

WEEKLY UPDATES 1<sup>ST</sup> – 7<sup>TH</sup> JULY

<b>ENVIRONMENT</b>
BUSTED RECOVERY PROGRAM
PALM TREES
PEOPLE'S BIODIVERSITY REGISTER
<b>POLITY</b>
CABINET COMMITTEES
SPEEDY TRIALS
SAT
SAMPOORNATA ABHIYAN
SMART CITY MISSION EXTENDED
BHARTIYA NYAY SANHITA
<b>ECONOMY</b>
7 YEARS OF GST
ESANKHYIKI PORTAL
ANTIDUMPING DUTY
CONCERNS OF HIGH CD RATIO
PROJECT NEXUS
9 YEARS OF DIGITAL INDIA
PRODUCER PRICE INDEX PPI
STABLECOINS
<b>INTERNATIONAL RELATIONS</b>
SHANGHAI COOPERATION ORGANISATION SUMMIT
80 YEARS OF BRETTON WOODS CONFERENCE
AUSTRALIA-INDIA STRATEGIC RESEARCH FUND
<b>SCIENCE AND SPACE TECHNOLOGY</b>
HOLOGRAM TECHNOLOGY
SNOWBLIND MALWARE
PRIMARY AMOEBIC MENINGOENCEPHALITIS (PAM)
ADITYA L1
APHELION
SEBEX 2
AI WASHING
METAL ORGANIC FRAMEWORKS
STEEL SLAG
ISI MARK
LIFI TECHNOLOGY
QUARKS
BRIDGE RECOMBINASE MECHANISM
DISTRICT MINERAL FOUNDATION
<b>AGRICULTURE</b>
APEDA
NATIONAL POLICY ON FPOS
ARAKU COFFEE
<b>HEALTH</b>

NATIONAL MEDICAL COMMISSION NMC
ZIKA VIRUS
<b>MIS</b>
SANTHAL REBELLION
JAGANATH TEMPLE
ABHAY MUDRA
APTANI TRIBE
<b>DEFENCE</b>
RUDRAM -1
EXERCISES IN NEWS
INS RANVIR
STRYKER COMBAT VEHICLES
GALLANTARY AWARD
<b>PLACES IN NEWS</b>
SHYOK RIVER
GANDHI SAROVER
<b>PERSONS IN NEWS</b>
PC MAHALANOBIS
PINGALI VENKAYYA
<b>SPECIES IN NEWS</b>
MEGAFUNA
SYNTRICHIA CANINERVIS
XENOPHRYS APATANI
COMMON GRASS YELLOW
INDIAN GAUR

## BUSTED RECOVERY PROGRAM

The conservation program has been running since 2016 for long-term recovery of Great Indian Bustard and Lesser Florican.

- It is implemented by the Wildlife Institute of India and the next phase is proposed from 2024 to 2033.
- It includes habitat development, in-situ conservation, completion of the conservation breeding centre, releasing captive-bred birds, etc.

**About Great Indian Bustard and Lesser Florican:** Both are species of Bustards in India, and the other two are Bengal Florican and Houbara Bustard

### Great Indian bustard

- Conservation Status
  - Schedule I and IV of Wildlife Protection Act, 1972
  - IUCN: Critically Endangered
  - Appendix I of CITES.
  - Listed under Species Recovery Program.
- Behaviour and Characteristics:
  - Males play no role in the incubation and care of the young.
  - A grassland species, endemic to the Indian subcontinent.
  - Omnivorous and opportunist eaters.
- Habitat: confined mostly to Rajasthan and Gujarat; Small populations occur in Maharashtra, Karnataka and Andhra Pradesh



### Lesser florican

- Conservation Status
  - Schedule I of Wildlife Protection Act, 1972
  - IUCN: Critically Endangered
- Behaviour and Characteristics:
  - A grassland species, endemic to the Indian subcontinent.
  - Male floricans are generally shorter and lighter than their female counterparts.
  - Omnivorous and known for aerial courtship display
- Habitat: Rajasthan, Gujarat, Madhya Pradesh, and parts of Andhra Pradesh, Maharashtra, and Karnataka



## PALM TREES

Odisha will plant palm tree to combat lightning deaths.

### About Palm Tree

- Belongs to Tropical Forest Ecosystem.
- Varieties of palm Trees: Coconut, Oil Palm, Arecanut, Palmyrah etc.
- Palmyrah is declared as State Tree of Tamil Nadu.
- Characteristics of Palm trees:
  - Act as natural conductors during lightning strikes and prevent loss of lives.
  - Male palm tree produces only flowers, while female tree produces fruits as well.
- Benefits:
  - Palm leaf is common writing medium extensively used in Southeast Asian countries.
  - Palm leaves are used as construction materials for fences, walls, and roofs.
  - Provide edible and non-edible products

## PEOPLE'S BIODIVERSITY REGISTER

Thazhakara panchayat in Kerala recently published their updated PBR.

### About PBR

- Statutory recognition: Under the Biological Diversity Act (2002),
- Biodiversity Management Committee (BMC) to prepare PBR in consultation with local people
- Purpose: To document and safeguard bioresources and associated knowledge.

### Information in PBR:

- Availability and knowledge of local biological resources, their medicinal or any other use.
- Any other traditional knowledge associated with them.
- **Relevance:**
  - Supports claims of local ownership of biodiversity & traditional knowledge.
  - Helps sustainable resource management Groynes
  - Residents of coastal Ernakulam (Kerala) protest the lack of effective measures towards mitigating coastal erosion, and incomplete erection of sea groynes.

### Groynes

- They are shore protection structures built perpendicular to the shoreline of coast or river.
- Groynes trap sediments from longshore drift so that the coast behind the sand layer is protected from erosion.
- Rock, wood, steel and sand-filled bags are often used for constructing groynes.
- Functions: Reduced erosion, greater wave energy dissipation and long-term stabilization of coastlines.
- Other methods of coastal protection: Seawalls with tetrapods (Mumbai), Offshore Reefs, Breakwater, Beach Nourishments etc.



## CABINET COMMITTEES

The Union government constituted eight Cabinet committees.

### About Cabinet committees

- These are constituted under the Transaction of Business Rules, 1961.
- The cabinet makes use of the committee system to facilitate decision-making in specific areas.
- They are **extra-constitutional in emergence**. In other words, they are not mentioned in the Constitution. However, the Rules of Business provide for their establishment.
- There are **two types: standing and ad hoc**.
- The former is permanent, while the latter is temporary. Ad hoc committees are constituted from time to time to deal with special problems. They are disbanded after their task is completed.
- They are **set up by the Prime Minister** according to the exigencies of the time and requirements of the situation. Hence, their number, nomenclature, and composition vary from time to time.

- **Their membership varies from three to eight.** They usually include only Cabinet Ministers. However, the non-cabinet Ministers are not debarred from their membership.
- They are **mostly headed by the Prime Minister.** Sometimes other Cabinet Ministers, particularly the Home Minister or the Finance Minister, also acts as their Chairman. But, in case the Prime Minister is a member of a committee, he invariably presides over it
- These include cabinet committees on:
  - Appointments
  - Accommodation
  - Economic Affairs
  - Parliamentary Affairs
  - Political Affairs
  - Security
  - Investment and Growth
  - Skill, employment and livelihood

## SPEEDY TRIALS

The Supreme Court affirmed that the constitutional right of a speedy trial, as enshrined in Article 21, applies to all cases regardless of the crime's gravity.

