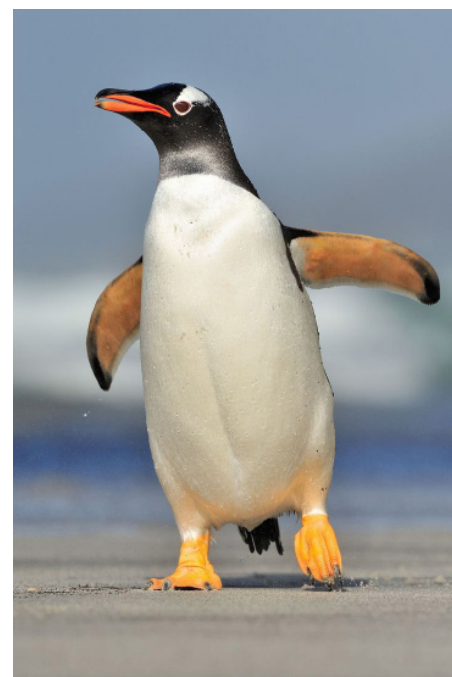
- *Schistura sonarengaensis* is a new species of loach recently discovered.
- Loach is a freshwater bottom-dwelling fish and found across rivers in Southeast Asia.
- The new species is described from three cave-dwelling populations (Barak-Surma-Meghna drainage) in the South Garo Hills district of Meghalaya.
- The species is distinguished by its prominent eyes and 13-26 vertically elongated to circular black blotches on a grayish-black mid-lateral stripe, over a dull white or pale-beige body.
- Despite lacking the typical adaptations for subterranean life, such as complete loss of eyes or pigmentation, this species shows reduced pigmentation compared to surface-dwelling relatives.
- While these cave-dwelling fish are somewhat pale, they are not blind like other cave species found in Jaintia and Khasi Hills.
- The new species retains prominent eyes and is distinct from other *Schistura* species in the Barak-Surma-Meghna and adjacent river drainages of northeast India, except for *Schistura syngkai*.



## Gentoo Penguin

Sphe, the famous gentoo penguin known for his same-sex partnership with Magic, has died at the age of 11 in Australia.

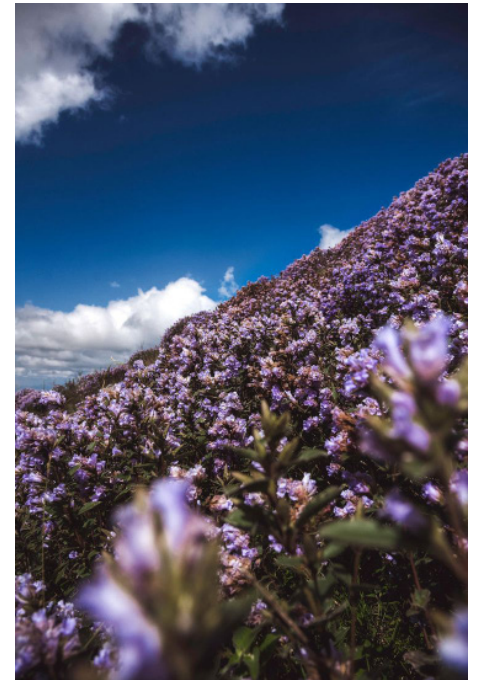
- Scientific name: *Pygoscelis papua*
- It is found exclusively in the Southern Hemisphere, primarily between 45° and 65° south latitude.
- It inhabits the Antarctic Peninsula and several sub-Antarctic islands, with a significant population on the Falkland Islands in the South Atlantic Ocean.
- It is notable for the two white wedges around their eyes, connected by a line across the head, which distinguish them from other penguin species.
- Their heads are mostly black, adorned with small flecks of white feathers.
- It is typically found along shorelines, which enables the Penguins to quickly access food sources while staying close to their nests.
- They use a range of vocalisations, from honks to brays, which help partners identify each other within the colony.
- Conservation status: This species is classified as "Least Concern" on the IUCN Red List, indicating a stable population



# Neelakurinji Declared As a Threatened Species

Neelakurinji (*Strobilanthes kunthiana*), a flowering shrub that blooms once every 12 years, is now classified as Vulnerable (Criteria A2c) on the IUCN Red List.

