Factly Monthly

Compilation

2025

For UPSC CSE Prelims Exam

August 2025

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IMF's latest World Economic Outlook

News: The International Monetary Fund (IMF) has released the latest update of its World Economic Outlook (WEO) on July 29th.

About IMF's latest World Economic Outlook

Growth rates in %	2023	2024	2025 (forecast)
World Output	3.5	3.3	3
US	2.9	2.8	1.9
China	5.4	5	4.8
Euro Area	0.5	0.9	1
Germany	-0.3	-0.2	0.1
UK	0.4	1.1	1.2
Japan	1.4	0.2	0.7
Russia	4.1	4.3	0.9
India	9.2	6.5	6.4
Pakistan	-0.2	2.5	2.7

Source: IMF

Source – IMF

- The **World Economic Outlook (WEO)** provides a **comprehensive picture of the global economy** as well as details of **individual countries**.
- **Released by:** International Monetary Fund (IMF)
  - The IMF releases the WEO **twice every year**, in April and October, apart from **updating** it twice – in January and July.
- **Key Highlights of WEO 2025 Report**
  - **Theme:** Global Economy: Tenuous Resilience amid Persistent Uncertainty
  - **Key takeaways:** There are **two main takeaways** for the state of the global economy.
    - The **global economy** has proven to be **resilient, albeit tenuous**
    - The **outlook** is plagued by **persistent uncertainty**
  - **Global scenario:** Global growth is projected at **3.0 percent for 2025** and **3.1 percent in 2026**.
    - The forecast for 2025 is 0.2 percentage point **higher** than that in the reference forecast of the April 2025 World Economic Outlook (WEO) and 0.1 percentage point **higher** for 2026.
  - **Indian scenario:** India continues to be a **bright spot** in the global economy.
    - It is expected to grow **4% in 2025**.
    - India is fast **bridging the gap** and ensuring that it **overtakes one developed economy after another**, at least in terms of total GDP.

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About International Monetary Fund (IMF)
- The International Monetary Fund (IMF) is a specialized agency of the United Nations, established in **1944 at the Bretton Woods Conference**.
- **Headquarters**: Washington D.C.
- **Members**: IMF currently has 191 member countries.
- **Objectives of the IMF**
  - To promote international monetary cooperation and exchange rate stability.
  - To facilitate balanced growth of international trade and global economic stability.
  - To reduce poverty and foster high levels of employment and sustainable economic growth.
  - To provide a forum for consultations and policy advice among member countries.

CRIB- A new Human Blood group

News: A new blood group, previously unidentified anywhere in the world, has been discovered in a South Indian woman from Kolar district in Karnataka.

About CRIB- A new Human Blood group
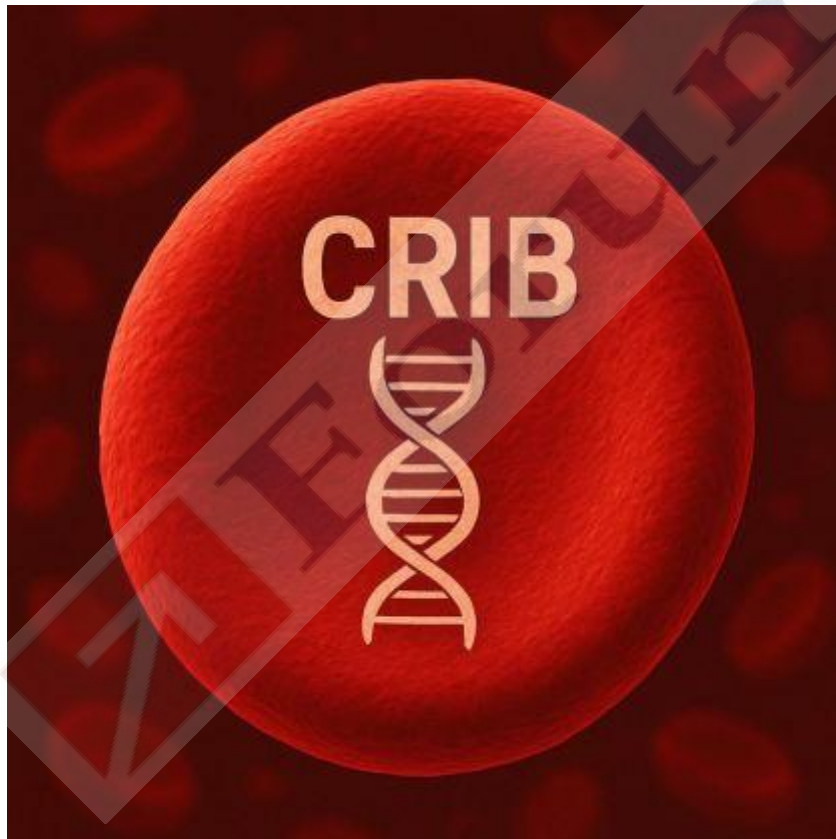
Figure 1. Source – Health Magazine

- The CRIB blood group is a **newly identified blood type** outside the existing major systems like ABO and Rh.
- **Full form:** In recognition of its origin, the group has been officially named '**CRIB**', with **CR representing Cromer** and **IB** standing for **India, Bengaluru**.
- **System:** It belongs to the **INRA (Indian Rare Antigen) blood group system,** which was officially recognized by the **International Society of Blood Transfusion (ISBT) in 2022**.
- It is an **entirely new antigen** not fitting into the **43 known blood group systems** previously recognized by the ISBT.
- **Characteristics**
  - It is characterized by the **absence of a high-prevalence antigen** found in most people.
  - This absence of a common antigen makes **blood transfusions extremely complex** as only other CRIB-negative blood can be used, which is extremely rare.

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- **Importance**
  - It plays a crucial role in **cases of Hemolytic Disease of the Fetus and Newborn (HDFN),** where **antibodies from the mother attack the red blood cells of the fetus**.
  - Identifying the **CRIB group early in such cases** could help **prevent life-threatening complications** during pregnancy.

"Wise Use of Wetlands"

News: Member countries of the Ramsar convention have adopted India's resolution on 'Promoting Sustainable Lifestyles for the wise use of Wetlands' at Ramsar COP15 in Zimbabwe.

About "Wise Use of Wetlands"

Figure 2. Source – MIB

- The **"wise use"** of wetlands is the central philosophy of the **Ramsar Convention.**
- **Definition:** The **Ramsar Convention** defines wise use of wetlands as the **maintenance of wetlands' ecological character**, achieved through the implementation of **ecosystem approaches,** within the context of **sustainable development**".
  - The wetland wise use concept focuses on **ecological character; ecosystem approach and sustainable development.**
- **Decentralized approach:** Wise use also recognises that **management of wetlands** should be **decentralised**.
- **Party obligations:** Contracting Parties **commit to work towards the wise use** of all the wetlands and water resources in their territory, through n**ational plans, policies and legislation, management actions and public education.**
- In **1990** the Contracting Parties adopted **Guidelines for the implementation of the wise use concept**. The Guidelines emphasized the importance of:
  - **adopting national wetland policies**, either separately or as a component of wider initiatives such as national environmental action plans;
  - **developing programmes** covering wetland inventory, monitoring, research, training, education and public awareness;
  - **developing integrated management plans** at wetland sites.
- **Prohibited activities:** The concept of "wise use" also prohibits a number of activities in notified wetlands including:

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- ○ **conversion for non-wetland** uses including encroachment of any kind; setting up of any **industry** and expansion of existing industries; disposal of **construction and demolition waste**; **poaching**; discharge of **effluents** among others.
- **Recent Developments in Wetland Conservation in India**
  - ○ National Plan for Conservation of Aquatic Ecosystems (**NPCA**)
  - ○ The Wetlands (Conservation and Management) **Rules, 2017**
  - ○ **Wetlands of India Portal (2021):** Launched on **October 2, 2021**, this portal provides comprehensive information on India's wetlands.
  - ○ **Wetlands Rejuvenation Programme**: Initiated by MoEFCC in 2020, this program aims to rejuvenate over 500 wetlands across India.
  - ○ **Amrit Dharohar Scheme:**Launched with the Union Budget 2023-24, the Amrit Dharohar Scheme is a key initiative aimed at optimizing wetland utilization over the next three years.
  - ○ **Centre for Wetland Conservation and Management (CWCM):** Established on World Wetland Day 2021, this center focuses on addressing research needs and knowledge gaps in wetland conservation.

About Ramsar Convention and India

- It is an international treaty for the **conservation and wise use of wetlands**.
- It is named after the **Iranian city of Ramsar**, on the Caspian Sea, where the treaty was signed on **February 2, 1971.**
- **India** ratified the convention on **February 1, 1982.**
- India has **91 Ramsar Sites** (1.36 million ha), which is the **largest network in Asia** and **third largest globally.**

Mount Cilo

News: Turkey's glaciers, particularly on Mount Cilo and Mount Ararat, are rapidly melting due to the accelerating impacts of climate change.

About Mount Cilo

- Mount Cilo is located in the Yüksekova district of Hakkâri Province, in the southeasternmost part of Turkey, near the borders with Iraq and Iran.
- It is the second-highest mountain in Turkey
- Mount Cilo is part of the **East Taurus Mountains** (*Doğu Toroslar*) and lies within the **Hakkâri Mountains** range.
- The mountain forms the western part of the **Cilo-Sat Mountains National Park**, which was officially established in the year **2020**.
- Mount Cilo features **five prominent peaks**: **Uludoruk Peak, Suppa Durek Peak, Kosedireği Mountain, Kisara Mountain and Maunseli Sivrisi**

INS Himgiri

News: Recently, the Indian Navy formally took delivery of the advanced guided-missile frigate *Himgiri*.

About INS Himgiri

- It is the **first *Project 17A* ship** to be built by GRSE.
- It is **third vessel in the *Nilgiri-class* series** under Project 17A.

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- These warships are **designed to be versatile, multi-mission platforms** capable of addressing current and future maritime threats. *Himgiri* represents a significant leap in the Indian Navy's operational capabilities.
- It was designed by the **Warship Design Bureau (WDB) and the construction was overseen by the Warship Overseeing Team in Kolkata.**

Features

- The frigate is equipped with **state-of-the-art weaponry, including the *BrahMos* cruise missile system for anti-ship and land-attack missions, and the *Barak 8* missile system for air defence.**
- The ship features a **modular and ergonomic design** and an **advanced AESA radar and modern combat management systems.**
- The ship is capable of **conducting anti-air, anti-surface, and anti-submarine warfare operations.**
- It is powered by a **combination of diesel engines and gas turbines (CODAG configuration),** allowing enhanced speed and agility.
- The ship is also **equipped with full aviation facilities to support the operation of helicopters onboard,** thereby enhancing its surveillance and strike capabilities.
- With 75% indigenous content, the construction of *Himgiri* demonstrates India's robust defence manufacturing capabilities.

Ashtamudi Lake

News: Kerala HC directs State government and SWAK to constitute Ashtamudi Wetland Management Unit for its conservation.