### Speedy Trial as Constitutional Right

- It emphasizes that defendant should be tried for their alleged crimes within a reasonable time period.
- In *Kartar Singh Vs State of Punjab (1994)*, a Constitution bench of the Supreme Court unequivocally construed the right of speedy trial as a fundamental right.
- Other Important Judgement: *Abdul Rehman Antulay vs RS Nayak Bharatiya Nagarik Suraksha Sanhita (BNSS)*, the new code that has replaced Criminal Procedure Code (CrPC), has sought to address delayed justice.

## SAT

Chief Justice of India has advocated for more SAT benches in view of rapid growth in market and increased volume of financial transactions.

### SAT

- **Statutory body under SEBI Act, 1992.**
- **Location:** Only one bench in Mumbai.
- **Nodal Ministry:** Ministry of Finance.
- **Jurisdiction:** Whole of India
- **Composition:** Presiding Officer, and Judicial Member and Technical Member
- **Tenure:** Five years and eligible for reappointment for maximum five years (upto age of seventy years).
- **Functions:** Hears and disposes of appeals against orders passed By SEBI or an adjudicating officer under SEBI Act; Insurance Regulatory Development Authority of India; Pension Fund Regulatory and Development Authority

## SAMPOORNATA ABHIYAN

It is a 3-month campaign to achieve saturation of 6 key indicators in Aspirational Districts and 6 key indicators in Aspirational Blocks.

- Districts and blocks are under the Aspirational Districts Programme and Aspirational Blocks Programme respectively.
- Key indicators across aspirational districts include number of Soil Health Cards distributed, percentage of schools with functional electricity at the secondary level, percentage of children fully immunized, etc.
- Key indicators across aspirational blocks include percentage of persons screened for Diabetes and hypertension, Percentage of SHGs that have received a Revolving Fund, etc.

## SMART CITY MISSION EXTENDED

Centre government has extended the Smart City Mission timeline till March, 2025.

### About Smart City Mission

- Ministry: Ministry of Housing and Urban Affairs (MoHUA).
- It was launched in 2015 as a Centrally Sponsored Scheme.
- Aimed at promoting cities that provide core infrastructure, a clean and sustainable environment, and a high quality of life through the application of 'smart solutions

## BHARTIYA NYAY SANHITA

The three new criminal laws were passed by Parliament in 2023.

- Section 106(2) of the Bharatiya Nyaya Sanhita (BNS), which provides for punishment in hit and run cases, has been put on hold.

New act	Replacing	Main points
Bharatiya Nyaya Sanhita 2023	Indian Penal Code, 1860	<ul style="list-style-type: none"><li>• Community services for petty offense such as including attempted suicide to obstruct public servants' duties.</li><li>• Sexual acts against women under section 18 are classified as rape, regardless of consent.</li><li>• Terrorist act is defined as a separate offence</li></ul>
Bharatiya Nagarik Suraksha Sanhita 2023	Criminal Procedure Code, 1973	<ul style="list-style-type: none"><li>• Detention of under trials: Accused detained for half the maximum sentence must be released on bond, except for death penalty or life imprisonment cases, or those with multiple pending charges.</li><li>• Signatures and finger impressions: Magistrate of the first class can order an accused person, to give specimen signatures or finger impressions or</li><li>• handwriting or voice samples</li></ul>

Bharatiya Sakshya Adhiniyam 2023	Indian Evidence Act, 1872	<ul style="list-style-type: none"> <li>• Electronic and digital records are granted equal legal status as paper documents.</li> <li>• Oral evidence comprises all statements, including electronic ones, permitted or required by the Court from witnesses regarding matters under inquiry.</li> </ul>
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### Significance of new criminal laws

- Reformatory justice: Such as community service instead of imprisonment.
- Modernising the justice system: for ex Indian Penal Code (1860) is outdated and does not reflect current norms of criminal jurisprudence.
- Seamless flow of information: Designed to improve coordination and collaboration between parties involved in investigation and judicial proceedings.

### 7 YEARS OF GST

101st Constitutional Amendment Act introduced the GST in 2017.

- GST is a comprehensive indirect tax levied on the supply of goods and services.
- It is a value-added tax (VAT).

### Key Features of GST

- **One Nation, One Tax:** Replaced multiple indirect taxes levied by the Central and State Governments, such as excise duty, service tax, etc.
- **Dual Structure:** Comprises of the Central GST (CGST) and the State GST (SGST).
- In the case of Inter-state transactions, Integrated GST (IGST) is applicable, which is collected by the Central Government and apportioned to the respective State.
- **Destination-based Tax:** GST is a destination-based tax, levied at each stage of the supply chain.
- **Tax Slabs:** 0%, 5%, 12%, 18%, and 28%.
- **Governance:** GST Council is key decision making body.
- **Goods and Services Tax Network (GSTN)** provides IT system for the GST portal.
- Key Achievements
  - Rise in number of GST taxpayers (grew from 1.05 crore (April 2018) to 1.46 crore (April 2024))
  - Eliminated the cascading effect of taxes.
  - Reduced compliance burden for small taxpayers (e.g composition scheme).
  - Increased intrastate and interstate transactions by electronic way (e-way) bills

### ESANKHYIKI PORTAL

The Ministry of Statistics and Programme Implementation (MoSPI) has developed an eSankhyiki portal.

### About eSankhyiki Portal:

- It provides real-time inputs for planners, policy-makers, researchers and the public at large.
- The objective of this portal is to establish a comprehensive data management and sharing system for ease of dissemination of official statistics in the country.



- It has two modules namely:
  - **Data Catalogue Module.**
  - **Macro Indicators Module.**
- It has officially been launched on Statistics Day.
- The initiative is in sync with the theme of the Statistics Day- '**Use of data for Decision making**' as ease of access of data is the prerequisite for evidence based decision making.
- It is a **user centric data portal** which facilitates use and reuse of information for creating impact through value addition and analysis by the users.

## ANTIDUMPING DUTY

India initiates anti-dumping probe into import of glass fibre from China, Thailand, Bahrain

### About Anti dumping duty:

- Dumping is said to occur when the goods are exported by a country to another country at a price lower than its normal value.
- This is an unfair trade practice which can have a distortive effect on international trade.
- Purpose: protect domestic industry from cheap imports.
- The use of antidumping measures as an instrument of fair competition is permitted by the WTO Anti-dumping Agreement

## CONCERNS OF HIGH CD RATIO

Reserve Bank of India has told banks to bridge the gap between credit and deposit growth and reduce CD ratio.

- CD Ratio is a financial metric representing the percentage of loans a bank has issued relative to its total deposits.

### According to the RBI's Financial Stability Report:

- CD ratio has been rising since September 2021 and peaked at 78.8% in December 2023.
- Over 75% of the banks with C-D ratios above 75% are private sector banks.