- The species was not previously evaluated under IUCN standards due to its unique blooming cycle and ecological challenges.
- *Strobilanthes kunthiana* is an endemic shrub of three-metre height, seen only in the high-altitude shola grassland ecosystems of five mountain landscapes of southwest India at an elevation of 1,340–2,600 m.
- The scientific name of the Neelakurinji is named after the Kunthi River in Kerala's Silent Valley National Park where it is abundantly found.
- They are semelparous (reproducing only once in a lifetime) with showy synchronous blooming and fruiting every 12 years at the end of the life cycle.
- Known for their massive blooming, they impart purplish-blue colours to the mountain grasslands and are popularly known as Neelakurinji (Blue *Strobilanthes*) blooms.
- The species has 34 subpopulations within 14 ecoregions of the high-altitude mountain ranges of southwest India, with 33 subpopulations in the Western Ghats and one in the Eastern Ghats (Yercaud, Shevaroy Hills).
- Most subpopulations are in the Nilgiris of Tamil Nadu, followed by Munnar, Palani-Kodaikanal, and Anamalai mountains.



# Four-Ringed Butterfly

A four-ringed butterfly was rediscovered in the Namdapha National Park after 61 years

- Four-ringed butterfly a species of Satyrinae butterfly.
  - It was photographed during a survey to document the butterfly diversity in the Miao range of the Namdapha National Park during 2018-19.
  - It was identified based on general morphological patterns and habitat.
  - It was last reported in 1957 from (eastern) Assam's Margherita.
  - It is considered a rich genus of the family Nymphalidae which has some 6,000 species of butterflies. Of the 35 *Ypthima* species recorded in India, 23 have been reported from the northeast.
  - The highest *Ypthima* diversity is in China, particularly in the Yunnan and Sichuan provinces. The diversity is also vast in Nepal, Bhutan and Myanmar apart from the northeastern part of India.
- Namdapha National Park:
- It is located in the state of Arunachal Pradesh.
  - It is flanked by the Patkai hills to the south and southeast and by the Himalayas to the north.
  - It is located between the Dapha Bum range of the Mishmi Hills and the Patkai range. The region is a part of both the Palearctic and Indo-Malayan biogeographic areas.
  - Namdapha is the name of a river which originates from Daphabum and meets the Noa-Dehing river.
  - This river flows right across in a North-South direction of the National Park and hence the name Namdapha has been given.



## Slow Loris

Villagers in Shimla Bagan, located in the Shantipur area on the Indo-Bhutan border in Chirang District, Assam, have reported the sighting of a rare species of the endangered primate Slow Loris.

- Slow Loris found exclusively in South and Southeast Asia, slow lorises are the world's only venomous primates.
- They're arboreal—meaning they live in trees—and can be spotted curling up to sleep in branches or using vines and leaves to get around.
- They typically only come down to the forest floor when they need to defecate.
- There are nine species of slow loris. They all belong to the same genus, with each species sharing many similar characteristics and behaviours.
- The nine species include the Philippine slow loris, Bengal slow loris, greater slow loris, Kayan slow loris, Bangka slow loris, Bornean slow loris, Sumatran slow loris, Javan slow loris, and pygmy slow loris.
- Bengal slow loris (*Nycticebus bengalensis*) is listed as Endangered in the IUCN Red List. It is also legally protected under the Wildlife Protection Act, 1972.
- The range of the Bengal slow loris extends from Vietnam to China, but in India, it is confined to India's north-east.



## Owflies

A rare species of owlfly species *Glyptobasis dentifera* has been rediscovered after 75 years from Kerala by researchers.

- Owlflies come under Order Neuroptera, which includes holometabolous insects while the dragonflies come under Order Odonata, which includes hemimetabolous insects.
- These are misidentified as dragonflies by non-taxonomists because of their morphological resemblance.
- During the day, adult owlflies perch on blades of grass growing in lateritic soils and also in village households, surrounded by dense vegetation.
- The two distinguishing characteristics of owlflies are their long, clubbed antennae (nearly as long as the body) and their bulging eyes.
- Some species of owlflies develop some color in their wings after their emergence.
- Adult owlflies are aerial predators feeding on other insects. When disturbed, some owlflies release a strong, musk-like chemical to deter enemies.
- Usually lay their eggs in groups at the tips of limbs and twigs.
- The female creates a protective shield below the eggs in order to prevent predators from reaching them.
- Initially, owlfly larvae are usually found in the soil, or in trees where they live in clusters for defensive purposes.