About Ashtamudi Lake

⮕ Second largest estuarine system in Kerala

Flora and fauna
- A number of mangrove species
- **40** associated plant species
- **57** species of birds, **6** migratory ones
- Nearly **100** species of fish

Thousands of fishermen depending directly on the estuary for their livelihood
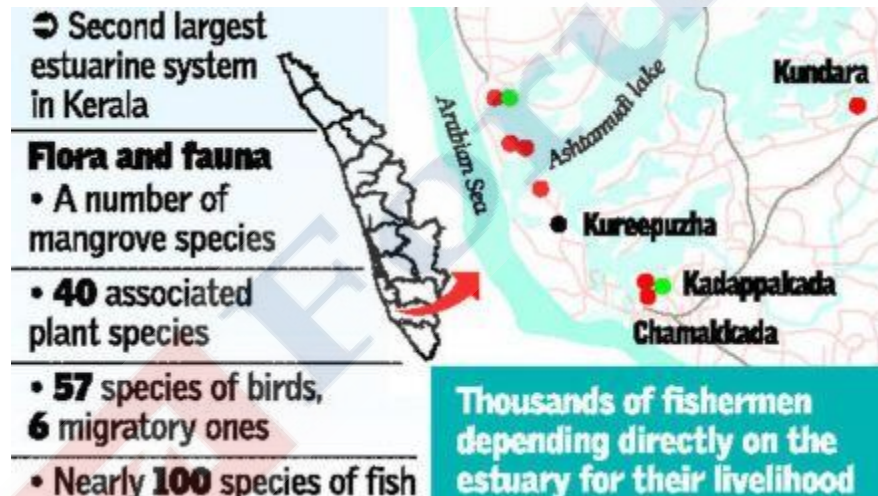
Figure 3. Source – TH

- It is a unique large **palm-shaped** (also described as octopus-shaped) **brackish-water estuarine lake**.
- **Location:** It is located in the **Kollam District of Kerala**.
- It is often referred to as the **gateway to the backwaters** of Kerala.
- It is **second only in size** to the **Vembanad estuary** ecosystem of the state.
- **Naming:** Ashtamudi means **'eight hills or peaks'** (Ashta : 'eight'; mudi : 'peaks') in the local Malayalam language.
    - The name is **indicative of the lake's topography** with its **multiple branches**.
- **Recognition:** It was included in the list of **wetlands of international importance**, as defined by the **Ramsar Convention**, in **2002**.
- **Drainage:** The lake is fed by several rivers, including the **Kallada River**, and eventually **drains into the Arabian Sea via Neendakara estuary.**

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- **Activities:** One of the most popular activities on Ashtamudi Lake is embarking on a **houseboat cruise**.
    - These **traditional Kerala houseboats** are known as **'kettuvallams'**.
- **Biodiversity:** The lake's ecosystem supports numerous species of fis**h, amphibians, reptiles, and invertebrates.**
    - The surrounding **wetlands and mangroves** provide habitat for a variety of bird species, including **kingfishers, herons, egrets, and cormorants**.
    - The **Kallada River**, which flows into Ashtamudi Lake, is a vital **breeding ground** for many species of fish, including the popular **pearl spot fish (karimeen).**
- **Historical and cultural significance**
    - The lake and its surrounding areas have been important centers of trade and commerce for centuries, with **Kollam (formerly Quilon)** serving as a prominent **port town**.
    - The Ashtamudi region is also known for its traditional **coir industry**.

Supply and Use Tables (SUTs)

News: The Ministry of Statistics and Programme Implementation (MoSPI) has released the 'Supply and Use Tables of 2020-21 and 2021-22'.

About Supply and Use Tables (SUTs)

Government of India
Ministry of Statistics and Programme Implementation

Figure 4. Source – MoSPI

- The Supply and Use Tables (SUTs) represent a **detailed snapshot of all economic activities** taking place in the economy.
- They are **powerful analytical tools** that present the structure of an economy as well as interlinkages among the various economic actors.
- **Released by:** Ministry of Statistics & Programme Implementation
- **Purpose of SUT**
    - They serve **multiple purposes** and have gained prominence due to their **statistical robustness** and **analytical flexibility**.
    - They offer a **comprehensive framework** that **integrates the three approaches to measuring Gross Domestic Product (GDP)—production, income, and expenditure** within a unified structure.
    - SUT is a very powerful tool for **comparing and reconciling data from diverse sources**, thereby improving the coherence and consistency between production and expenditure estimates.
    - **Compilation of product-wise value of output** by different industries, net product taxes, trade and transport margin, import on supply side, and intermediate consumption by different industries, final use, export by products make the SUT more data demanding.

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- These detailed product-level information by industry enables policymakers, researchers, and academicians to undertake **granular analysis** of the structure, composition and dynamics of the **economy**.
- **SUT Framework**
  - **Supply and Use Tables (SUT)** are presented as **two interlinked matrices**: the **Supply Table and the Use Table**, structured in a product-by-industry matrix.
  - The **Supply Table** captures the **total supply of goods and services**, both from domestic production by industry and from imports.
  - The **Use Table** records the **utilization of these products** across various components—intermediate consumption by industries, final consumption, gross capital formation, and exports.

Grant in aid to National Cooperative Development Corporation (NCDC)

News: The Union Cabinet has approved the Central Sector Scheme "Grant in aid to National Cooperative Development Corporation (NCDC)" with an outlay of Rs.2000 crore for a period of four years from 2025-26 to 2028- 29.

About Grant in aid to National Cooperative Development Corporation (NCDC)

Figure 5. Source – PIB

- It is a scheme to provide **financial support to the cooperative societies** throughout the country
- **Type:** Central Sector Scheme
- **Outlay:** The scheme provides a **budgetary support** of **2000 crore for a period of four years** from 2025-26 to 2028- 29 (Rs.500 crore each year from FY 2025-26).
- **Financial implications:**
  - On the basis of grant in aid of Rs.2000 crore, NCDC will be able to **raise Rs.20,000 crore** from open market over a span of four years.
- **Benefits**
  - The scheme will benefit approximately **9 crore members of 13,288 Cooperative societies** of various sectors like Dairy, Livestock, Fisheries, Sugar, Textile, Women led cooperatives across the country.
- **Implementation strategy and targets:**
  - NCDC will be the **executing agency** for this scheme for the purpose of **disbursement, follow up, monitoring** of implementation of project, and **recovery** of loan disbursed out of the fund.

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- ○ NCDC will **provide loans to cooperatives either through state government or directly**, as per NCDC guidelines.
- ○ NCDC will provide loans to cooperatives, **long term credit** for setting up/ modernization/ technology upgradation/ expansion of project facilities for various sectors and working capital to run their businesses efficiently and profitably.
- **Impact, including employment generation potential:**
  - ○ Funds provided to these cooperatives will lead to **creation of income generating capital assets** and provide cooperatives with much needed **liquidity** in the form of working capital.
  - ○ It will be an essential tool to **bridge the socio-economic gap** and increase **participation of women** in the workforce.
  - ○ It will also create widespread **employment opportunities** across different skill levels.

About National Cooperative Development Corporation (NCDC)
- The NCDC was established by an **Act of Parliament in 1963** as a **statutory** Corporation under the **Ministry of Cooperation**.
- **Functions**
  - ○ Planning, promoting and financing programmes for production, processing, marketing, storage, export and import of agricultural produce, food stuffs, certain other notified commodities.
  - ○ It finances projects in the rural industrial cooperative sectors and for certain notified services in rural areas like water conservation, irrigation and micro irrigation.
  - ○ It provides direct funding of projects under its various schemes of assistance on fulfillment of stipulated conditions.

Nomination of Panel of Chairperson

News: Lok Sabha Speaker Om Birla announced that N K Premachandran has been nominated as an empanelled member to preside over the proceedings of the House.

About Nomination of Panel of Chairperson

Source – Lok Sabha

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- **Enabling provision:** The **Panel of Chairperson is nominated** under **Section 9 in Rules of Procedure and Conduct of Business in Lok Sabha.**
- **Rule 9:** According to the rule, at the **commencement of the House or from time to time**, as the case may be, the **Speaker** shall nominate from **amongst the members** a panel of **not more than 10 Chairpersons**, anyone of whom **may preside over the House** in the **absence** of the Speaker and the Deputy Speaker when **so requested** by the Speaker or, in the **absence** of the Speaker, by the Deputy Speaker.
- A Chairperson so nominated, **holds office until a new Panel of Chairpersons is nominated**, unless he/she **resigns** earlier from the Panel or is appointed a Minister or elected as Deputy Speaker.
- A **minister cannot** be a member of panel of chairpersons.
- Any one member of panel of chairpersons may **preside** over the House in the **absence** of the Speaker and the Deputy Speaker.
- A member of the panel of chairpersons **cannot preside** over the House, when the office of the Speaker or the Deputy Speaker is **vacant**.
  - During such time, the **Speaker's duties** are to be performed by such member of the House as the **President may appoint** for the purpose.
- It is **not necessary** that the **chairpersons** must be from the **ruling party only**.
  - As per the procedure, **leaders of different parties suggest names of their members** for the panel, after that the Speaker appoints them to the panel.

Darwin Tree of Life (DTOL)

News– The Darwin Tree of Life (DToL) project is nearing the completion of its first phase.

Figure 6. Source- Economist

About Darwin Tree of Life (DTOL)

- It is a large-scale *genome sequencing project* that aims to decode the complete genetic information of around *70,000 species of eukaryotic organisms found in Britain and Ireland.*
- These eukaryotic species include: *Animals, Plants, Fungi, Protists*

Eukaryotes are organisms made up of complex cells that *contain a well-defined nucleus* and other membrane-bound structures (organelles).
This makes them more advanced than *prokaryotes* like bacteria and archaea, which lack a nucleus.

Earth BioGenome Project (EBP)

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The *DToL project* is part of the broader Earth BioGenome Project (EBP), a global scientific effort with the following key features:

- **Objective**: To sequence, catalogue, and study the genomes of all known eukaryotic species on Earth.
- **Timeline**: 10 years
- **Implementation**: Through a global network of researchers, scientific institutions, and partner projects.

Significance of the DToL Project

- **Advances scientific understanding** of biodiversity, evolutionary relationships, and species classification.
- **Supports conservation efforts** by generating genomic data crucial for protecting endangered species and ecosystems.
- **Drives innovation** in fields like *medicine, agriculture, and biotechnology* by uncovering beneficial genes and biological traits present in nature.

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme

News: Prime Minister Narendra Modi recently released the 20th installment of the PM-Kisan scheme from Banauli in Varanasi during his visit to the city.

About Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme

Figure 7. Source – NIC

- The **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)** is a **Central Sector Scheme** launched by the Government of India to provide income support to landholding farmer families.
- **Launched:** The scheme was officially launched by Prime Minister Narendra Modi on **February 24, 2019**, and it came into effect from **December 1, 2018**.
- **Objective:** To supplement the financial needs of farmers in procuring inputs for agriculture and allied activities, as well as to support domestic needs.
- **Features:** Under the scheme, each eligible farmer family receives **₹6,000 per year**, which is paid in **three equal installments of ₹2,000** every **four months**. The amount is directly transferred to the beneficiary's bank account through the Direct Benefit Transfer (DBT) system.
- A farmer family under the PM-KISAN scheme is defined as a unit consisting of a husband, wife, and minor children who own cultivable land according to the land records maintained by the respective State or Union Territory.

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- Initially, the scheme was limited to small and marginal farmers who owned up to **2 hectares of cultivable land**.
- However, from **June 1, 2019**, the scheme was extended to include **all landholding farmer families** regardless of the size of their landholdings. To be eligible, the land must be in the name of the applicant.

Apna Ghar Initiative

News: The Ministry of Petroleum and Natural Gas has launched a new initiative, **'Apna Ghar'**, to improve the safety and welfare of long-haul truck drivers.

About Apna Ghar Initiative

Figure 8. Source – MoPNG

- The **'Apna Ghar' initiative** was launched by the **Ministry of Petroleum and Natural Gas**.
- It aims to improve the **safety, comfort, and welfare** of truck drivers during long-distance journeys.
- The initiative supports India's trucking community, which plays a vital role in maintaining national supply chains.
- As of **July 1, 2025**, **368 'Apna Ghar' units** have been established. These units have a total of **4,611 beds**.
- The facilities have been set up by **Public Sector Oil Marketing Companies (OMCs)** at their **retail fuel outlets**.

Objective of the Programme

- To provide **resting and refreshment facilities** for truck drivers on **national and state highways**.
- To reduce **driver fatigue** and promote **road safety**.
- To improve the **quality of life** for truckers by offering hygienic and dignified rest areas.