### Key Reasons for high CD ratio

- Higher credit growth
- Rising retail credit (includes vehicle loans, personal loans, etc.).
  - From April 2022 and March 2024, bank lending to the retail sector grew at a CAGR of 25.2%.
- Increasing loans to businesses and MSMEs.
- Slower deposit growth: Banks are facing stiff competition with each other.
- Additionally, customers are transitioning from savers to investors and diverting funds to capital markets, slowing deposit growth.

## PROJECT NEXUS

Nexus is a multilateral international initiative to enable instant cross-border retail payments by interlinking domestic Instant Payments Systems (IPS).

- An IPS is an electronic payments system which facilitates inter-bank fund transfer and sends confirmation of payment to the receiver and originator within a minute or less. E.g. Unified Payments Interface (UPI).

### **About Project Nexus**

- Conceptualized by the Innovation Hub of the Bank for International Settlements (BIS).
- BIS was established in 1930 with its head office in Basel, Switzerland and is owned by 63 central banks, including RBI.
- It will connect IPS of four ASEAN countries (Malaysia, Philippines, Singapore, and Thailand) and India and is expected to go live by 2026.
- Nexus is designed to standardise the way domestic IPS connects to one another.
- Rather than an IPS operator building custom connections for every new country to which it connects, the operator only needs to make one connection to Nexus.
- It aims to achieve G20 targets of enabling cheaper, faster, more transparent and accessible cross-border payments.
- **Benefits of Project Nexus:**
  - Simplifies cross-border payments, reducing complexity, cost, and transaction time.
  - It offers complementary low-cost and scalable rail for all payment service providers.
  - It bridges gaps in interoperability by fostering standardisation and harmonisation across diverse systems.

## 9 YEARS OF DIGITAL INDIA

Launched in 2015, Digital India Initiative (DII) is a flagship programme to transform India into a digitally empowered society and knowledge economy.

- It is an umbrella programme that covers multiple projects of various Central Ministries/Departments and States and Union Territories (UTs).

### **Key Features of Digital India Initiative**

- **Key Focus Areas:**
  - Digital Infrastructure as a Utility to Every Citizen
  - Governance & Services on Demand
  - Digital Empowerment of Citizens
- **Pillars:** Covers 9 pillars of growth areas.
- **Implementation:** Department of Electronics and Information Technology (DeitY) is a main coordination agency along with other ministries and monitoring committee (headed by Prime Minister).
- **Initiative launched:** Unified Mobile Application for New-age Governance (UMANG), DigiLocker etc.
- Digital India Initiative has led to Ease of Living and transparency in country:
- **Digital Public Infrastructure:** Enabling a technology-led model for growth that is collaborative, equitable, and democratises opportunity.

- **Financial Inclusion:** Over 11 Crore farmers now receive money directly in their bank account. Over 137 Crore Aadhaar numbers generated.
- **BharatNet:** Under it, 6.83 lakh km of optical fibre network has been laid.
- **Key challenges faced by Initiative:** Coordination Issues (Program covers many departments), Rural- urban digital divide, etc

## PRODUCER PRICE INDEX PPI

Department for Promotion of Industry and Internal Trade (DPIIT) is close to finalizing a model to launch a Producer Price Index (PPI) in India that may eventually replace the Wholesale Price Index (WPI) in line with most G20 economies & international standards.

- Previously, Government had set up a Working Group headed by B.N Goldar to suggest methodology and framework for introduction of PPI in India.

### About PPI

- It measures the average change in the price a producer receives for his goods/services sold in the domestic market/ exports.
- **Two types:**
  - Output PPI: When goods/ services leave the place of production
  - Input PPI: When goods/ services enter the production process.
- **Need to replace WPI**
- WPI has inbuilt bias due to double/ multiple counting of same product.
- WPI doesn't include exports and imports.
- WPI also excludes the service sector (about 55% of GDP). Wholesale Price Index (WPI)
- - WPI measures changes in the prices of goods sold and traded in bulk by wholesale businesses to other businesses.
- **Published by:** Office of Economic Adviser, Ministry of Commerce and Industry.
- **Base Year:** 2011-12.

## STABLECOINS

Recent volatility in Stablecoin market, like the collapse of TerraUSD, has raised concerns about the stability and reliability of these digital assets.

### About Stablecoin

- It is a type of cryptocurrency whose value is pegged to another asset, such as a fiat currency or commodity such as gold, to maintain a stable price.
- It provides an alternative to the high volatility of popular cryptocurrencies, making them potentially more suitable for common transactions.

## SHANGHAI COOPERATION ORGANISATION SUMMIT

Belarus becomes 10th Member to join SCO.

- Adopted Astana Declaration, Cooperation Program to Counter Terrorism, Separatism, and Extremism for 2025-2027, Anti-Drug Strategy for 2024-2029, SCO Development Strategy until 2035.

- Under Astana Declaration, member states underscored SCO's role in bolstering global peace, and shaping a new democratic and economic order.
- Approved Economic Development Strategy's Action Plan until 2030 and strategies for energy cooperation till 2030.
- SCO member states endorsed the Initiative 'On World Unity for a Just Peace, Harmony and Development' (proposed by Kazakhstan), which aims to create multipolar world order with central coordinating role of UN.
- **Importance of SCO for India**
  - **Resources:** Help India in pursuing Connect Central Asia policy and access mineral resources (Uranium reserves in Kazakhstan).
  - **Counter-terrorism:** SCO's Regional Anti-Terrorist Structure (RATS) provides access to key information and intelligence on movements of terrorists and drug-trafficking.
  - **Energy Security:** Region is home to 4% of world's natural gas reserves and approximately 3% of oil reserves.
  - SCO could also facilitate TAPI pipeline.
- **Challenges for India in SCO**
  - Continued perception of SCO being an anti-west forum in Western nations.
  - Conflict among member nations e.g. India-Pakistan.
  - Limited engagement with observer states, dialogue partners and other regional and international organizations.

#### **Shanghai Cooperation Organisation (HQ: Beijing, China)**

- **Genesis:** It is a permanent intergovernmental international organisation founded in Shanghai in 2001 by Kazakhstan, China, Kyrgyz Republic, Russia, Tajikistan, and Uzbekistan.
- **Current Members:** India, Iran, Kazakhstan, China, Kyrgyzstan, Pakistan, Russia, Tajikistan, and Uzbekistan and Belarus. While Afghanistan and Mongolia have observer status.
- **Official language:** Russian and Chinese.
- **Goal:** Strengthening mutual trust, friendship and neighbourly relations among member states; Promoting effective cooperation in political, trade, economic, scientific, technical, and cultural spheres etc.

#### **80 YEARS OF BRETTON WOODS CONFERENCE**

The Bretton Woods Conference, officially known as the United Nations Monetary and Financial Conference was organised in 1944 at Bretton Woods, New Hampshire (USA).

#### **About Bretton Woods Conference**

- Purpose: To agree upon a series of new rules for the post-World War II international monetary system.
- Delegates from 44 nations participated in it.

#### **Key Outcomes:**

- **Creation of the Bretton Woods Institutions:** International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (IBRD), now referred as World Bank (WB).
- **Fixed exchange rate regime:** In it, each member country have fixed their currency in terms of gold or US dollar.
  - However, after the crisis of dollar exchange crises of 1971 (when USA suspended the dollar's convertibility into gold) and 1973, floating exchange rates was promoted.
- **Promotion of Free Trade:** To ensues international prosperity and international peace.