## Galathea Bay

A wildlife sanctuary in Galathea Bay, Great Nicobar Island, was denotified to clear the way for a transshipment port project. The area, a significant nesting site for endangered species like the giant leatherback turtle, was originally classified as a CRZ-1A zone, where large construction projects are prohibited.

## Guru Ghasidas-Tamor Pingla Tiger Reserve

The Chhattisgarh government on Wednesday announced that it would establish a new tiger reserve and named it as Guru Ghasidas-Tamor Pingla Tiger Reserve.

- Guru Ghasidas-Tamor Pingla Tiger Reserve is located in the northern part of the state of Chhattisgarh, bordering Madhya Pradesh and Jharkhand.
- This will be the fourth Tiger Reserve in Chhattisgarh, after the Udanti-Sitanadi, Achanakmar and Indravati Reserves.



- It is spread across the combined areas of the Guru Ghasidas National Park and Tamor Pingla Wildlife Sanctuary in Chhattisgarh.
- This area is home to various mammal species, including tigers, leopards, hyenas, jackals, wolves, sloth bears, barking deer, chinkara, and chital.
- It serves as the origin of significant rivers such as Hasdeo Gopad and Baranga and a catchment area for rivers like Neur, Bijadhur, Banas, Rehand, and numerous smaller rivers and rivulets.

### Guru Ghasidas National Park

- It connects Jharkhand and Madhya Pradesh and provides a corridor for tigers to move between the Bandhavgarh and Palamau Tiger Reserves.
- It was originally part of the Sanjay Dubri National Park, Guru Ghasidas Park was created as a separate entity in Chhattisgarh's Sarguja region after the formation of the state in 2001.





# Mount Kilimanjaro

A team of climbers from the Himalayan Mountaineering Institute (HMI) in Darjeeling scaled Uhuru Peak, the highest peak of Mt. Kilimanjaro in Tanzania, recently.

- Mount Kilimanjaro is Africa's tallest mountain and the world's largest free-standing mountain (which means not part of a mountain range).
- It is located in northeastern Tanzania, near the Kenya border.
- It extends approximately east-west for 50 miles (80 km).
- Also called a stratovolcano, Kilimanjaro is made up of three cones: Kibo, Mawenzi, and Shira.
- Kibo is the tallest of the three volcanic formations, which is also a dormant volcano, while the other two are extinct volcanoes.
- Uhuru Peak, the highest free-standing peak in Africa, is located on the volcanic cone Kibo.
- Kilimanjaro is also known for its snow-capped peak.
- The mountain has five main vegetation zones, from the lowest to the highest point: Lower slopes, montane forest, heath and moorland, alpine desert, and summit.
- The Kilimanjaro National Park was named a United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage Site in 1987.

# Nankai Trough

Japan's meteorological agency said the likelihood of strong shaking and large tsunamis is higher than normal on the Nankai Trough.

- Nankai Trough is a "subduction zone" between two tectonic plates in the Pacific Ocean, where massive earthquakes have hit in the past.
- This underwater subduction zone (nearly 900 km long) is where the Eurasian Plate collides with the Philippine Sea Plate, pushing the latter under the former and into the Earth's mantle.
- It runs from Shizuoka, west of Tokyo, to the southern tip of Kyushu Island.
- It has been the site of destructive quakes of magnitude eight or nine every century or two.
- These so-called "megathrust quakes", which often occur in pairs, have been known to unleash dangerous tsunamis along Japan's southern coast.
- Subduction Zone is a spot where two of the planet's tectonic plates collide and one dives, or subducts, beneath the other.
- Tectonic plates are pieces of the Earth's rigid outer layer that slowly move across the planet's surface over millions of years.
- This is the main tenet of plate tectonics, the theory that portions of Earth's shell glide over the lower mantle, taking continents with them.



- Subduction zones occur in a horseshoe shape around the edge of the Pacific Ocean, offshore of the USA, Canada, Russia, Japan, and Indonesia, and down to New Zealand and the southern edge of South America called the "Ring of Fire".
- These subduction zones comprise "the most seismically and volcanically active zone in the

world," responsible for more than 80% of the world's biggest earthquakes and most of the planet's active volcanoes.