Key Facilities Offered

- Each Apna Ghar unit includes:
  - **Dormitory accommodation** for rest and sleep.
  - **Restaurants or dhabas** offering meals.
  - **Clean toilets** and **dedicated bathing areas**.
  - **Self-cooking spaces** for those who prefer to cook their own food.
  - **Purified drinking water** to ensure hygiene and safety.
- A dedicated **'Apna Ghar' mobile application** has been launched.
  - The app allows: **Online bookings, User registrations and r**eal-time access to facility information.

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Rhisotope Project

News: A South African university launched an anti-poaching campaign with a unique approach – injecting radioactive isotopes into rhino horns.

About Rhisotope Project

Source – IAEA

- It is a pioneering conservation initiative begun in **South Africa in 2021**, aiming to **combat rhino poaching** by injecting safe, traceable amounts of **radioactive isotopes into live rhinoceros horns.**
- **Launched by: University of the Witwatersrand**, with support of the International Atomic Energy Agency (**IAEA**)
- **Objective:** The Project aims at safely **inserting radioactive isotopes** into rhino horns to deter poachers and **stop smuggling** by making the horns **detectable at international borders**.
- **Working/Procedure**
    - **Injection:** A small **hole** is drilled in the horn and **Radioisotope** is inserted into it.
        - The **radioactive isotopes or radioisotopes** are the **unstable** form of an element that **emit radiation** to transform into a more stable form.
        - The radiation can be **traced**, and typically causes changes in the substance it falls upon.
    - **Detection:** The tests conducted under the Project confirmed that individual horns could be **detected** inside full **40-foot shipping containers** by radiation portal monitors (RPMs) already deployed at borders, ports, and airports worldwide.
    - **Safety:** The procedure, according to the researchers, has proven to **show no harm to the rhinos** themselves, while making the horn "useless" and "poisonous" to humans.

Poaching Crisis

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- **South Africa** has the **largest population of rhinos** with an estimated **16,000** but the country experiences high levels of poaching with about **500 rhinos killed for their horns every year**.
- According to the IUCN, the **global rhino population** was estimated to be about **500,000 at the start of the 20th century**. It has since **dwindled to 27,000,** owing to the burgeoning demand for rhino horns.

Other Projects to Save Rhino

- **Dehorning of Rhinos:** The project involves the removal of horns of Rhino's in order to deter poaching.
  - A **2024 study** showed that dehorning rhinos **reduced poaching by 78 per cent** over seven years on eight reserves, while another study established that this measure **impacted their ability to socialize** with their peers and noted **reductions in the sizes of their home ranges**.

Investor Education and Protection Fund Authority (IEPFA)

News: The Investor Education and Protection Fund Authority (IEPFA) is in the final phase of testing its Integrated Portal, designed to streamline claim processes and enhance accessibility for both investors and companies.

About Investor Education and Protection Fund Authority (IEPFA)

Figure 9. Source – IEPFA

- It is dedicated to **safeguarding investor interests** by facilitating the **return** of **unclaimed shares and dividends** and advancing **financial literacy**
- It is a **statutory body** in India, established in **2016** under the **Companies Act, 2013**.
- **Nodal Ministry:** Ministry of Corporate Affairs
- **Mission:** Its primary mission is to **protect investors' interests**, promote **financial literacy**, and ensure the **return of unclaimed shares**, **dividends**, and other investor dues.
- **Functions:** The Authority is entrusted with the responsibility of **administration of the Investor Education Protection Fund (IEPF),** make refunds of shares, unclaimed dividends, matured deposits/debentures etc. to investors and to promote awareness among investors.
- The **IEPF** is to be utilized for :
  - The **refund** in respect of unclaimed dividends, matured deposits, matured debentures
  - Promotion of **investors' education, awareness and protection**
  - **Distribution of any disgorged amount** among eligible and identifiable applicants who have suffered losses due to wrong actions by any person
  - **Reimbursement of legal expenses** incurred in pursuing class action suits under sections 37 and 245 by members

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- **Initiatives taken:** Through flagship initiatives such as **Niveshak Didi, Niveshak Panchayat, and Niveshak Shivir**, IEPFA empowers individuals to make **informed financial choices** and fosters a **financially aware citizenry**.

Battery Waste Management Rules (BWMR)

News: With growing volumes of lithium batteries waste in country, there is a need to re-analyze the Battery Waste Management Rules (BWMR).

About Battery Waste Management Rules (BWMR)

Figure 10. Source – ET

- There is a growing volume of battery waste in India, with lithium batteries alone accounting for 7,00,000 of the 1.6 million metric tonnes of e-waste generated in 2022.
- Recognizing these risks, the government notified the **Battery Waste Management Rules (BWMR) in 2022** to ensure sustainable management and recycling.

Battery Waste Management Rules (BWMR), 2022

- **Released by:** Ministry of Environment, Forest, and Climate Change
- The rules replaced the **Batteries (Management and Handling) Rules, 2001.**
- These rules guide the **channelisation of depleting resources** towards **refurbishment or recycling**.
- **Key Provisions of the Battery Waste Management Rules, 2022**
  - **Comprehensive coverage:** The rules apply to **all types of batteries –** Electric Vehicle batteries, portable batteries, automotive batteries, and industrial batteries, including both new and refurbished batteries.
  - **Extended Producer Responsibility (EPR):** Producers (including manufacturers and importers) are responsible for the **collection, recycling, and refurbishment** of waste batteries.
    - They must ensure waste batteries are collected and processed for recycling/refurbishment, and recovered materials go back into new battery production.
  - **Collection & recycling targets:** Specific **targets for the recovery** of battery materials:
    - 70% by 2024-25
    - 80% by 2026
    - 90% from 2026-27 onwards
    - 100% of collected waste batteries must be recycled or refurbished

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- ○ **Centralized online portal:** Establishment of a centralized portal for:
    - ○ Registration and reporting for producers, recyclers, and refurbishers
    - ○ Management of EPR certificates
    - ○ Monitoring and compliance.
  - ○ **Polluter Pays Principle (PPP):** Environmental **compensation** is imposed on producers who **fail to meet their EPR targets**.
  - ○ **Ban on landfilling & incineration:** Prohibits disposal of waste batteries in landfills or by incineration to ensure environmentally sound management.
  - ○ **Mandatory registration:** All **producers, recyclers, and refurbishers** must register on the central portal for legal compliance and to continue their operations.
  - ○ **Role of public authorities & entities:** Public Waste Management Authorities and collection entities must **hand over** collected batteries only to **registered recyclers or refurbishers**.
  - ○ **Strict auditing and monitoring:** Regular audits and committee-based monitoring mechanisms are provided to ensure the effective enforcement of the rules.

Battery Waste Management (Amendment) Rules, 2025

- The Battery Waste Management (Amendment) Rules, 2025 further amend the 2022 rules.
- These amendments **focus** on enhancing recycling practices, promoting the use of recycled materials in battery production, and strengthening the framework for Extended Producer Responsibility (EPR).

Key Provisions of Battery Waste Management (Amendment) Rules, 2025

- **Prices of EPR Certificates:** The Central Pollution Control Board shall fix the **highest and the lowest price for EPR certicates**.
  - ○ The prices shall be **equal to 100% and 30%, respectively of the Environmental Compensation leviable** on the obligated entities for **non-fullment of Extended Producer Responsibility** obligations.
  - ○ **Earlier**, EPR certificates were generated by CPCB through the centralised online portal based on the recycled or refurbished quantities and assigned to recyclers or refurbishes, who could sell the assigned EPR certificates to Producer in exchange of waste batteries.
- The **Central Pollution Control Board** shall **prepare and recommend guidelines** for **imposition and collection of Environmental Compensation** from producers and entities involved in refurbishment and recycling of waste battery, in case of non-compliance of these rules.
  - ○ **Earlier**, **Committee for Implementation** constituted by Central Pollution Control Board (CPCB) used to prepare and recommend guidelines for imposition and collection of Environmental Compensation.

HOPE Analog Mission in Tso Kar Valley, Ladakh

News: Indian Space Research Organisation (ISRO) has formally kicked off its first high-altitude analogue mission, Human Outer Planetary Exploration (HOPE), in the Tso Kar valley in Ladakh.

About HOPE Analog Mission in Tso Kar Valley, Ladakh

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Source – Firstpost

- It is **ISRO's first full-scale analogue simulation mission**.
- **Full name:** HOPE is short form of – Human Outer Planetary Exploration.
- **Operated by:** The mission has been **built** and is being **operated by Protoplanet**, a Bengaluru-based startup.
  - It is being **backed by ISRO's Human Spaceflight Centre**.
  - It also involves scientific contributions from **IIT Bombay, IIT Hyderabad, IIST, and RGCB Trivandrum.**
- **Schedule:** The mission is scheduled to be conducted from **1st to 10th August 2025**.
- **Set up at:** It has been set up in one of the most **Mars-like environments** on Earth, a high-altitude, cold desert in **Tso Kar valley in Ladakh** located **4,530 m** above sea level.
- **Aim:** The Mission is **focused on people**, **testing** how humans handle the **physical and mental challenges** they would likely face during a **long space journey**, such as a crewed mission to Mars.
- **Components:** The Hope habitat is made up of **two interconnected modules**:
  - An 8-metre-wide **living unit** for the crew, and
  - A 5-metre **utility module** that contains essential equipment and support systems.
- **Experiments to be done:** Some of the key areas being tested include:
  - **Monitoring physical health:** Real-time monitoring of how the crew's body responds to high altitude and low-oxygen conditions.
  - **Studying mental well-being:** Analysis of stress levels, cognitive functioning, and teamwork performance in an enclosed and isolated setting.
  - **Testing new tech:** Field testing of advanced equipment like biomedical devices, prototype spacesuits, and communication tools under simulated Mars conditions.
  - **Running emergency drills:** Simulations of possible mission crises, such as equipment failure or health emergencies, to test how well response protocols work in extreme environments.

Mahanadi River

News: After a prolonged legal battle over sharing Mahanadi river water in a designated tribunal, Odisha and Chhattisgarh have now expressed willingness to resolve the dispute amicably between themselves.

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About Mahanadi River

Figure 11. Source – Research Gate

● The Mahanadi (literally meaning **big river**) is an important river of the Peninsular India.

● **Source:** It has its source in the northern foothills of **Dandakaranya near Sihawa in Raipur District** of Chhattisgarh at an elevation of **442 m.**

● **Drainage basin**

○ The **upper part of its drainage basin** lies in the **saucer-shaped basin** called the **'Chhattisgarh Plain'.**

○ **53 %** of the drainage basin of this river lies in **Madhya Pradesh and Chhattisgarh**, while **47 per cent lies in Odisha**.

○ The river is **bounded** in the north by **Central India hills**, in the south and east by the **Eastern Ghats** and in the west by **Maikal hill range**.

● **Course of river**

○ From its source, the river takes a north easterly course.

○ Beyond **Seorinarayan** it flows **eastwards** and after entering **Odisha**, it turns southwards below the **Hirakud Dam**.

○ Further below it turns **eastwards near Sonepur**.

○ On reaching the **Eastern Ghats**, the river flows through a narrow Gorge for 23 km near **Tikkarpara Range** and finally emerges in a **delta at Naraj** 11 km west of **Cuttack**.

○ **Falls into:** The Mahanadi finally empties itself in the **Bay of Bengal** after flowing for a distance of **857 km.**

● **Tributaries:** This basin is surrounded by hills on the north, west and south as a result of which a large number of tributaries join the main river from these sides.

○ **Left bank tributaries:** Ib (251 km), the Mand (241 km), the Hasdo (333 km) and the Sheonath (383 km)

○ **Right bank tributaries:** Ong (204 km), the Jonk (196 km), and the Tel (295 km)

● **Delta:** The delta of Mahanadi spreads over an area of **9,500 sq. km** and is over **150 km broad**.