## AUSTRALIA-INDIA STRATEGIC RESEARCH FUND

India Strategic Research Fund Union Minister of State for Science and Technology unveiled the results of 15th round of AISRF.

### About AISRF

- Established in 2006, it is a platform for bilateral collaboration in science, jointly managed and funded by India and Australia.
- **Objectives:**
- Support Australia-India research collaboration in advanced Science and Technology (S&T) to strengthen strategic alliances and foster innovation.
- Facilitate India's and Australia's access to global S&T system.
- It is funding projects across various disciplines, including artificial intelligence and machine learning, biotechnology, urban mining and electronic waste recycling

## HOLOGRAM TECHNOLOGY

Japan has issued new yen banknotes packed with 3D hologram technology to fight counterfeiting.

- Holograms' intricate patterns and properties make them difficult to duplicate completely, which deters counterfeiters.
- Also easily recognized by trained individuals, facilitating quick identification of genuine products.

### Hologram Technology

- It is a photographic pattern that gives a three-dimensional image when illuminated by coherent light.
- Holograms show different images and colors depending on the angle at which they are viewed.
- Formation of Holograph involves principles of interference and diffraction.
- Applications: Medical imaging, weather forecasting, security holograms on credit cards etc

## SNOWBLIND MALWARE

A new malware called 'Snowblind' is targeting Android phones.

### Snowblind Malware

- It is a malware that targets Android devices to steal banking and other sensitive information.
- Malware, or malicious software, is any program or file that's intentionally harmful to a computer, network or server.
- People usually get this virus by downloading a malicious app that looks legitimate.
- It repackages an app to avoid detection and misuses accessibility features to steal sensitive information and control the app remotely.

### PRIMARY AMOEBIC MENINGOENCEPHALITIS (PAM)

Recently, South Korea reported its first case of the rare yet fatal infection - *Naegleria fowleri* or "brain-eating amoeba".

#### About Amoebic Meningoencephalitis (PAM):

- It is a rare, usually fatal, infection of the central nervous system (brain and spinal cord).
- It is caused by a type of free-living amoeba (a microscopic, single-celled organism) called *Naegleria fowleri*.
  - *Naegleria fowleri* occurs in shallow surface waters and incorrectly maintained swimming pools, hot tubs, and spas, particularly in warm climates.
  - The amebas can enter the brain through the nose when people swim in contaminated warm, fresh water.
  - The amoeba then invades the brain and meninges through the nose.
- **Symptoms:**
  - Symptoms, which include fever, headache, vomiting, and sensitivity to light, typically appear within five days of infection and progress rapidly.
  - In the later stages, one can suffer from a stiff neck, seizures, hallucinations, and even coma.
- **Treatment:**
  - There are no standard treatments for the treatment of PAM.
  - Combination therapy using medicines to treat parasites offers the most promise.
- PAM **differs from granulomatous amebic encephalitis**, which is another very rare, usually fatal infection of the central nervous system **caused by** different free-living amebas, *Acanthamoeba* species or ***Balamuthia mandrillaris***.

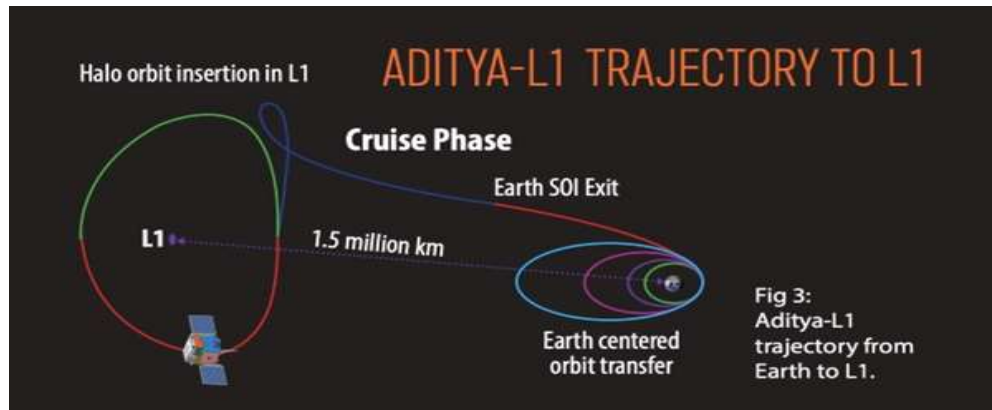
### ADITYA L1

Aditya-L1 was inserted in its halo orbit in early 2024 and taken 178 days to complete a revolution around the Lagrange L1 point.

- At Lagrange point, the gravitational pull of the two large bodies equals the necessary centripetal force required for a small object to move with them.
- For two body gravitational systems, there are a total five Lagrange points denoted as L1, L2, L3, L4 and L5.

## What are halo orbits?

- These are periodic and three-dimensional orbits resulting from an interaction between the gravitational pull of the two planetary bodies and centrifugal force on a spacecraft.
- Halo orbits exist in any 3-body system. E.g., Earth-Moon orbiting satellite system. Mainly linked to L1, L2 or L3.

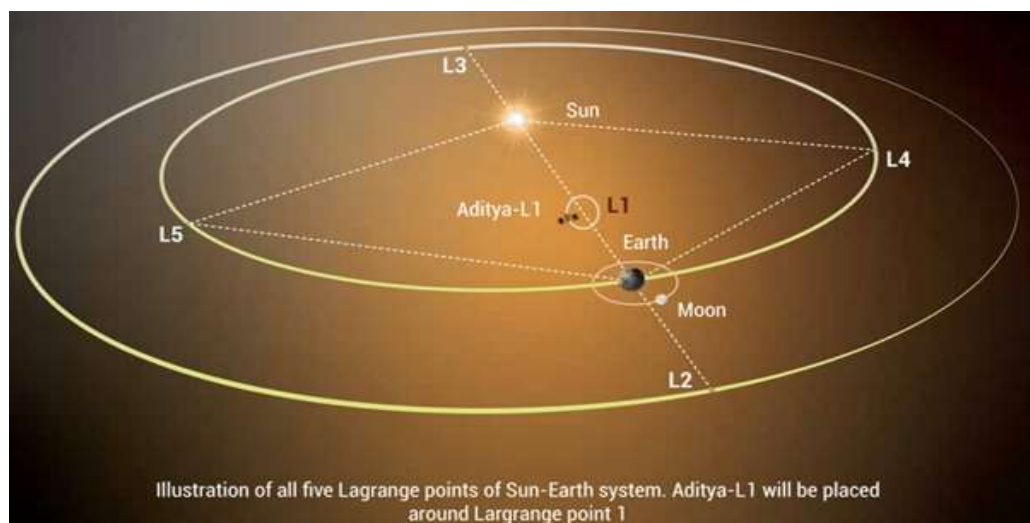


## Benefits of placing Aditya-L1 in Halo Orbit

- Ensuring a mission lifetime of 5 years
- Reducing fuel consumption (minimising station-keeping manoeuvres)
- Ensuring an unobstructed view of the sun