# GUAM ISLAND

INS Shivalik reached Guam for an Operational Turnaround on successful completion of the recently concluded world's largest Multinational Maritime Exercise RIMPAC 2024.

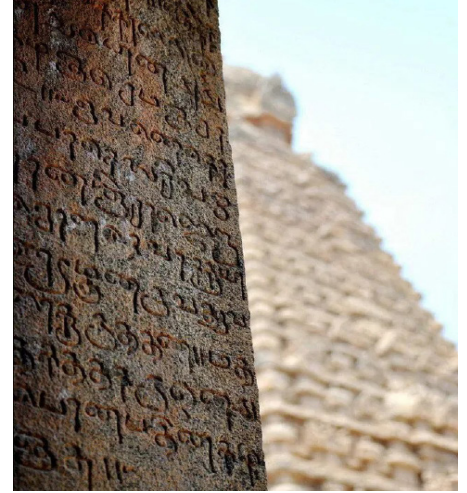
- Guam Island is the largest, most populous, and southernmost of the Mariana Islands in the Northern Pacific Ocean.
- It is an island territory of the United States of America.
- It was a Spanish colony till 1898, then became a US territory after the Spanish-American War.
- Climate has a pleasant tropical climate tempered by the northeast trade winds and the north equatorial ocean current that flows west across the Pacific.
- Native Guamanians, ethnically called Chamorros, are of basically Malayo-Indonesian descent with a considerable admixture of Spanish, Filipino, Mexican, and other European and Asian ancestries.
- INS Shivalik is the first stealth multi-role frigates built for the Indian Navy.
- It is built at the Mazagon Dock Limited (MDL), located in Mumbai.
- It was commissioned into the Indian Navy on April 29, 2010.



## Vattezhuthu : Discovered

*Archaeologists recently discovered a Vattezhuthu and eight Tamil inscriptions from the 1,00-year-old Thalikiswarar temple in Tirupur district, Tamil Nadu.*

- Vattezhuthu popularly known as Vattezhuthu, was a syllabic alphabet of south India (Tamil Nadu and Kerala) and Sri Lanka used for writing the Tamil and Malayalam languages.
- The name Vatteluttu is thought to mean either 'rounded script', 'northern script', or 'chiseled script'.
- It first appeared in stone inscriptions in southern India dating from the 4th century AD.
- It probably developed from the Tamil-Brahmi script; a variant of the Brahmi script used to write Old Tamil between from about the 3rd century BC until the 1st century AD.
- Vatteluttu was used to write Tamil and Malayalam in Tamil Nadu until the 9th century.
- In Kerala, Vatteluttu continued to be used until the 15th century. It changed over time to become the Malayalam script, with some letters borrowed from the Grantha script.
- Vatteluttu also developed into the Koleluttu script, which was used, especially by Christians and Muslims, in Kerala until the 19th century.



## Cultural Property Agreement

*India and the US signed the first-ever Cultural Property Agreement (CPA) to combat the illegal trafficking of cultural artefacts and ensure the return of antiquarian objects to their place of origin.*

- The agreement aligns with the Article 9 of the 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property.
- The CPA restricts the importation into the US of certain archaeological and ethnological material ranging from 1.7 million years ago through 1947.
- The list of such items restricted for import will be promulgated by the Government of the US.
- The US shall offer to return to India any object or material on the Designate List forfeited to the Government of the US.
- Similar agreements exist between the US and countries like Algeria, Cambodia, China, Egypt, and Italy.
- The agreement is the result of year-long bilateral discussions initiated during the G20 meetings. Under India's G20 Presidency, the focus on protecting cultural property has been a top priority.
- The Kashi Culture Pathway and the New Delhi Leaders' Declaration (NDLD) in 2023 underscored the commitment to fighting illicit trafficking.
- It marks a shift in the global development strategy, emphasising culture as a standalone goal in the post-2030 development framework.