● **Mahanadi Water Dispute**

○ **Parties involved:** The dispute is between Odisha and Chhattisgarh.

○ **Legal action and Tribunal formation:** In November 2016, Odisha moved the Supreme Court seeking formation of a tribunal.

○ The Government of India constituted the **Mahanadi Water Disputes Tribunal in 2018** under the **Inter-State Water Disputes Act**.

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Inter-State River Water Disputes Resolution in India
- **Constitutional and legal framework**
  - **Article 262 of the Constitution:** It empowers Parliament to legislate for the adjudication of disputes relating to waters of inter-state rivers or river valleys.
    - It also allows Parliament to bar the jurisdiction of the Supreme Court and other courts over such disputes.
  - **Entry 56 of the Union List:** Regulation and development of inter-State rivers and river valleys.
  - **Inter-State River Water Disputes (ISRWD) Act, 1956:** It serves as the chief statutory mechanism for resolving such disputes.

Note: For more on the topic, please click **here.**

Kopili River

News: In a significant move towards reviving river-based trade and promoting sustainable logistics in Assam, National Waterway-57 (River Kopili) has been made operational.

About the Kopili River
- Kopili River is a **major tributary of the Brahmaputra River**, joining it on the left bank.
- **Origin:** The Kopili River **originates on the southwestern slopes of Shillong Peak in Meghalaya.**
- It is an inter-state river that flows through both Meghalaya and Assam. It finally joins the Brahmaputra at a place known as Kopilimukh.
- It is the **largest south bank tributary of the Brahmaputra** in Assam.
- It is **surrounded by the Jayanti Hills on the west and the South Cachar and Mikir Hills** on the east.
- **Tributaries:** In its upper part, the river gets water from smaller rivers like Kharkor, Myntriang, Dinar, Longsom, Amring, Umrong, Longku, and Langkri.
  - In the lower areas of Assam, it is joined by other rivers such as Diyung, Jamuna, Umkhen-Borapani, Killing, Umtrew (also called Digaru), and Kolong.

District Flood Severity Index (DFSI)

News: The District Flood Severity Index (DFSI) has been developed by researchers from IIT Delhi and IIT Gandhinagar.

About District Flood Severity Index (DFSI)
- It is to provide a c**omprehensive, data-driven tool to assess the impact of floods at the district level across India.**
- DFSI helps by **measuring both the size of floods and their impact on people's lives**.
- DFSI utilises **annual flood data from the Indian Meteorological Department (IMD)**, collected since 1967, which primarily covers large-scale riverine floods.
- **Key Parameters Used**:
  - Mean duration (in days) of flood events
  - Percentage of district area historically flooded
  - Total deaths caused by floods

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○ Number of people injured
○ District population

● **Impact-Based Approach**: DFSI focuses on the human impact displacement, injuries, and deaths, providing a more holistic view of flood severity.

● **Significance**: DFSI can guide disaster management planning, prioritize resource allocation, and encourage better data collection at finer spatial scales.

Key Findings of the District Flood Severity Index (DFSI)

● **Patna ranks highest** on the DFSI due to its high population density, significant flood-affected areas, and human impact, despite fewer flood events.

● **Thiruvananthapuram** recorded the **most flood events** (231+), but doesn't appear in the top 30 on DFSI, showing that frequency alone doesn't determine severity.

● **Assam districts** like **Dhemaji, Kamrup, and Nagaon** feature prominently due to frequent and impactful flooding.

● **Urban flooding**, often caused by poor planning, differs from **riverine flooding** in rural areas, requiring tailored responses.

Flash Floods and Cloudbursts

News: A cloudburst led to flash floods in the high altitude villages of Uttarkashi, killing four people, leaving at least 60 people missing.

About Flash Floods and Cloudbursts

Figure 12. Source – Livemint

● A flash flood occurs when an **overwhelming quantity of water rushes into an area over a very short time** – often within minutes or hours of intense rainfall.

● In some cases, they are **triggered by** sudden **dam breaches or obstructions in rivers** giving way.

● **Features**

○ Unlike **regular floods** that rise gradually, flash floods strike **swiftly and with force**.

○ Water **levels can rise in under 30 minutes**, catching people **off guard** and leaving little time to evacuate.

● **Common causes of flash floods include:**

○ Intense rainfall over a short duration
○ Steep slopes that rapidly channel water downhill
○ Urban drainage systems that prevent water absorption
○ Dry or hardened ground, especially after drought or wildfires
○ Sudden release of blocked water or dam breaches

● **Past examples**

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- o **India – 2013, Uttarakhand** disaster where flash floods, triggered by melting glaciers and torrential rain, left thousands dead or missing.
- o **Spain – 2018,** a flash flood in Majorca, Spain, turned streets into rivers within an hour, killing more than a dozen people.
- o **Germany – 2021,** floods in Germany washed away entire villages after days of relentless rain overwhelmed rivers and reservoirs.

About Cloudbursts

- A cloudburst refers to an **extreme amount of rain falling in a very short duration** over a **limited geographical area**, typically less than 20-25 kilometres.
- The India Meteorological Department (**IMD**) defines a cloudburst as **rainfall exceeding 100 mm per hour over a small region.**
- Cloudbursts often **occur in mountainous regions** like Himachal Pradesh, Uttarakhand, or Jammu and Kashmir.
- **Reason:** It is due to orographic lift i.e. when moist air rises rapidly due to terrain and cools quickly, releasing massive rainfall.

Relation between Flash floods and Cloudbursts

- **Cloudbursts** can **trigger flash floods**, especially in hilly terrain, but they are **not the same**.
- A **cloudburst** refers to the **rainfall event**, while a **flash flood** refers to the **result** – the **sudden overflow of water.**
- One can occur **without** the other.

Sarnath – Ancient Buddhist Site

News: India has submitted this year a dossier titled 'Ancient Buddhist Site, Sarnath' to the UNESCO World Heritage Centre for the 2025-26 nomination cycle.

About Sarnath – Ancient Buddhist Site

Figure 13. Source – ASI

● **Location:** It is a sacred city located in **north-east of Varanasi near the confluence of the Ganges and the Varuna rivers** in Uttar Pradesh, India.

● **Historical/Religious significance**

o It is **one of the four most important Buddhist pilgrimages** in the world for being the site where **Gautama Buddha taught Dharma** for the first time.

o The **other three** most important pilgrimages are **Lumbini** (the birthplace of Gautama Buddha), **Bodh Gaya** (the location of Lord Buddha's enlightenment), and **Kushinagar** (the location of Buddha's parinirvana).

- o It is also said that Lord **Buddha's Dhammacakkappavattana Sutta was written** in Sarnath.
- **Architectural Marvels of Sarnath**

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- **The Dhamekha Stupa:** A conspicuous structure believed to be the **dwelling place of Pañcavaggiya monks** after leaving Lord Buddha.
  - It was constructed by **Emperor Ashoka**.
  - It is considered the **sacred ground** where the voice of **Buddhism first resonated**.
- **The Chaukhandi Stupa:** Presently undergoing reconstruction, this stupa marks the site where **Buddha met his first disciples**.
- **The Ashoka Pillar (Lion Capital of Ashoka):** Despite facing fragmentation during Turk invasions, this pillar is an enduring imperial patronage symbol.
  - Its **emblem** also graces the **Indian flag**.
- **Monastery around Dhamekha Stupa:** Adding to the spiritual ambiance, the monastery around the Dhamekha Stupa offers a glimpse into the **communal life of the monks**.
- **Mulagandhakuti Vihara:** This modern temple stands where **Lord Buddha** is believed to have **spent his first rainy season in meditation**.
- **Sarnath Archaeological Museum:** Housing a vast **collection of artifacts**, it provides a visual narrative of **Sarnath's historical and cultural evolution**.

Ayurveda Aahara

News: The Food Safety and Standards Authority of India (FSSAI), in consultation with the Ministry of Ayush, have released a definitive list of Ayurvedic food preparations under the category of "Ayurveda Aahara."

About Ayurveda Aahara

Letters "आ" and "A" Combined in such a way that they appear to be a single form

Symbolic 5 Leaves represents 5 Elements viz Ether (Akash), Air (Vayu), Fire (Agni), Water (Jal/Apas) and Earth (Prithvi)

आयुर्वेद आहार
Ayurveda Aahara

Color green or colore tones of the Logo representing Ayurveda Aahara is Natural, Biotic, Wholesome, Herbal & Organic

To Help Consumer to Identify the Product as Ayurveda Aahara

Source – PIB

- Ayurveda Aahara refers to **food products** developed in line with the holistic **dietary principles of Ayurveda,** one of the world's **oldest systems of health and wellness**.
- **Need:** With rising **public interest in preventive health and sustainable living,** Ayurveda Aahara is increasingly recognised as a trusted nutritional choice that **harmonises** tradition with modern dietary habits.
- **Released by:** Food Safety and Standards Authority of India (**FSSAI**), in consultation with the **Ministry of Ayush**
- **Aim:** This initiative aims to **assist Food Business Operators (FBOs)** by providing a clear and credible reference for the manufacture of Ayurveda Aahara products.
- **Significance**
  - It brings India's **time-honoured food wisdom into the mainstream,** following the introduction of the **Food Safety and Standards (Ayurveda Aahara) Regulations in 2022.**
    - These regulations recognise foods based on recipes, ingredients, and processes from authoritative Ayurvedic texts.

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- The definitive list of Ayurveda Aahara products marks a pivotal step in ali**gning India's traditional knowledge systems with modern regulatory frameworks.**
- **Authenticity:** The list is issued under **Note (1) of Schedule B of the regulations**, drawing directly from **classical Ayurvedic texts listed in Schedule A**, ensuring the authenticity and traditional basis of these food formulations.
  - The new list brings **unprecedented clarity and confidence to consumers and businesses**

Asian Giant Tortoise

News: The critically endangered Asian Giant Tortoise has been successfully reintroduced into the Zeliang Community Reserve located in Nagaland's Peren district.

About Asian Giant Tortoise

Figure 14. Source- Asian Survival Alliance

- It is the **largest tortoise species in mainland Asia** and is considered one of the **oldest tortoise species** in the world.
- It is now only found in a few regions of **India, Bangladesh, Myanmar, and Thailand**.
- It is **native to Southeast Asia.**
- **Habitat:** Tropical and subtropical mountainous evergreen forests
- In the wild, these tortoises can weigh up to **25 kilograms**, and individuals in captivity may grow even larger.
- Asian giant tortoises inhabit **forested regions**, where they play a crucial role in maintaining ecological balance.
- As a **keystone species**, they are vital for forest ecosystems. They contribute to seed dispersal, help aerate and enrich the soil by digging, and manage vegetation by grazing on plants.
- This species is unique among tortoises for its **above-ground nesting behavior**. Instead of digging holes like other tortoises, the female gathers leaves into a large pile, lays up to **50 eggs** inside it, and then guards the nest by sitting on top.
- She actively **protects the eggs from predators and intruders,** making her one of the few tortoise species to show such maternal care.
- **Threats:** The population of Asian giant tortoises has declined drastically **due to tribal hunting and loss of habitat.**
- Today, only a few individuals remain in the wild, and the species is on the brink of extinction if conservation efforts are not scaled up.
- **Protection status:** It is listed as **Critically Endangered by the IUCN.**

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Sahel Region

News: Russia has strengthened its influence in West Africa's Sahel region by signing a significant nuclear agreement with Niger.