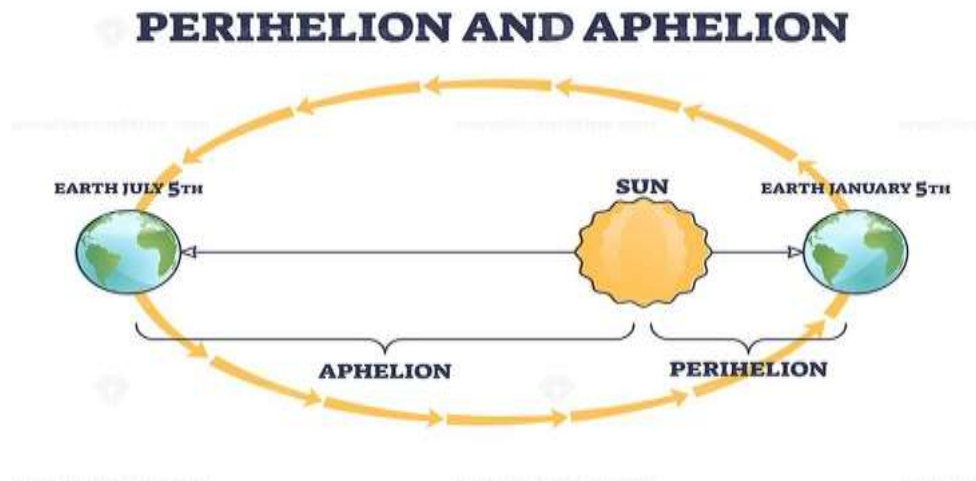
## Aditya-L1 Mission (2023)

- First Indian space mission to study the Sun.
- Objectives: Study the Sun's corona, solar emissions, solar winds and flares, and Coronal Mass Ejections (CMEs), and will carry out round-the-clock imaging of the Sun.
- Payload: Carries 7 payloads (Visible Emission Line Coronagraph (VELC), Solar Ultraviolet Imaging Telescope (SUIT) etc.)



## APHELION

- Earth reaches aphelion every July.
- This year it did so on 5th July.
- It is a point in the orbit of the Earth when it is most distant from the Sun.
- At aphelion, Earth's distance from the Sun is about 152.1 million km.
- In early January, Earth reaches perihelion — the point at which it is closest to the Sun.
- At perihelion, the distance between Earth and the Sun is roughly 147.1 million km



## SEBEX 2

India has successfully developed and certified SEBEX 2, a new explosive that is 2.01 times more lethal than standard Trinitrotoluene (TNT).

### About SEBEX 2:

- SEBEX 2 is said to be among the most powerful non-nuclear explosives in the world.
- It utilizes a high-melting explosive (HMX) composition.
  - This formulation significantly enhances the lethality of warheads, aerial bombs, artillery shells, and other munitions.
- It is 2.01 times more deadly than standard TNT (Trinitrotoluene).
  - Explosive performance is gauged by TNT equivalence, with higher values indicating greater lethality.
  - Currently, the most powerful conventional explosive used in India, specifically in the Brahmos warhead, has a TNT equivalence of about 1.50.
  - Most conventional warheads worldwide have a TNT equivalence ranging from 1.25 to 1.30
- SEBEX 2 was manufactured by Economic Explosives Limited (EEL), Nagpur, a subsidiary of Solar Industries, under the Make in India initiative.
- It has been evaluated, tested, and certified by the Indian Navy under its Defence Export Promotion Scheme.

### Complementary Technologies:



- In addition to SEBEX 2, the Indian Navy has certified SITBEX 1, a thermobaric explosive known for its extended blast duration and intense heat generation.
  - This makes it highly effective in demolishing enemy bunkers, tunnels, and fortified positions.

SIMEX 4, an insensitive munition, has also received certification, emphasizing safety in storage, transport, and operation.

## AI WASHING

Recently, it is revealed that tech companies and startups market themselves as using AI, but not doing so which forms the basis of 'AI washing'.

### About Artificial Intelligence (AI) washing:

- It is a deceptive promotional practice that exaggerates or outright lies about a product or service's use of artificial intelligence (AI).
- **Objective:** To capitalize on people's interest in AI and make an offering seem to be more cutting-edge than it really is.
  - For example, a company may claim their chatbot is "Powered by the latest AI technology" when in reality, it simply matches keywords with pre-written responses.
- It is a term **derived from greenwashing**, where companies exaggerate their environmental friendliness to appeal to customers.
- Similarly, businesses that claim to have integrated AI into their products, when they're actually using **less sophisticated technology**, can be accused of AI washing.
- It is found that the companies had made false statements to their clients about providing 'expert AI-driven forecasts' and **using machine learning to manage retail client portfolios**.

## METAL ORGANIC FRAMEWORKS

Researchers have carried out an analysis of the mechanisms underlying the flexibility of crystals of MOFs.

- They attributed the flexibility to large structural rearrangements associated with soft and hard vibrations within a crystal.

### About MOFs

- Large class of crystalline materials which has ability to absorb gases, such as carbon dioxide, and store them as well as act as filters for crude oil purification.
- It is due to the presence of nanopores.
- Limited stability and mechanical weakness have hindered their broader applications

## STEEL SLAG

Guidelines for Utilization and Processing of Steel Slag in Road Construction, released by Central Road Research Institute (CRRI).

### About Steel slag

- It is a solid waste generated in the process of steel making.
- It is composed of oxides of calcium, iron, silicon, magnesium, etc.
- Key Applications: Road base course material (Steel Slag Road Technology (SSRT)), Blending material for Portland cement, Fertilizer and soil improvement etc.

### Benefits of SSRT

- **Technical:** Improved durability of road; Improved skid resistance; Economical than bituminous etc.
- **Environmental:** Utilization of 19 million tons of steel slagwaste, generated annually; Reduction of carbon footprint in road construction.

### ISI MARK

Government makes Indian Standards Institution (ISI) mark mandatory for stainless steel and aluminium kitchen utensils through a Quality Control Order.

- ISI Mark is developed by Bureau of Indian Standards (BIS), assuring of product quality and safety.

#### BIS

- BIS is the National Standard Body of India established under the BIS Act, 2016.
- It aims at harmonious development of the activities of standardization, marking and quality certification of goods.
- Other BIS Standards:
- **Hallmark:** Official guarantee of purity or fineness of precious metal articles.
- **Eco Mark:** Labelling of environment friendly products.

### LIFI TECHNOLOGY

MoD funded a start-up under the Innovations for Defence Excellence (iDEX) to secure Li-Fi technology for the Indian Defence sector, particularly focusing on the Navy.

- iDEX fosters innovation and technology development in Defence and Aerospace sector. Managed by Defence Innovation Organization under MoD.

### About Li-Fi (Light Fidelity) Technology

- A bidirectional wireless system that uses visible light (400-800 Terahertz) for communication, unlike Wi-Fi which uses radiowaves.
- Transmits data with the help of Light Emitting Diode (LED).
- **Working:** On/off activity of the LED transmitter enables data transmission in accordance with the incoming binary codes (switching ON is a logical '1', switching it OFF is a logical '0').
- **Applications:** Aircrafts, hospitals (operation theatres), power plants etc. where electromagnetic (Radio) interference creates security issues.
- **Advantage of Li-Fi over Wi-Fi**
  - Faster: Combination of low interference and high bandwidths provide high data rate.
  - Cheaper and sustainable: It is up to 10 times cheaper than Wi-Fi, requires fewer components and uses less energy.