# Juanga Tribe

*The District Level Committee of Keonjhar in Odisha cleared the hurdle for habitat rights under the Forest Rights Act (FRA) to the Juanga, a particularly vulnerable tribal group, by approving the claim recently.*

- Juanga Tribe is an indigenous community in India concentrated in Odisha's Keonjhar district.
- It is one of the 13 Particularly Vulnerable Tribal Groups (PVTG) of the total 62 tribes found in Odisha.
- Originally known as Patuas because of their traditional attire of leaf skirts, the Juang now prefer clothing bought from local markets.
- Originally practitioners of shifting cultivation, some of them are now moving to settled agriculture.
- Hunting is done occasionally, and Juangs of Pallahara are skilled basket weavers also.
- They are skilled in the making of decorative combs and tobacco cases and have also taken to domesticating fowl, pigs, goats and cows to supplement their income.
- They have retained their effective traditional political council.
- Pradhan is the formal headman of the political council, the post of which is not hereditary, and any senior person having manoeuvring capacity can be selected by the villagers.



# 70th National Film Awards 2024

The winners of the 70th National Film Awards are announced at the National Media Center in New Delhi on August 16, with the Malayalam film *Aattam* emerging as the Best Feature Film.

70th National Film Awards 2024 winners:

- Rishab Shetty won the Best Actor award for *Kantara*, the Best Actress honour was shared by Nithya Menen for *Thiruchitrambalam* and Manasi Parekh for *The Kutch Express*, respectively.
- The Best Director honour went to Sooraj Barjatya for his film, *Uunchai*. *Ponniyin Selvan I*, *KGF 2*, *Brahmastra* and *Aparajito* were among the other films which won awards at the ceremony.
- The awards were announced by the chairperson of the Feature Film Jury, Rahul Rawail; Nila Madhab Panda, chairperson of the Non-Feature Film Jury; and Gangadhar Mudalair, chairperson of the Best Writing on Cinema Jury.



## Eri Silk

The North Eastern Handicrafts and Handlooms Development Corporation (NEHHDC) under the Ministry of Development of North Eastern Region (DoNER), Govt. of India, has successfully obtained the prestigious Oeko-Tex certification for its Eri Silk.

- Eri Silk is renowned as the world's only vegan silk, where, unlike other silks, the moth inside the cocoon is not killed.
- Instead, the moth naturally exits the cocoon, leaving it behind for us to use.
- This method, which does not involve killing the moth, makes Eri silk a symbol of compassion and sustainability within the textile industry.
- It is the product of the domesticated silkworm, *Philosamia ricini* that feeds mainly on castor leaves.
- In India, this culture is practiced mainly in the north-eastern states and Assam. It is also found in Bihar, West Bengal and Orissa.
- It is a Geographical Indication (GI) tagged product from Assam.
- Oeko-Tex certification involves a rigorous standard that ensures textiles are tested for harmful substances and produced in environment friendly conditions, is a significant endorsement for Eri Silk.



## Thadou People

A section of the Thadou tribes represented by the Manipur-based Thadou Students' Association (TSA) has formed a global platform to look into critical issues facing the community, particularly in Manipur.

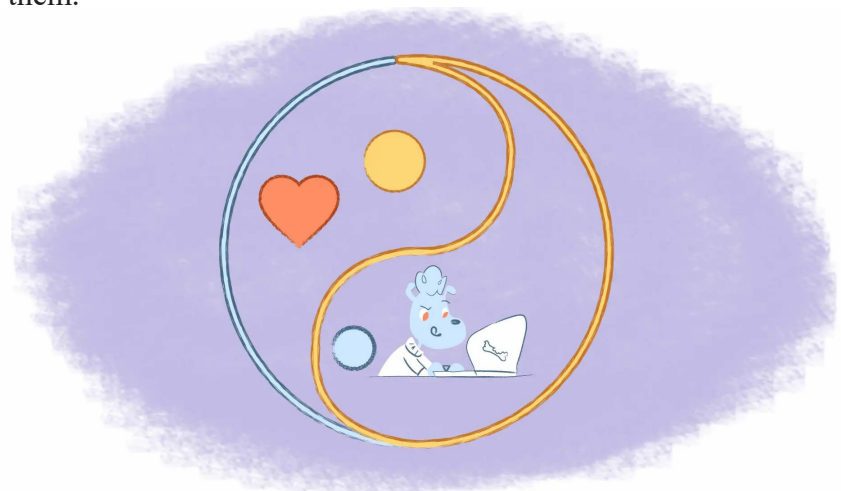
- Thadou people are an indigenous people who live in the hill country adjacent to the Imphal Valley in the northeastern Indian state of Manipur.
- They are the second largest in terms of population in Manipur, next to Meitei, according to the Manipur Census 2011.
- They are also found in Assam, Nagaland, and Mizoram in India, and in Chin State and Sagaing Division in Burma/Myanmar.
- The Thadou language belongs to the Tibeto-Burman family of the Sino-Tibetan languages.
- Thadou subsistence activities include animal, cultivation, hunting and fishing. Jhum (slash-and-burn) agriculture is predominant.
- Thadou settlements are located in forests. Sites on the tops of ridges or just below ridges are preferred.
- Villages are not arranged according to an established urban plan, and there is no marking of the perimeter of a village.
- Almost all Thadou claim to be followers of Christianity.