About Sahel Region

- The **Sahel Region** is a **semi-arid belt** located in **western and north-central Africa**.
- It extends approximately **5,000 kilometers** from the **Atlantic Ocean** in the west to the **Red Sea** in the east.
- The Sahel acts as a **transitional zone** between: the **Sahara Desert** to the north and the **humid savannas** of sub-Saharan Africa to the south.
- The Sahel passes through parts of **10 African countries**: **Senegal**, **Mauritania**, **Mali**, **Burkina Faso**, **Niger**, **Nigeria**, **Chad**, **Sudan**, **Eritrea**, and **(sometimes also includes parts of Ethiopia)**.
- The **highest point in the Sahel is Mount Koel in Burkina Faso,** which stands at just 448 meters above sea level.
- **Vegetation:** Semi-arid grasslands, savannah, and thorn shrublands.
- **Climate:** The Sahel has a tropical, semi-arid climate characterized by a hot, dry season and a short rainy season.

WHO Classifies Hepatitis D as Cancer-Causing

News: The World Health Organisation (WHO) recently announced the reclassification of hepatitis D as cancerous, emphasising the urgency for preventing viral hepatitis, which is a growing public health crisis.

About Hepatitis D

Figure 15. Source – BS

- **Hepatitis D** is an **inflammation of the liver** caused by the **hepatitis D virus (HDV),** which requires **hepatitis B virus (HBV) for its replication**.
- Hepatitis D infection **cannot occur** in the **absence of HBV. So, Chronic HDV** occurs only in people living with **HBV**.
- **Chronic HDV infection** is considered the **most severe** form of chronic viral hepatitis due to more **rapid progression towards liver-related death** and **hepatocellular carcinoma**.
- **Carcinogenic:** HDV has recently been **classified as carcinogenic to humans** by the **International Agency for Research on Cancer (IARC) mongraph programme**, just like hepatitis B and C.
- **Vulnerable population:** Populations that is more likely to have HBV and HDV co-infection include **indigenous populations, recipients of haemodialysis and people who inject drugs**.
- **Impact:** HDV affects globally nearly **5% (an estimated 12 million) of people** who have a chronic infection with **HBV**.
- **Transmission**

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- ○ HDV is **blood borne** and transmission may occur **through contact with infected human blood** or other bodily **fluids**.
  - ○ It may also be transmitted through **sexual intercourse,** or **rarely** from a **mother to her child before or around birth (vertical transmission).**
  - ○ HDV can also spread **within families in endemic areas**.
- **Symptoms**
  - ○ Symptoms usually include fever, fatigue, loss of appetite, nausea, vomiting, dark urine, pale-coloured stools, jaundice (yellow eyes) and even fulminant hepatitis.
- **Treatment**
- There is **no separate vaccine** for hepatitis D.
  - ○ The **only way** to stop it is by getting the **hepatitis B vaccine**, which protects against both viruses.
- The **antiviral bulevirtide** has emerged in Europe as an approved therapy offering improved outcomes.

Biochar

News: The CO2 removal technologies such as biochar are expected to play a crucial role as the Indian carbon market set to be launched in 2026.

About Biochar

WHAT IS BIOCHAR?

➤ Fine-grained charcoal high in organic carbon that is resistant to decomposition
➤ Created after heating of biomass in the absence of oxygen
➤ A temperature of 450 degrees Celsius needed to convert stubble biomass to biochar in a few hours to 24 hours' time

HOW IT WILL HELP

➤ Farmers can avoid burning stubble as they can convert stubble to biochar using a kutcha reactor
➤ When added to the soil, increases holding capacity of water from about 11 wt% (weight percentage) to 22 wt%
➤ Acts as a fertiliser as

it can increase microbial activity and helps retention of nutrients in the soil
➤ Takes over 800 years to biodegrade, so can isolate carbon and counteract global warming
➤ When converted into cartridge or fine powder, it can act as a water purifier

Figure 16. Source – TH

Biochar is a type of **charcoal rich in carbon** and is produced from **agricultural residue and organic municipal solid waste** (also called **biomass**).

- **Purpose:** The main purpose for the creation of biochar is for **carbon sequestration**.
- **Formation:** It is made by **burning** the biomass in a controlled process called **pyrolysis**.
  - ○ During pyrolysis, organic materials are **burned** in a container with very **little oxygen**.
  - ○ As the materials burn, they **release little to no contaminating fumes**.
  - ○ During the pyrolysis process, the organic material is **converted into biochar,** a stable form of carbon that **can't easily escape** into the atmosphere.
  - ○ The energy or heat created during pyrolysis can be **captured and used as a form of clean energy**.
- **Physical characteristics:** It is **black, highly porous, lightweight, fine-grained** and has a **large surface area**.
- **Chemical features:** Approximately **70 percent** of its composition is **carbon**.
- The **remaining** percentage consists of **nitrogen, hydrogen and oxygen** among other elements.
- **Applications of biochar as a carbon sink**

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- In Agriculture: Biochar can **hold carbon in the soil** for 100-**1,000 years** due to its strong and stable characteristics, making it an effective long-term carbon sink.
  - Applying biochar can improve **water retention**, particularly in **semi-dry and nutrient-depleted soils.**
  - It can **abate nitrous oxide emissions by 30-50% (**a greenhouse gas with 273-times the warming potential of CO2).
- **Soil retention:** Biochar can also **enhance soil organic carbon**, helping restore degraded soils.
  - This process is modeled after a **2,000-year-old practice in the Amazonian basin**, where indigenous people created areas of rich, fertile soils called **terra preta (meaning "dark earth").**
- **In carbon capture applications**: The modified biochar can **adsorb CO2 from industrial exhaust gases.**
- **In the construction sector:** It can be explored as a low-carbon alternative to **building materials.**
  - Adding 2-5% of biochar to **concrete** can **improve mechanical strength**, increase **heat resistance** by 20%, and capture 115 kg of CO2 per cubic meter, making building materials a stable carbon sink.
- **In wastewater treatment**: It offers a **low-cost and effective** option to reduce pollution.
  - India generates more than 70 billion lt. of wastewater every day, of which 72% is left untreated. A kilogram of biochar, along with other substances, can treat 200-500 lt. of wastewater, implying a biochar demand potential of 2.5-6.3 million tones.

World Food Programme (WFP)

News: India launched a new collaborative initiative with the support of the UN World Food Programme to strengthen Rice Fortification and Supply Chain Management in Nepal.

About World Food Programme (WFP)

- It is an **international organization** within the **United Nations (UN)** that provides **food assistance worldwide.**
- **Aim:** It aims to **eradicate hunger and malnutrition.**
- It is the world's **largest humanitarian organization** and the leading provider of **school meals**.
- It provides **passenger services for humanitarian workers** through its management of the **United Nations Humanitarian Air Service (UNHAS).**
- **Established in: 1961** by the United Nations General Assembly (**UNGA**).
- **Headquarters:** It is headquartered in **Rome** and has offices in 87 countries.
- **Objective:** It was established as the lead agency to **respond to food emergencies** and help **combat hunger**

Figure 17.Source – UN WFP

- **Global presence:** It has its presence in **over 120 countries** and territories to carry out its mission.
  - In 2023 it supported over 152 million people.

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- **Funding:** Its operations are entirely funded through the **voluntary contributions** of donor governments, institutions, corporations and individuals.
- **Partnerships:** It works with **governments**, other United Nations **agencies**, non-governmental organizations, private companies and others.
    - It is an **executive member** of the **United Nations Sustainable Development Group**, with a priority to achieve **SDG 2, "zero hunger", by 2030.**
- **Recognition:** It was awarded the **Nobel Peace Prize in 2020** for its efforts to **provide food assistance in areas of conflict** and to prevent the use of food as a weapon of war and conflict.
- **Reports published:**
    - **Global Report on Food Crises**
    - **The State of Food Security and Nutrition in the World** (in collaboration with the FAO, IFAD, UNICEF and WHO)

Leap-1 Mission

News: Dhruva Space is preparing to launch its first commercial satellite mission called LEAP-1.

About Leap-1 Mission
- It is the first **commercial satellite mission** launched by India's space-tech startup, **Dhruva Space**.
- LEAP-1 marks Dhruva Space's transition from tech demonstration to full-scale commercial satellite deployment.
- **Launch Timeline & Vehicle:** Scheduled for **Q3 2025** aboard **SpaceX's Falcon 9** rocket.
- It is based on Dhruva Space's **indigenously developed P-30 satellite platform**.This platform was successfully **space-qualified** during the **LEAP-TD mission** aboard **ISRO's PSLV-C58** in **January 2024**.
- **Payloads: The mission carries two payloads:**
- **Nexus-01:** Developed by **Akula Tech.**
    - It features a sophisticated **Artificial Intelligence (AI) module** designed for **onboard data processing** and **AI/ML model re-training** using live sensor inputs.
    - This AI system supports real-time applications such as **fire detection**, **spectral analysis**, and **dynamic decision-making in space**.
- **Esper Satellites' OTR-2 mission:** Developed by **Esper Satellites**
    - It carries a **cutting-edge hyperspectral imager** that delivers **spectrally rich Earth observation data** via the **EarthTones API**.
    - This data serves multiple domains, including **defence**, **agriculture**, **mining**, **disaster response**, and **environmental monitoring**.

Intermediate-Range Nuclear Forces (INF) Treaty

News: Russia has officially announced that it no longer considers itself bound by the INF Treaty.

About the Intermediate-Range Nuclear Forces (INF) Treaty:
- The **Intermediate-Range Nuclear Forces (INF) Treaty** obligated the **United States and the Soviet Union** to **eliminate** and **permanently renounce** all of their **nuclear and conventional ground-launched ballistic and cruise missiles** with ranges between **500 and 5,500 kilometers**.
- **It was signed in 1987** between the **United States** and the **Soviet Union** (now Russia).

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- **Purpose:**
  - To reduce the nuclear threat by eliminating specific categories of nuclear and conventional missiles.
  - Aimed to halt the **escalating arms race** during the Cold War, particularly in Europe.
- **Key Leaders Involved: Ronald Reagan** (U.S. President) and **Mikhail Gorbachev** (Soviet Leader)
- The **United States withdrew** from the treaty in 2019, citing **Russia's alleged violations**. Following this, **Russia has now officially abandoned** its commitment to the treaty.

Carriage of Goods by Sea Bill, 2025

News: The Parliament passed the Carriage of Goods by Sea Bill, 2025, marking a significant step in the government's ongoing effort to modernise India's maritime legal framework.

About Carriage of Goods by Sea Bill, 2025

Figure 18.Source – PIB

- The Bill replaces the nearly **century-old** colonial period Indian **Carriage of Goods by Sea Act of 1925**, aligning Indian law with **international maritime conventions**.
  - The Act establishes the **responsibilities, liabilities, rights, and immunities in case of goods carried from a port.**
- **Objective:** The main objective of the new law is **to modernise India's maritime shipping regulations** and make them **easier to understand and apply**.
- **Key features:**
  - **Adopts Hague–Visby Rules:** Aligns Indian law with international maritime standards for **bills of lading and cargo liability**.
  - Legal **safeguards** for parties in shipping contracts
  - **Regulatory flexibility** for the government to adapt the law as needed
  - **Replacement of the outdated 1925 law** with language better suited to current trade realities
- **Key central government powers:** The Bill gives the central government two key powers:
  - **Issuing Directions:** The government can issue **guidelines or instructions to help implement** the provisions of the Bill effectively.
  - **Amending Rules:** The government can **update or modify the rules** related to **bills of lading (listed in the schedule of the Bill)** through notifications, without needing to bring a new law to Parliament.

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About Bill of Lading

- This is a **legal receipt issued by a shipping company** to the person sending the goods.
- It lists **what goods are being shipped**, their **quantity** and **condition**, and **where they are going**.
- It also **acts as proof of ownership** of the goods and is essential for international trade.

About Hague–Visby Rules

- The Hague–Visby Rules is a set of **international rules for the international carriage of goods by sea**.
- They are a slightly updated version of the **original Hague Rules** which were drafted in Brussels in **1924**.