- Secure: Since light does not pass through walls like radio waves do, it prevents interception.
- **Disadvantages**
  - Much shorter range than Wi-Fi
  - Can't be accessed beyond the illumination range of light, etc

## QUARKS

Physicists have reported the most precise estimate yet of the Top Quarks' mass.

### About Quarks

- It is one of the two (other being lepton) basic types of fundamental particles described under Standard Model of Physics.
- There are 6 quarks paired in three generations (increasing order of their weight and instability):
  - Up quark and down quark,
  - Charm quark and strange quark,
  - Top quark and bottom quark

### About Top Quarks

- It is the most massive elementary particle that exists, outweighing even the Higgs boson.
- It is difficult to measure its mass due to its unstable nature, where it breaks into lighter, more stable particles in less than 10–25 seconds.

## BRIDGE RECOMBINASE MECHANISM

Bridge Recombinase Mechanism (BRM) utilizes mobile genetic elements or “jumping genes”, which cut and paste themselves into genomes, performing on-the-go DNA manipulation and are present in all forms of life.

- Jumping Genes are small DNA segments with a recombinase enzyme along with extra DNA segments at the ends of the genes that binds and manipulates DNA.
- Gene editing is alteration of genetic material of a living organism by inserting, replacing, or deleting a DNA sequence, with the aim of improving some characteristic of a plant/ animal or correcting a genetic disorder.

### About BRM

- Extra DNA at the ends of jumping genes gets joined together and converts the DNA double helix structure into a single stranded RNA molecule.
- This bridge RNA molecule can bind to two DNA segments (donor and target), allowing for flexible DNA modifications.
- Donor and target loop can be programmed independently, offering great flexibility in inserting or recombining sequences to DNA.
- **Significance of BRM**
  - It will allow researchers to rearrange, recombine, invert, duplicate, move, and perform other editing operations on very long DNA sequences.
  - It can lead to development of more advanced gene editing therapeutics and treatments for diseases

### Other Gene-editing technologies

- CRISPR-Cas9: It is a customizable tool that lets scientists cut and insert small pieces of DNA at precise areas along a DNA strand.
- TALE nucleases: Nucleases that cleave unique genomic sequences in living cells can be used for targeted gene editing.
- Zinc-finger nucleases: Targeted to cleave a chosen genomic sequence and provokes cellular repair processes that in turn mediate efficient modification of the targeted location.
- RNA interference (RNAi): Targets RNA molecules to block or activate gene expression

### DISTRICT MINERAL FOUNDATION

Minister of mines inaugurated the DMF Gallery at Shastri Bhawan in New Delhi.

#### About DMF

- Ministry of Mines, through amendment in Mines & Minerals (Development & Regulation) (MMDR) Act, in 2015, has made a provision for establishment of DMF in all districts affected by mining.
- DMF's objective is to work for the interest and benefit of persons and areas affected by mining related operations.
- Composition and functions of DMF shall be such as may be prescribed by State Government.
- DMF is also given the responsibility to implement Pradhan Mantri Khanij Kshetra Kalyan Yojana.

### APEDA

New Zealand has denied India's request for a certification trademark equivalent to a geographical indication (GI) tag on basmati rice as it is grown outside of India also. Earlier, on the same ground rejected by Australia.

#### About APEDA

- Established under the Agricultural and Processed Food Products Export Development Authority Act, 1985.
- Promotes exports and takes care of GI registration for Indian products abroad, filing the certification of trademark applications.
- Serves as the Secretariat to the National Accreditation Board, overseeing the accreditation of Certification Bodies for organic exports under the National Programme for Organic Production

### NATIONAL POLICY ON FPOs

Key highlights of National Policy on FPOs

- Aim: To scientifically and systematically consolidate existing FPOs, and establish 50,000 FPOs. Policy will directly benefit 2.50 crore farmers.

#### Guiding Principles:

- **Assessment of all schemes:** To promote FPOs, including 2021 Central sector scheme 'Formation and promotion of 10,000 FPOs'.
- **End-to-end Value Chain:** To boost farmers' income through a comprehensive value chain approach, from production to marketing.
- **Emulating AMUL model:** To develop FPOs on 3 tier AMUL model (Village Dairy Cooperative, District Milk Cooperative Union, State Cooperative Milk Federation) which emphasize collective business goals, capacity building, and professional management.

**FPO eligibility:**

- Minimum 300 members in areas other than North East/hilly/UTs (100 in North East/hilly/UTs).
- Registered as legal entity either under Companies Act 2013 or under any law relating to Cooperative Society for time being in force.
- Must register with FPO Registry Portal, maintained by Central Government.
- Central Nodal Department (CND): Department of Agriculture and Farmers' Welfare (DA&FW).

**Role of CND:**

- Allocate funds for FPO development through convergence of central government schemes.
- Making institutional loan available to FPOs at cheaper interest rate.
- Central Nodal Agency: Small Farmers' Agribusiness Consortium, New Delhi (under DA&FW)

**About FPOs**

- FPOs are formed for the purpose of leveraging collectives through economies of scale in production and marketing of agricultural and allied sector.
- Currently, 5000 FPOs have been registered on Open Network for Digital Commerce portal for selling the produce online.
- Its objective is to ensure better income for the producers and enable farmer-producers and agrarian communities to enhance productivity through efficient, cost-effective and sustainable resource use.

**ARAKU COFFEE**

Araku coffee found mention in Prime Minister's 'Mann ki Baat'.

**About Araku Arabica Coffee**

- Grows in the hilly tracks of Andhra Pradesh and Odisha.
- Accredited with Geographical Indication (GI) Tag in 2019.
- Takes its name from Araku Valley, situated in the Eastern Ghats (Andhra Pradesh).
- Weather of the valley with its hot days and cold nights along with the iron-rich soil allows the coffee to ripen slowly and gives it aromatic richness and taste.
- Produced by the tribals with emphasis on organic approach with use of organic manures, green manuring and organic pest management practices

**NATIONAL MEDICAL COMMISSION NMC**

New Chairperson of National Medical Commission (NMC) has been appointed.

## NMC

- Genesis: It is a statutory body constituted by an act of Parliament known as National Medical Commission Act, 2019.
- Aim: Improve access to quality and affordable medical education Functions:
- Lay down policies for regulating medical institutions, medical researchers and medical professionals.
- Ensure coordination among the Autonomous Boards, etc.

## ZIKA VIRUS

In response to Zika virus cases reported in Maharashtra, the Union Health Ministry has issued an advisory to state governments to stop its spread.

### About Zika Virus

- Transmitted: Primarily transmitted by the bite of an infected mosquito *Aedes aegypti*.
- It bites during the day. It is also responsible for transmitting dengue.
- Health Concerns: Non-fatal in nature but associated with microcephaly (reduced head size) of babies born to affected pregnant women.
- It can also trigger Guillain-Barré syndrome, neuropathy and myelitis etc.
- Vaccine: No vaccine available to prevent or medicine for it

## SANTHAL REBELLION

The 169th anniversary of the Santhal rebellion is celebrated. June 30 is celebrated as Hool diwas every year in commemoration of rebellion.