## Lunisolar calendar

At the ancient site of Gobekli Tepe in southern Turkey, a researcher has identified what might be the world's oldest lunisolar calendar, believed to track the movements of the moon and sun.

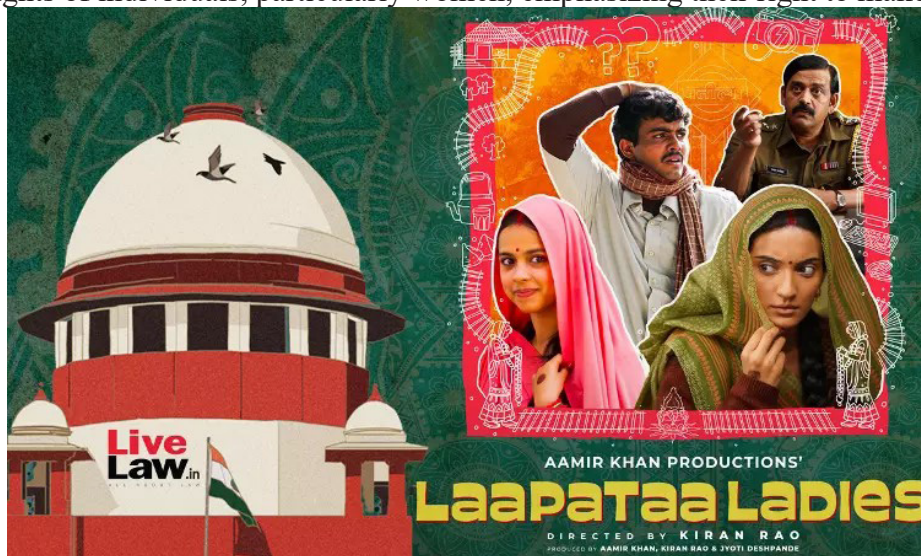
- The V-shaped markings on a stone pillar are thought to document a significant comet strike around 10,850 B.C., which had catastrophic effects on Earth, including triggering a 1,200-year ice age.
- The carvings suggest that ancient people were sophisticated enough to record astronomical events, indicating the event's profound importance to them.



## Movie Laapataa Ladies Screened At Supreme Court

Kiran Rao's film *Laapataa Ladies* was screened at the Supreme Court of India recently.

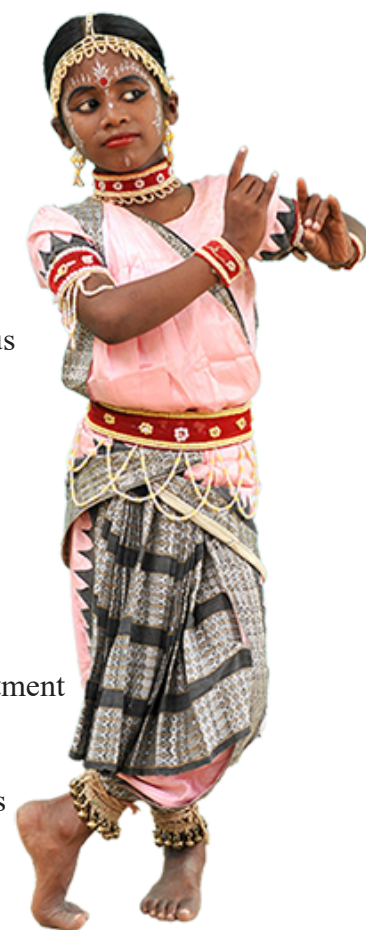
- *Laapataa Ladies*, set in 2001, follows the story of two brides swapped in a train.
- *Laapataa Ladies* explores several ethical aspects through its narrative, including:
  - The film addresses the issues of gender roles and expectations in society, challenging traditional norms and advocating for equality between men and women.
  - The storyline highlights the basic rights of individuals, particularly women, emphasizing their right to make choices about their lives and bodies.
  - The film sheds light on the marginalization and exploitation of women, urging for a more just and fair society where everyone has equal opportunities.
  - By setting the story in a fictitious state, the film draws attention to the cultural nuances and the ethical treatment of individuals within different societal structures.
  - The characters in the film face moral dilemmas, particularly in dealing with the consequences of the bride swap, raising questions about responsibility and ethical decision-making.
  - The film touches on the importance of personal autonomy and the right to self-determination, especially for women in a patriarchal society.