Merchant Shipping Bill, 2025

News: The Lok Sabha cleared the 'Merchant Shipping Bill, 2025', aimed at streamlining maritime governance with a modern and internationally compliant approach.

About Merchant Shipping Bill, 2025

Figure 19. Source – DD News

- It is a **progressive, future-ready legislation** that replaces the **outdated Merchant Shipping Act of 1958.**
  - The Merchant Shipping Act, 1958 had become **bulky, fragmented, and outdated with 561 sections**, failing to address contemporary maritime challenges or fully implement India's obligations under several key **International Maritime Organization (IMO) conventions**.
- **Aim:** The Bill is aimed at **streamlining maritime governance** with a modern and internationally compliant approach.

- **Key Provisions**
  - **Mandatory registration:** As per the Bill, all vessels, regardless of propulsion method or tonnage, must be registered, including new provisions for temporary registration of vessels designated for recycling.
    - The existing **Merchant Shipping Act, 1958** stipulates that only a ship that is **wholly owned by an Indian citizen**, company or society can be **registered** under the Indian flag.
  - **Ownership and registration of chartered foreign vessels:** Indian entities can now charter foreign vessels and register them as Indian vessels under specific conditions.
    - The Bill also allows **temporary registration** of vessels for recycling of ships in India to boost the ship recycling business.

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- ○ **Relaxed ownership criteria:** It allows partial ownership by Indian citizens, companies registered in India, cooperative societies, and Overseas Citizens of India (OCIs). This opens the sector to wider domestic and global investment.
- ○ **Welfare of seafarers:** The Bill expands welfare and protection provisions to **all Indian seafarers,** whether on Indian or foreign-flagged vessels.
  - ○ Seafarers gain **better access to social security** and improved **working conditions**.
- ○ **Pollution control & environmental protection:** It fully incorporates the **MARPOL** and **Wreck Removal Conventions**, making it mandatory for all vessels to possess pollution prevention certification, regardless of tonnage.
- ○ **Institutional and regulatory changes:** The **Director-General of Shipping** is redesignated as the **Director-General of Marine Administration**, with expanded powers to regulate maritime education, training, and security.
- ○ **Stricter penalties:** It **increases** fines and penalties for offences like endangering life, concealment of vessel nationality, and environmental violations, to ensure compliance and deterrence.

RBI Tightens Co-lending Norms

News: The Reserve Bank of India (RBI) has issued revised guidelines to strengthen the co-lending framework between banks and non-bank financial companies (NBFCs).

RBI Tightens Co-lending Norms

Figure 20. Source – BS

- ● **Co-lending:** It is a brilliant example of **financial teamwork** where two financial institutions, like a big bank and an NBFC, team up to **give out loans together**.
  - ○ It refers to the **collaborative loan service** where two lending institutions jointly fund loans to borrowers.
  - ○ This partnership **allows both entities to distribute their resources** more efficiently, providing customers with the combined expertise and financial muscle of both lenders.

Revised Guidelines of RBI

- ● The new framework will **supersede the co-lending guidelines issued in 2020**, which were **limited to priority sector lending**.
- ● The revised rules will **come into force from 1 January 2026**, though lenders may **choose** to implement them earlier based on their internal policy.
- ● Under the new **Co-lending Arrangements (CLA) Directions, 2025**, all **regulated entities—** including **commercial banks** (**excluding** small finance banks, regional rural banks, and local area

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banks), **all-India financial institutions, and NBFCs** (including housing finance companies)—must **retain a minimum of 10 per cent of every loan on their books**.

- **Uniform NPA Tagging To Prevent Arbitrage**
  - To **address regulatory gaps**, the RBI has introduced **borrower-level asset classification**.
  - If a loan is classified as a **Special Mention Account (SMA) or Non-performing Asset (NPA)** by **one** lending partner, the **same classification must be adopted by the other**
  - This information must be **shared on a near real-time basis** to avoid regulatory arbitrage.
- **Borrowers' Charges**
  - **Borrowers will now be charged** a **blended interest** rate, calculated as the weighted **average of each partner's internal rate** based on their share of funding.
  - All other charges must be disclosed in the **Key Facts Statement (KFS)** and factored into the **Annual Percentage Rate (APR).**
- **Borrower Protection and Operational Clarity**
  - The new rules mandate **detailed loan agreements** specifying **borrower eligibility criteria, product structure, partner roles, and fee arrangements.**
  - A **single point of contact** must be designated for the borrower throughout the loan lifecycle, and any change must be communicated in advance.
- **Dedicated Escrow Account.**
  - **Disbursements and repayments** are to be routed exclusively through a **dedicated escrow account.**
  - Partner lenders must **reflect their loan share within 15 days of disbursal**; **failure** to do so will result in the **loan remaining on the originating lender's books**, with transfer allowed **only under RBI's Transfer of Loan Exposure guidelines.**
- **Transparency and Timeline**
  - **Lenders** are now required to **publicly disclose co-lending arrangements** on their websites and in their financial statements.
  - These disclosures must **cover loan amounts, sectors served, interest rates, fees, and partner names.**
  - **Credit policies** must be **updated accordingly**, and institutions must devise business continuity plans to safeguard borrowers in case of partnership termination.

Employee Stock Option Plan (ESOP)

News: Mahindra to gift Rs. 500 cr. in company stock to over 14,000 workers as Diwali bonus through Restricted Stock Units (RSUs), a form of employee stock option plan (ESOP).

About Employee Stock Option Plan (ESOP)

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Takeaways

- ESOPs are a powerful tool for wealth creation and employee engagement.
- Employees must understand the vesting conditions, tax implications, and stock price movements before exercising their options.
- Consulting a financial advisor can help in making informed decisions regarding ESOPs.
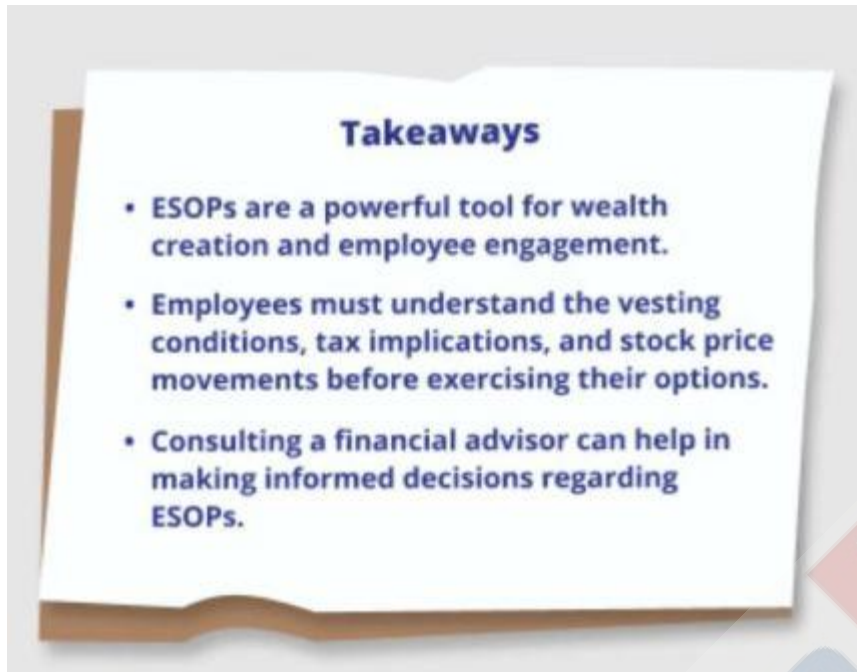
Figure 21. Source – SEBI

- An Employee Stock Option Plan (ESOP) is a **benefit scheme** where companies **offer employees the right to buy shares at a predetermined price after a specific period.**
- It is a way to **reward employees**, align their **interests** with the company's success, and improve **motivation and retention**.
- **Reasons to provide ESOP:** Companies provide ESOPs for several reasons –
  - **Employee Retention:** Employees stay longer to receive their stock options.
  - **Performance Incentive:** Employees are motivated to improve company performance, leading to higher stock value
  - **Ownership Culture:** Employees feel like stakeholders, fostering loyalty and commitment.
  - **Alternative to Cash Compensation:** Start-ups and companies with limited cash can use ESOPs as a reward mechanism
- **Working procedure**
  - **Grant of Options:** The company gives employees the **option** (not obligation) to buy shares at a fixed price
  - **Vesting Period:** Employees **must stay with the company** for a specified time before they can exercise their options.
  - **Exercise Period:** After the vesting period, employees can **purchase shares at the predetermined price.**
  - **Selling Shares:** Once exercised, employees can **sell shares in the open market**, benefiting from price appreciation.
- **Key Terms in ESOPs**
  - **Stock Options:** The right to buy shares in the **future at a fixed price**.
  - **Vesting Period:** The time an employee must **wait before exercising options** (minimum 1 year as per SEBI regulations).
  - **Exercise Price (Strike Price):** The price at which **employees can buy shares.**
  - **Exercise Period:** The window during which em**ployees can purchase** shares after vesting.
  - **Expiration Date:** The **deadline** to exercise stock options before they become invalid.
- **ESOPs in India are regulated by**
  - **SEBI** (Share Based Employee Benefits and Sweat Equity) Regulations, 2021 for listed companies.
  - **Companies Act, 2013** for unlisted companies.

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- ○ **Tax rules under the Income Tax Act, 1961,** where employees are taxed at the time of exercising options and again when selling shares.
- **Process for Employees**
  - ○ **Option Grant:** The company offers stock options to eligible employees.
  - ○ **Vesting Period Completion:** Employees meet the service duration requirement.
  - ○ **Exercise of Options:** Employees purchase shares at the pre-decided price.
  - ○ **Selling Shares:** Shares can be sold in the open market, subject to tax and lock-in rules.
- **Benefits for Employees**
  - ○ Opportunity to own company shares at a lower price.
  - ○ Potential for significant wealth creation if stock price increases.
  - ○ Aligns employee growth with company success.
- **Risks for Employees**
  - ○ If stock price falls, options may lose value.
  - ○ Employees need to pay upfront to buy shares.
  - ○ Taxes apply at the time of exercise and sale.

Mount Kilimanjaro

News: Arunachal mountaineer Kabak Yano successfully summits Mount Kilimanjaro.

About Mount Kilimanjaro

- **Location**– northeastern Tanzania.
- **Type**– Stratovolcano – composed of layers of ash, lava, and rock.
- Its highest point is the Kibo summit, which rises to 19,340 feet (5,895 metres)**, making it the tallest mountain in Africa.**
- Kilimanjaro has three main volcanic peaks: **Kibo, Mawensi, and Shira.**
- The park was designated a **UNESCO World Heritage Site in 1987.**
- It has lost more than 90% of its ice cap since 1900, becoming a prominent symbol of climate change.

rechi

News: The second edition of SheLeads workshop was recently inaugurated.

About SheLeads Programme

- **It is a flagship Initiative** organised by the **UN Women India Country Office** to advance gender equality in public and political leadership.
- **Objective** – Equip women with **skills, networks, and capacity** to lead effectively in governance and development.
- **Aim:** Aimed at promoting gender equality in public and political leadership by empowering women leaders to contest the Lok Sabha and State Assembly elections.

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About UN Women

- **About UN Women** – It is a United Nations (UN) dedicated organization focused on promoting **gender equality** and **women's empowerment**.
- **Establishment** – Created in **July 2010** by the UN General Assembly.
- **Key Roles**:
  - **Policy Support** – Assist inter-governmental bodies like the **Commission on the Status of Women** in developing policies, global standards, and norms.
  - **Implementation Assistance** – Help member states implement these standards by providing technical and financial support on request.
  - **Partnership Building** – Forge strong collaborations with **civil society** to advance gender equality and women's rights.

Starfish

News: Scientists have discovered that a bacterium caused the 2013 starfish die-off, which killed about 5 billion sea stars by causing sea star wasting disease, where their limbs fall off and bodies break down.