### About Santhal Rebellion (1855-1856)

- Leaders: Siddho, Kanho, Chand, and Bhairav, along with sisters Phulo and Jhano.
- Location: Rajmahal Hills
- Cause: exploitation and oppression of the Santhals by British colonial authorities and moneylenders.
- Karl Marx has referred to it as India's first organised mass revolution in his book Notes on Indian History.
- The Santhal Pargana Tenancy Act of 1876 enacted by the British after the rebellion.
- The territories called 'Santhal Paraganas' were created.
- It became illegal for a Santhal to transfer land to a non-Santhal.

## JAGANNATH TEMPLE

The high-level committee constituted under the chairmanship of the Orissa High Court judge for supervising the inventorisation of valuables stored in Ratna Bhandar of Shree Jagannath Temple has fast-tracked the process of opening the temple treasury after 46 years.

### About Shree Jagannath Temple:

- It is a Hindu temple located in Puri, Odisha.
- It is dedicated to Lord Jagannath, a form of the Hindu deity Vishnu.
- It is believed to have been built during the reign of King Anantavarman Chodaganga Deva, of the Eastern Ganga dynasty, in the 12th century.
- **Architecture:**
  - It is a striking example of Kalinga architecture, a distinct style prevalent in the Odisha region.
  - The temple complex includes shrines, gardens, and sacred tanks, creating a serene atmosphere for devotion.
  - The temple's main structure, the sanctum sanctorum, or the garbhagriha, houses the idols of Lord Jagannath, Balabhadra, and Subhadra.
  - At the pinnacle of the temple, there is a 20-foot-high chakra (wheel) that is positioned in a way to be visible from any part of the city.
- Ratha Yatra is a Hindu festival associated with Lord Jagannath temple.
  - The festival commemorates Jagannath's annual visit to Gundicha Temple via Mausi Maa Temple (aunt's home) near Balagandi Chaka, Puri.
  - It begins on the second day of the bright half of the lunar month of Ashadha (June–July) and lasts for nine days.
  - During this time, the deities are taken out of the Jagannath Puri Temple and placed on three massive chariots.
- It is also one of the four sacred pilgrimage sites, known as the Char Dham, that hold great significance for Hindus.
- It is also a **UNESCO World Heritage Site**.

## ABHAY MUDRA

'Abhaya mudra' was referred to by the Leader of Opposition in his speech.

### About Abhaya Mudra

- Symbol of fearlessness
- It is displayed by the fifth Dhyani Buddha, Amoghasiddhi and the posture used by Buddha to tame a mad elephant.



- Other Mudras associated with Buddha and their meaning
- **Bhumisparsha:** Calling the earth to witness. It is in this posture that Shakyamuni (or Buddha) overcame the obstructions of Mara while meditating on Truth.
- **Dhyana Mudra:** Mudra of meditation. It indicates the perfect balance of thought, rest of the senses, and tranquillity.
- **Dharmachakrapravartana** (turning the wheel): Represents preaching of the dhamma.

## APTANI TRIBE

Researchers from the Zoological Survey of India (ZSI) have recorded a new species of forest-dwelling horned frog from the Talle Wildlife Sanctuary (Arunachal Pradesh).

- New species has been named after the dominant Apatani community in Arunachal Pradesh.

### Apatani Tribe

- The tribe Found in Ziro valley and known for their effective traditional village council called bulyañ.
- Region of tribe has been included in UNESCO's Tentative List as living Cultural Landscape (where man and environment have harmoniously existed together in a state of interdependence).
- Major Festival: Dree and Myok
- Key Dance: Daminda, and Pree dance



## RUDRAM - 1

India successfully test-fires first indigenous anti-radiation missile 'Rudram-1'.

### About Rudram-1

- Air-to-Surface missile developed by DRDO for Indian Air Force (IAF).
- Features:
- Launch platform: Sukhoi-30MKI fighter jets.
- It has Inertial Navigation Systems (INS)-GPS navigation and Passive Homing Head for final attack, allowing it to accurately hit radiation-emitting targets.
- Range: Height ranging from 500 meters to 15 km, and can hit radiation-emitting targets within 250 km
- Significance: Allows IAF to conduct Suppression of Enemy Air Defence (SEAD) operations deep within enemy territory, neutralizing critical air defense installations



## EXERCISES IN NEWS

**Nomadic Elephant :** Joint Military Exercise between armies of India and Mongolia will be conducted in Meghalaya.

**Exercise MAITREE :** Joint military Exercise between India-Thailand was conducted in Thailand.

## INS RANVIR

Recently, the Indian Naval Ship INS Ranvir, of the Eastern Fleet under the aegis of the Eastern Naval Command arrived at Chattogram, Bangladesh as part of an Operational Deployment.

### **About INS Ranvir:**

- It is a Rajput Class Guided Missile Destroyer which has undergone upgrade with state of art weapons and sensors, majority being indigenous.
- It is the fourth of the five Rajput-class destroyers built for the Indian Navy which was commissioned on 28 October 1986.
- During this visit, personnel from the Indian and Bangladesh navies will engage in a wide range of professional interactions including Subject Matter Expert Exchange (SMEE), cross-deck visits, community outreach and friendly sports fixtures.
- On completion of harbour phase, INS Ranvir will participate in a Maritime Partnership Exercise (MPX)/ PASSEX with ships of the Bangladesh Navy.

## STRYKER COMBAT VEHICLES

India is set to carry out trials for US-made Stryker Infantry Combat Vehicles (ICVs) in Ladakh & deserts.

### **About Stryker Combat Vehicles**

- It is a family of eight-wheel-drive combat armoured ICV.
- It has been built by General Dynamics Land Systems Division in the United States.
- It is a V-hull armoured infantry vehicle equipped with a cannon and a mobile gun.
- India and the US are also considering joint production of latest generation of Stryker as part of defence-industrial cooperation roadmap.

## GALLANTARY AWARD

President conferred Kirti Chakras and Shaurya Chakras to the personnel of the Armed Forces, Central Armed Police Forces (CAPF) and State/ UT Police.

- Awards were given for displaying conspicuous gallantry, indomitable courage and extreme devotion to duty.
- Gallantry awards Param Vir Chakra, Maha Vir Chakra and Vir Chakra were instituted on 26th January 1950.
- Later on, 3 more awards were instituted.
- Param Vir Chakra, Ashoka Chakra, Mahavir Chakra, Kirti Chakra, Vir Chakra, Shaurya Chakra (in order of precedence).
- Awards are announced on Republic Day and Independence Day.

## SHYOK RIVER

Five soldiers died after a tank was swept away by Shyok river in Ladakh.

### Shyok river

- It is a right tributary of the Indus River.
- Originates from the Rimo glacier and joined by Nubra River from the north.
- Shyok and Nubra are the main rivers of Nubra Valley.
- Drains northern Karakoram mountains.
- Its placer deposit contains Gold.
- Shyok village on its riverbank is the last Indian village on the road to Daulat Beg Oldie (DBO), a military base near the India-China border



## GANDHI SAROVER

A massive avalanche hit the Gandhi Sarovar also known as Chorabari Tal located near Kedarnath Temple in Uttarakhand.