## GOTIPUA DANCE

*Gotipua child artists, who experience the world as their stage and applause as a constant companion, face an uncertain future when they hit puberty.*

- Gotipua Dance is the majestic folk dance of Orissa which is the precursor to the classical Odissi dance form.
- In the Orissa language, “Goti” means “single” and “Pua” means “boy”.
- In these children are trained in singing, dancing, yoga, and acrobatics within gurukuls or akhadas.
- They dress as girls and perform at temple festivals, social gatherings, and religious ceremonies.
- In ancient times, the temples of Orissa had female dancers called “Devadasi or Mahari (in Orissa)” who were devoted to Lord Jagannath.
- During the time of Bhoi king Rama Chandra Dev with the decline of the Mahari dancers, the class of these boy dancers came into existence in Orissa, to carry out the tradition.
- In its present form, the Gotipua Dance is more precise and systematic in its conception.
- Its performance includes Vandana (prayer to God, or a guru), Abhinaya (the enactment of a song) and Bandha Nritya (rhythms of acrobatic postures).
- Bandha Nritya is a demonstration of physical prowess requiring great agility and flexibility. Preferably performed in adolescence, with age, this dance form becomes increasingly difficult to execute.
- The dancers make extensive use of their hands and feet.
- Musical accompaniment to the Gotipua Dance is provided by the Mardala (a pakhawaj), Gini (small cymbals), harmonium, violin and flute.



# Humayun's Tomb

Union Minister of Culture and Tourism recently inaugurated the sprawling 100,000 square feet state of the art – Humayun's Tomb World Heritage Site Museum at the Humayun's Tomb, a UNESCO World Heritage site in New Delhi.

- Inspired from the ancient Baolis or stepped wells of Delhi, this underground museum is designed to retain the visual integrity of the monuments located in the complex, as per the UNESCO recommendation that site museums be provided at World Heritage Sites to provide the cultural context of the heritage edifice.

- Humayun's tomb is the tomb of Mughal emperor, Mirza Nasir al-Din Muhammad commonly known as Humayun situated in Delhi, India

- The tomb was commissioned by Humayun's first wife and chief consort, Empress Bega Begum, in 1558.

- It was designed by Persian architects Mirak Mirza Ghiyas and his son, Sayyid Muhammad.

- Humayun's Tomb is notable for being the first garden-tomb on the Indian subcontinent and the first structure to use red sandstone at such a scale. It features high arches and double domes, showing considerable Persian influence.

- The tomb was declared a UNESCO World Heritage Site in 1993. o It is situated in Nizamuddin East, Delhi, near the Dina-panah Citadel, also known as Purana Qila.



## Master Clock System for Railways

For the first time, Indian Railways is set to develop a master clock system to synchronize time across its entire network, addressing issues with the current manual time-keeping method.

- This initiative arose due to difficulties in investigating rail accidents caused by time mismatches across different systems and applications.

- The existing system involves station masters setting time manually based on instructions from section controllers, leading to discrepancies during accident investigations.

- The new master clock system will source time from reliable sources like NAVIC or the National Physical Laboratory (NPL) and will be integrated across various railway applications and systems.

- This synchronized time system will enhance operational efficiency and improve the accuracy of post-incident analyses.



## Grain ATM

India's first round-the-clock grain ATM was opened at Mancheswar in Bhubaneswar, Odisha.

- The Annapurthi Grain ATM, developed by the World Food Programme India, is an automated, multi-commodity dispensing solution providing 24/7 access to grains like rice, wheat, and other commodities.

- It allows anyone with a valid Public Distribution System (PDS) ration card in India to access their entitlement, regardless of their state or union territory.

- Dispenses up to 50 kilograms of grain in five minutes, reducing waiting time by 70%.