About Starfish

Source – National Geographic

- Starfish are marine animals belonging to the echinoderm group, commonly called "sea stars" due to their distinctive star-shaped body.
- **Feeding:** They are primarily predators, preying on invertebrates like mussels and clams.
- **Regeneration:** Many species possess the ability to regenerate lost or damaged arms.
- **Circulatory System:** They lack blood; instead, seawater circulates through their water vascular system to transport nutrients and oxygen.
- **Habitat** – They are **benthic in nature.** They are **found in all marine environments, from intertidal zones to depths of 6,000 m.**

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MERITE Scheme

News: The Union Cabinet has approved the proposal for implementation of the 'Multidisciplinary Education and Research Improvement in Technical Education' (MERITE) Scheme in 275 technical institutions comprising 175 engineering institutions and 100 polytechnics.

About MERITE Scheme
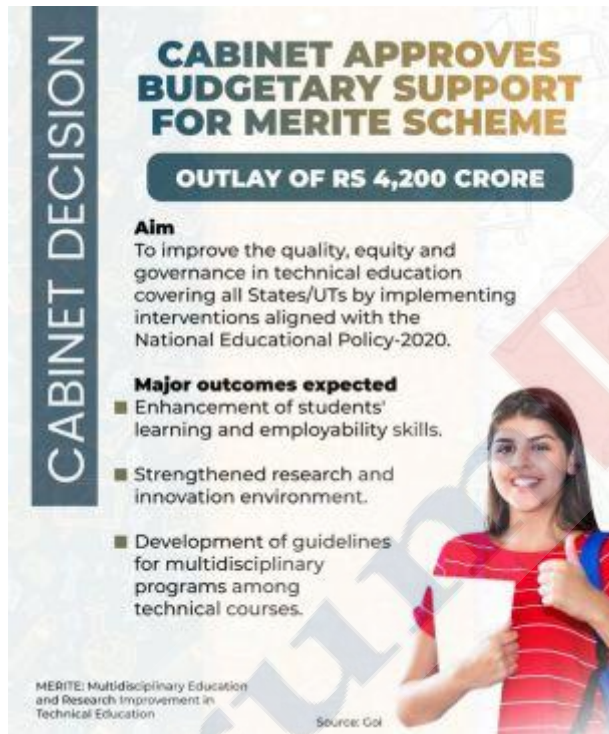
Source – PIB

- It is a key initiative aimed at **enhancing the quality, equity and governance of the participating technical institutions.**
- **Full Name:** Multidisciplinary Education and Research improvement in Technical Education (MERITE) Scheme
- **Objective:** The objective of the scheme is to **improve the quality, equity and governance** in **technical education** covering all States/UTs by implementing interventions aligned with the National Educational Policy-2020 (NEP-2020).
- **Collaboration:** The scheme has been **formulated** in collaboration with the **World Bank**.
- **Nodal Ministry:** Ministry of Education
- **Type:** Central Sector Scheme
- **Budget and timeline:** The scheme will has a total **financial implication of Rs.4200** crore for a period from **2025-26 to 2029-30.**
  - Out of Rs.4200 crore, there will be an **external assistance of Rs.2100 crore from World Bank as loan.**
- **Beneficiaries**
  - It will be implemented in in 275 technical institutions comprising 175 engineering institutions and 100 polytechnics.
  - An estimated **275 Government/ Government-aided technical institutions** are expected to be selected and supported under the scheme.

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- o This will include selected National Institutes of Technology (NITs), State Engineering Institutions, Polytechnics and Affiliating Technical Universities (ATUs).
- o The State/ UT departments handling technical education sector will also be supported through MERITE scheme.
- o About 7.5 Lakh Students will be benefitted from the Scheme.
- **Benefits**
  - o Digitalization strategies in participating States/ UTs,
  - o Development of guidelines for multidisciplinary programs among technical courses,
  - o Increase in learning and employability skills of students,
  - o Increase in transition rate of students across student groups,
  - o Strengthened research and innovation environment,
  - o Better quality assurance and governance mechanisms resulting in long term benefits,
  - o Increase in accreditation and better Technical Education Institution – level Quality Assurance,
  - o Relevant, labour market-aligned curriculums and blended courses developed and rolled out and
  - o Development of future academic administrators especially women faculty.

RBI Grants AU Small Finance Bank Universal License, First in a Decade

News: The Reserve Bank of India has granted AU Small Finance Bank a universal banking license, the first in a decade, potentially paving the way for other small finance banks to transition.

RBI Grants AU Small Finance Bank Universal License, First in a Decade

Source – CNBC TV

- The license was given under the **RBI's 'on tap' licensing guidelines** and the **framework for the voluntary conversion of small finance banks to universal banks.**
- **Eligibility criteria:**
  - o The **listed** small finance banks with **minimum net worth of Rs 1,000 crore at the end of the previous quarter** are eligible to apply for a transition.
  - o They also need to have a **minimum 15% capital to risk-weighted assets ratio** and **net profits in the preceding two financial years.**

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- - **NPAs:** Their **gross non-performing assets** has to be **less than or equal to 3%** for **two preceding financial years** while the **net non-performing assets** has to be **less than or equal to 1%** for two preceding financial years.
  - They should also meet the **prescribed CRAR requirements** for SFBs.
- **Importance:** The universal bank status will allow AU Bank to offer a wide range of financial services and products under one roof without many restrictions unlike a small finance bank.
- **Past examples:** The last time RBI granted universal banking license to **Bandhan Bank and IDFC Bank (now IDFC First Bank) was in April 2014.**

About Small Finance Banks

- Small Finance Banks are **specialized financial institutions** set up to foster **financial inclusion** by delivering **basic banking services** to underserved and unbanked segments of the population.
- **Genesis:** Announced in the Union **Budget of 2014-15**
- **Key Features of SFBs:**
  - **Regulated by RBI:** Function under the **Banking Regulation Act, 1949,** and other relevant laws.
  - **Basic Banking Services:** Offer savings accounts, current accounts, fixed deposits (FDs), recurring deposits (RDs), and loans.
  - **Scheduled Bank Status:** Granted upon meeting eligibility criteria under the RBI Act, 1934.
  - **Priority Sector Focus:** Required to allocate at least 60% of ANBC to PSL sectors like agriculture and MSMEs.
  - **Capital Requirement:** Must have a minimum paid-up capital of ₹200 crore.
  - **No Subsidiaries:** Not allowed to set up subsidiaries for non-banking financial services

Key Facts about Nauru

News: The remote Pacific nation Nauru is selling passports to fund climate action has approved but received just six applicants since early this year.

Key Facts about Nauru

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Source – Britannica

- **Location:** It is a tiny island located in north-east of Australia, **42 km south of the equator**.
  - It lies within the **Micronesia sub-region of Oceania**, with its **nearest neighbour** being **Banaba (part of Kiribati)** about 300 km to the east.
- It was **formerly** known as **Pleasant Island**.
- **Reef system:** A **coral reef** surrounds the entire island which is **dotted with pinnacles**. Hence, there **no specific port located** at the coast of the country.
- **Geology:** It is a **phosphate-rock island** with rich deposits near the surface.
- **Highest point:** The **Command Ridge** is the highest point at **71 m** above sea level.
- **Climate**: Its climate is **hot and very humid year-round** because of its **proximity** to the equator and the ocean.
- **Smallest island country:** It is the **third-smallest country** in the world, after Vatican City and Monaco, with an area of **only 21 sq. km**.
  - So, it is the **smallest island nation** in the world.
- **International co-operation:** It is a member of the **United Nations**, the **Commonwealth** of Nations, and the **Organisation of African, Caribbean and Pacific States**.
- **Governance system:** It is a **republic** with a **parliamentary system** of government.
  - The **president** is both **head of state and head of government** and is dependent on **parliamentary confidence** to remain president.
- **Water source:** The **Buada Lagoon**, located inland, is a **rare freshwater resource** but is an **endorheic basin** (not connected to the sea).

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Maratha Empire

News: A map showing the extent of the Maratha Empire in 1759 in the new NCERT Class 8 social science textbook has run into a controversy. **Maratha Empire history and rulers**

About Maratha Empire

Source – NCERT

- The Marathas emerged as a formidable power in the **17th century** in the Deccan region (modern-day Maharashtra).
- **Founder: Chhatrapati Shivaji Maharaj (1630–1680),** who established **Hindavi Swarajya** by challenging Mughal and Bijapur rule.
- **Geographical extent: Initially** centered in **Maharashtra**, the Maratha influence expanded to parts of **Karnataka, Madhya Pradesh, and beyond**.
- **Coronation and title:** Shivaji assumed the title **Chhatrapati in 1674 at Raigad Fort,** marking the **formal establishment** of the Maratha Empire.

Marathas after Chhatrapati Shivaji Maharaj

- **Shivaji had two sons – Sambhaji and Rajaram**.

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- **Sambhaji's reign**
  - After Shivaji's death, **Sambhaji became the Chhatrapati**.
  - The Marathas were then the **only obstacle to total Mughal control** of the Deccan.
  - **Aurangzeb invaded** the Deccan and **conquered** the Bijapur (or Adil Shahi) and Golconda (or Qutb Shahi) Sultanates.
  - He then **captured Sambhaji** and, after torturing him brutally, **executed**
  - After this, he **captured Raigad**, the Maratha capital.
- **Rajaram's reign**
  - After Sambhaji, **Rajaram became the Chhatrapati** and fled to Gingee (in present-day Tamil Nadu).
  - Aurangzeb was **unable** to leave the Deccan and **died** without having succeeded in subduing the Marathas.
- **Decentralized empire**
  - The centralised state from Shivaji's time gave way to a more **decentralised structure**, still nominally **centred around the Chhatrapati**, but with the **chiefs wielding more power**.
  - In particular, the **Peshwa** (a Persian term for '**prime minister**') wielded great influence, even over the Chhatrapati himself.
  - In particular, **Peshwa Bajirao I** and his son **Nanasaheb Peshwa were** instrumental in the pan-Indian expansion of the Marathas.

Important Battles of the Maratha Dynasty

Battles	Descriptions
Battle of Pratapgarh (1659)	Fought between Marathas and Adilshahi forces
Battle of Kolhapur (1659)	Fought between the Maratha king Shivaji and the Adilshahi forces
Battle of Surat (1664)	Fought between Maratha ruler Chhatrapati Shivaji Maharaj and Inayat Khan, a Mughal captain.
Battle of Purandar (1665)	Fought between the Maratha and the Mughal Empire
Battle of Salher (1672)	Fought between the Maratha Empire and the Mughal Empire
Battle of Sangamner (1679)	Fought between the Mughal Empire and Maratha Empire. This was the last battle fought by Shivaji.
First Anglo-Maratha War (1775-82)	The war ended with the Treaty of Salbai 1782.

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Second Anglo-Maratha War (1803-05)	Treaty of Bassein (1802) – Signed between Peshwa Baji Rao II and the British East India Company. Treaty of Deogaon (1803) – Signed between Raghuji Bhonsle II of Nagpur and Sir Arthur Wellesley of the British East India Company
Third Anglo-Maratha War (1817-19)	Some important treaties were signed. These were: Treaty of Poona (with the Peshwa), Treaty of Gwalior (with Sindhia), Treaty of Mandasor (with Holkar).