### Gandhi Sarovar

- Originally known as Kanti Sarovar.
- Originates from the Chorabari Bamak Glacier.
- It is believed that at this Lake Lord Shiva imparted the knowledge of yoga to the Saptrishis.

### Kedarnath Temple

- One of the 12 Jyotirlingas (dedicated to bhagwan Shiva) in India.
- A part of the Char Dham circuit in the state (Yamunotri, Gangotri, and Badrinath are the remaining 3)

## PC MAHALANOBIS

On 'Statistics Day (June 29)', MoSPI launched eSankhyiki portal to establish a comprehensive data management and facilitate ease of dissemination of official statistics in the country.

- Statistics Day celebrates birth Anniversary of P.C. Mahalanobis.

### P.C. Mahalanobis (1893-1972)

- Founded the Indian Statistical Institute

- Established the National Sample Survey (1950) and set up Central Statistical Organisation.
- Shaped India's second Five year Plan (1956-61), also called the Mahalanobis Plan.
  - It focused on development of public sector and rapid industrialisation.
- Gave Mahalanobis distance, a statistical measure.
- Received Padma Vibhushan.
- Establishment of Mahalanobis International Award given to individual for lifetime achievements in statistics in a developing country or region.
  - Supported by Ministry of Statistics and Programme Implementation (MoSPI)

## PINGALI VENKAYYA

Eminent freedom fighter Pingali Venkayya was remembered on his death anniversary (July 04).

### About Pingali Venkayya

- Born in Krishna district of Andhra Pradesh.
- Believer in Gandhian principles and an ardent nationalist.
- Served as a soldier in the British Army in South Africa during the Anglo Boer war (1899-1902).
- Designed the Indian National Flag on request of Mahatma Gandhi.
- Participated in different movements including Swadeshi Andolan under the leadership of Mahatma Gandhi.
- "TirangaUtsav" was celebrated in 2022 on the occasion of his 146th birthday.
- Literary works: 'Bharatha Deshaniki Oka Jatiya Patakam' (National flag of India) in 1916.

## MEGAFUNA

Archaeologists discovered world's oldest known 41,000-year-old ostrich nest in Andhra Pradesh.

- It could provide key information about the extinction of megafauna in the Indian subcontinent.

### About Megafauna

- The term megafauna describes animals above a certain weight threshold (generally above 50 kg).
- Megafauna may be classified based on their dietary type as megaherbivores (plant-eaters), megacarnivores (meat-eaters), and megaomnivores (who eat both plants and meat).
- Anthropogenic pressures on megafauna since the Late Pleistocene have resulted in dramatic losses, especially in the megaherbivores and megacarnivores.
- Some extinct megafaunal species include woolly mammoths, sabre-toothed tigers, giant sloths etc.



### SYNTRICHIA CANINERVIS

Scientists have found a desert moss - *Syntrichia Caninervis* - which is able to withstand Mars-like environment conditions.

- Mosses are small, non-vascular flowerless plants in the taxonomic division Bryophyta.
- Mosses are commonly found in moist-shady locations and are distributed throughout the world except in salt water.

#### **Syntrichia Caninervis**

- It is widespread in some of Earth's harshest locations including Antarctica and the Mojave Desert.
- It could be the first possible pioneer species for the colonization of Mars.



### XENOPHRYS APATANI

Researchers from Zoological Survey of India has recorded a new species of forest-dwelling horned frog (*Xenophrys Apatani*) from Talle Wildlife Sanctuary, Arunachal Pradesh.

- Discovery adds significantly to India's herpetofaunal (group of organisms that includes both amphibians and reptiles) diversity.

#### **About *Xenophrys Apatani***

- It has been named after the Apatani tribe of Arunachal Pradesh.
- Features:

- Leaf-litter dwelling frog, known for living amongst tea leaves.
- Have small horns and is dark brown in colour.
- Xenophrys species: Biogeographic distribution in India is concentrated along the Eastern Himalayas and Indo-Burma biodiversity hotspots



## COMMON GRASS YELLOW

For the first time, a large-scale migration of Common Grass Yellow was observed during the three-day butterfly survey which concluded at the Mudumalai Tiger Reserve (MTR) recently.

### About Common Grass Yellow:

- It is a small, charming butterfly species that can be found across Asia, North America, Africa, and Australia.
- Scientific Name: *Eurema hecabe*
- Habitat: They like to fly quickly, close to the ground, are found in open grassy or bushy terrain, hence their name.
- Features:
  - They have vibrant yellow wings that can range from a sultry sulfur shade to a lush lemon yellow, shifting with the seasons and their location. This is known as 'seasonal polyphenism'.
  - There is black, broad, irregular outer marking on the forewing. The underside of the wing has various black mark with a yellow centre.
  - They are often seen in large groups, and the females usually fly about by themselves to find nectar from a wide variety of plants.
  - They are migratory in behavior and are found migrating in large numbers across the entire African, throughout most of Asia south of the Himalayas.
- **Conservation Status:**
  - IUCN Red List: Least Concern
  - This species is not legally protected in India under any schedules of the Wild Life (Protection) Act, 1972.



## INDIAN GAUR

After several decades, the locally extinct Indian gaur has been spotted in the Nagarjunasagar Srisailem Tiger Reserve (NSTR) in Andhra Pradesh.

### About Indian Gaur:

- The Indian Bison of Gaur is the **largest and tallest** in the family of **wild cattle**.
- Scientific Name: *Bos gaurus*
- **Distribution:** Gaurs are **indigenous** to the **South and Southeast parts of Asia**.
- **Habitat:**
  - Gaurs are primarily the denizens of **evergreen and semi-evergreen forests** along with **moist deciduous forests** with open grasslands.
  - They **prefer hilly-terrains below** an altitude of **1,500-1,800 m** with large and undisturbed forest tracts and abundant water.
- **Features:**
  - They have a **convex shape on the forehead**.
  - The limbs are very **strong and sturdy**.
  - **Both males and females possess horns**. The horns are pale green or yellowish brown in color and are not pointed upward but possess a slightly inward curvature.
  - They have a typically **short tail**.
  - The Gaur is a **social animal**. They generally live in group size of about 30 to 40.
- **Conservation Status:**
  - **IUCN Red List: Vulnerable**
  - Wild Life Protection Act, 1972: Schedule I
  - It is listed in CITES Appendix I.

### Nagarjunasagar Srisailem Tiger Reserve (NSTR)

- **Location:** It is located in the **Nallamala hill ranges** (an offshoot of the Eastern Ghats) **of Andhra Pradesh** and spreads across the undivided districts of Guntur, Prakasam and Kurnool.
- It attained the status of a Tiger Reserve in 1983.
- largest tiger reserve in the country
- It is named after two major dams in the area, Nagarjuna Sagar Dam and Srisailem Dam.
- Two wildlife Sanctuaries, namely Rajiv Gandhi Wildlife Sanctuary and Gundla Brahmeswaram Wildlife Sanctuary (GBM), constitute the Tiger Reserve.
- The river Krishna traverses through this Reserve for a linear distance of around 270 Kilometers.
- **Topography:** It consists of plateau, ridges, gorges and deep valleys.
- **Vegetation:** Tropical dry deciduous forests having an undergrowth of bamboo and grass.
- The river Krishna has Muggers, Otters and Turtles.