- Operates through biometric authentication to ensure secure and consistent access to food rations.

- Energy-efficient and compatible with solar panels for automatic refilling.



# AMRIT BHARAT STATION SCHEME

Western Railway has announced the inclusion of Kandivali and Dahisar railway stations in the recently launched Amrit Bharat Station Scheme (ABSS).

- Amrit Bharat Station Scheme is an ongoing Indian Railways mission launched in February 2023 by the Ministry of Railways to redevelop railway stations across India.
- It is designed for the ongoing development of railway stations with a long-term perspective.
- It involves the creation of master plans and their phased implementation to improve various aspects of station facilities.
- The development plan takes into account the unique needs of each station, promoting a holistic approach to railway station enhancement.
- The scheme aims to transform railway stations into modern, well-equipped hubs with improved passenger amenities, better traffic circulation, inter-modal integration and enhanced signage.
- The scheme shall cater for the introduction of new amenities as well as the upgradation and replacement of existing amenities.
- The ultimate goal is to transform these stations into vibrant city centres over the long term.
- This includes providing clean and hygienic waiting areas, restrooms, Special amenities for the disabled, and food and beverage outlets.
- This includes creating separate entry and exit points for passengers and vehicles, widening roads and foot-paths, and providing adequate parking facilities.
- This includes providing seamless connectivity between railway stations and other modes of transport, such as buses, taxis, and autorickshaws.
  - This includes providing clear and visible signage in multiple languages to guide passengers.
  - This includes using energy-efficient lighting and appliances.

## Disaster Management (Amendment Bill), 2024

The Government recently introduced the Disaster Management (Amendment) Bill 2024 in the Lok Sabha.

- Disaster Management (Amendment Bill), 2024 seeks to amend the Disaster Management Act, 2005, which was enacted to provide for the effective management of disasters.
- The bill makes provision for the constitution of “Urban Disaster Management Authority” for State capitals and large cities having municipal corporations, except the union territories of Delhi and Chandigarh.
- The bill empowers the National Disaster Management Authority (NDMA) and the State Disaster Management Authorities to prepare the disaster plan at the national level and state level, respectively, instead of the plans made by the National Executive Committee and the State Executive Committees earlier.
- Furthermore, the NDMA will have the authority to appoint experts and consultants as necessary to fulfil its functions effectively.
- It seeks to create a “disaster database at national and State level.
- The database will include disaster assessment, fund allocation detail, expenditure, preparedness and mitigation plan, risk register according to type and severity of risk, and such other relevant matters, in accordance with such policy, as may be determined by the Union government.
- The bill will grant statutory recognition to existing bodies like the National Crisis Management Committee and the High-Level Committee.
- It also seeks to make provision for a “State Disaster Response Force” by the State Governments.
- A new Section 60A will be added to empower both the Central and State Governments to direct individuals to take necessary actions or refrain from them to mitigate disaster impacts, with penalties for non-compliance not exceeding ₹10,000.





# Natal Indian Congress : 130th Foundation Year

22nd August 2024 marked the 130th foundation year of Natal Indian Congress (NIC) which was established in August 1894, based on a proposal by Mahatma Gandhi on 22nd May 1894.

- It was formed to fight discrimination faced by Indians in South Africa.
- The Natal Indian Congress (NIC) was the first Indian Congress established, founded by Mahatma Gandhi in 1894 to fight against discrimination faced by Indian in Natal (province of South Africa).
- From the 1920s, the NIC operated under the South African Indian Congress (SAIC).
- The organisation underwent a shift towards more radical leadership in the 1930s-1940s with the emergence of Dr. G.M. Naicker, who became its leader in 1945.
- The NIC's increased militancy led to the imprisonment of several leaders by the 1950s and 1960s.
- Despite not being officially banned, repression and harassment led the NIC to halt activities until its revival in 1971 with a focus on civic work.





**HUB CLUB**  
PRESENTS

# HUB QUIZ



**DATE : 15/08/2024 THURSDAY**  
**TIME: 2:00PM-4:00PM**

**1<sup>ST</sup> PRIZE ₹1000/-**  
**2<sup>ND</sup> PRIZE ₹500/-**  
**3<sup>RD</sup> PRIZE ₹300/-**



**FOR GROUP REGISTRATION**







(A project of MGOCSM, the student wing of the Malankara Orthodox Church)

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