Civilian administration

- Shivaji instituted a relatively **centralised administration** for his kingdom.
- He **abolished the hereditary posts** (generally practiced under the Sultans or the Mughals) and land assignments and **paid a salary** to every government official out of the state treasury.
- Many officials were periodically **transferred** as well, ensuring that they would not have enough power to dictate terms to the king.
- Shivaji also gave **pensions to widows** of soldiers who died in battles, even offering **military posts to their sons,** thus demonstrating his care for the soldiers and their families.
- **Council of ministers:** To assist the king, there was a council of state ministers known as **ashtaptadhana**:
    - Peshwa (Prime Minister): He was the head of both civil and military affairs.
    - Mazumdar (auditor): He looked into the income and expenditure of the state.
    - Wakins: He was the in-charge of king's private affairs.
    - Dabir : Foreign secretary
    - Sumis (superintendent): He used to take care of all the official correspondences.
    - Pandit Rao: Ecclesiastical head
    - Senapati: Commander in chief
    - Nyayadhish: Chief Justice
- **Tex system:** The Marathas often levied taxes called **chauth (25 per cent)** and **sardeshmukhi (an additional 10 per cent to chauth)** from provinces that were **not directly under them**, including places in the **Deccan and north India**.
- In return, the **Marathas protected** those provinces and did not intervene in their internal administration.
- The **Mughals also approved of this arrangement** through various treaties, and over time, some of these provinces became a part of the Maratha Empire.

Judicial system

- The Marathas had an **efficient judicial system**, remarkable for its moderation in using **capital punishment (the death penalty).**
- The **panchayat** was a **local gathering of officials and prominent men**, and the **main body that delivered justice**.
- An **appeal** could be made to a **Maratha chief** in case of an unsatisfactory verdict.
- Additionally, in various prominent **towns** such as **Pune, Indore, etc**., the **kotwāl or the police** was also deployed to ensure law and order within the city.

Military administration

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- The Maratha armed forces were **divided into three parts** – **infantry, cavalry and navy.**
- **Cavalry:** The cavalry was made up of **two types of soldiers** –
    - **the bārgīrs**, whose horses and equipment were paid for by the state,
    - the **shiledārs**, whose horses and equipment were paid for by the soldiers themselves.
- In the 18th century, the Marathas also noticed the superiority of **European style disciplined troops and artillery**, and they tried to raise and recruit such troops.
    - In particular, **Mahadji Shinde** had a large European-style army.
- **Swords and lances** were the **preferred weapons** of the Marathas. However, they also used **guns** in sizable numbers.
- **Rockets** were used in military campaigns from the **days of Shivaji himself**, and by **1770, metal tube rockets** were also being used.
- The **forts** were initially the **mainstay of Maratha power**.
    - **Shivaji** controlled and built a **considerable number of forts**, as they were essential to strategically control important routes and shelter the army when engaging in guerrilla warfare.

Trade networks

- **Shivaji** encouraged **trade** and actively participated in maritime **foreign trade** himself.
- He and his officials had their **own ships**, which they regularly sent to ports as far away as **Mocha in Yemen, Muscat in Oman, and Malacca in Malaysia**.
- Some of these ships carried cargo like **gold, textiles**, etc.
- **Roads** were constructed and maintained.
- In places such as **Odisha** in the 18th century, a network of **ferries** was maintained for riverine transport.
- **Bridges** were built over rivers and small streams.

The Maratha legacy

- The Maratha rule **challenged Mughal dominance** and established **the largest Indian empire before the British took over** the Subcontinent, controlling much of central and northern India.
- They set up a **new way of governing** with an efficient administration, and also revived the local Hindu **traditions without religious discrimination**.
- Their brave fight against oppressive rule and foreign power was driven by the fiery ideal of **Swarājya**.
- Later it inspired many Indians to believe they could govern themselves, planting the early seeds for **India's freedom movement**.

FAO Food Price Index (FFPI)

News: According to Food and Agriculture Organization's (FAO) Food Price Index, Global food commodity prices rose for the second month in a row in July 2025.

About FAO Food Price Index (FFPI)

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Source – FAO

- It is a **food price index** by the **Food and Agriculture Organization (FAO)** of the United Nations.
- It measures **international price movements** of a basket of food commodities over time, in **nominal and real terms**.
- **Commodity coverage**
  - The Index encompasses **24 basic food commodities** that are globally traded.
  - These commodities are **grouped into five major groups – cereals, dairy products, vegetable oils, sugar and meat,** for which a **respective price index is calculated**.
- **Aggregation:** The five commodity group price indices are **combined** by weighting them with the **average export shares** of each of the groups for **2014-2016.**
- These **trade weights** are sourced from the **FAOSTAT database**.
- **Prices:** In total **95 commodity quotations** (export, spot, prices), all **expressed in terms of US Dollars,** are included in the FPI.
- **Base period**: 2014-2016
- **Index form: Laspeyres**
- **Frequency and span: Monthly from January 1990** and **annual from 1961**
- **Deflator:** World Bank's Manufactures Unit Value Index (MUV).

About Food and Agriculture Organization's (FAO)
- The Food and Agriculture Organization (FAO) is a **specialized agency of the United Nations** that leads **international efforts to defeat hunger.**
- **Foundation:** It was founded on **16 October 1945.**
- **Goal:** Its goal is to achieve **food security for all** and make sure that people have regular access to enough high-quality food to lead active, healthy lives.
- **Members: 195 members** – 194 countries and the European Union, FAO works in over 130 countries worldwide.
  - **India** is also a member.
- **Headquarters:** Its headquarters is in **Rome, Italy.**

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S.H.I.N.E. initiative

News: The Indian Council of Medical Research (ICMR), in collaboration with the Department of Health Research (DHR), organized the nationwide **ICMR-SHINE (Science & Health Innovation for the Nextgen Explorers)** outreach programme.

About S.H.I.N.E. (Science, Health and Innovation for Nextgen Explorers) initiative

- **Organizers**: Conducted by the Indian Council of Medical Research (ICMR) and the Department of Health Research (DHR).
- **Purpose**: Aligns with Prime Minister Narendra Modi's call for students to *"spend one day as a scientist."*
- **Focus Areas**: Introduction to biomedical and health research; showcasing ICMR's contributions to public health.
- **Goals**:
    - Ignite scientific curiosity in young learners.
    - Foster innovation.
    - Encourage careers in science and public health.
    - Support India's vision for **"Viksit Bharat" by 2047**
- **Participation:**
    - 13,150 students from grades 9–12.
    - Represented over 300 schools.
    - Covered 39 districts in 16 states and union territories.
- **Activities Included**:
    - Guided laboratory tours.
    - Research exhibitions and poster walks.
    - Video presentations and live demonstrations.
    - Interaction with scientists about their work and career paths.

mRNA Vaccine

News: Recently, the U.S. Department of Health and Human Services announced that Health Secretary Robert F. Kennedy Jr. had canceled $500 million worth of grants and contracts for mRNA vaccine development.

About mRNA Vaccine

- An mRNA vaccine uses messenger RNA to provide instructions for the body's cells to produce a harmless fragment of a pathogen.
- This approach does not introduce the actual pathogen but instead trains the immune system to recognize and fight it.

How mRNA Vaccines Work

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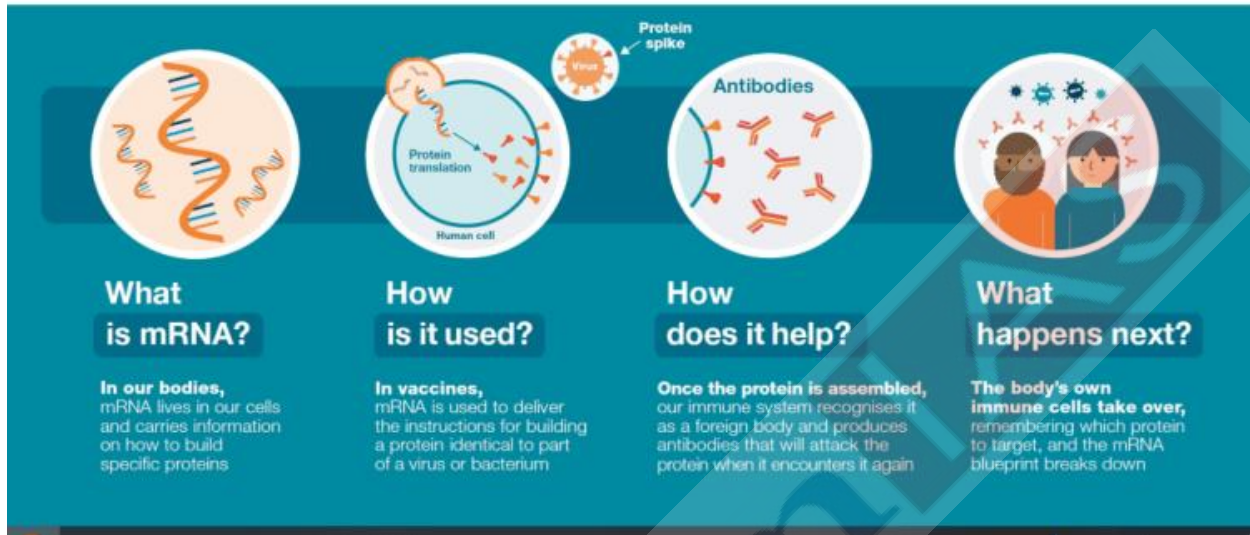
Source- UK Health Security Agency

- The mRNA is enclosed in lipid nanoparticles, which protect it and help it enter human cells.
- The vaccine is injected into a muscle, where the lipid nanoparticles fuse with cells and release the mRNA.
- Inside the cell's cytoplasm, ribosomes read the mRNA instructions and produce the specific pathogen fragment, such as the spike protein in COVID-19.
- The produced protein fragment is displayed on the cell's surface for the immune system to detect.
- The immune system recognizes the fragment as foreign and produces antibodies and memory cells to provide long-term protection.
- The mRNA is temporary and breaks down naturally after it has delivered its instructions, without affecting the body's DNA.

India's First Animal Stem Cell Biobank

News: Union Minister of State for Science & Technology has inaugurated the nation's first 'Animal Stem Cell Biobank'.

About India's First Animal Stem Cell Biobank

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Source – AIR News

- It is a **state-of-the-art facility** that will **store and preserve** high-quality **stem cells from various animal species.**
- **Setup at:** The facility is set-up at the **National Institute of Animal Biotechnology (NIAB) at, Hyderabad.**
  - The NIAB is a premier institute under the **Department of Biotechnology's Biotechnology Research Innovation Council (BRIC).**
- **Collaboration:** The Biobank is developed in **partnership with HiMedia Laboratories.**
- **Significance**
  - The biobank would provide **quality-controlled animal stem cells** and indigenous, cost-effective **cell culture media** to veterinary clinics, research institutions, hospitals, and industry.
  - This first-of-its-kind resource would **accelerate advances in veterinary medicine**, **regenerative therapies,** and **animal cell-based smart protein production.** This will reduce dependence on imports and fostering the country's biomanufacturing capacity.

Note:

- The Ministry also launched **five new veterinary diagnostic tools** aimed at **transforming animal health** management under **the 'One Health' approach.**
- These tools are –
  - **BruDIVA:** A diagnostic test that distinguishes between animals infected with brucellosis and those vaccinated to track and control the disease more effectively.
  - **Udder Care:** An affordable, field-friendly kit for early detection of mastitis, a common udder infection in dairy cattle which reduces milk production and quality.
  - **CureCheck:** A portable device for rapid antibiotic sensitivity testing in livestock infections such as mastitis providing results in under two hours.

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○ **Toxo Antibody Rapid Test:** A simple, on-the-spot test for detecting toxoplasmosis, a parasitic disease affecting both humans and animals causing abortions and stillbirths in livestock.
○ **RapiChex JE NS1 Test:** A rapid, point-of-care diagnostic kit for Japanese Encephalitis, a mosquito-borne viral disease affecting humans and animals.

Nasha Mukt Bharat Abhiyaan (NMBA)

News: An event was held on occasion of completion of 5 years of Nasha Mukt Bharat Abhiyaan (NMBA), by Department of Social Justice & Empowerment on 8th August 2025.

About Nasha Mukt Bharat Abhiyaan (NMBA)

Figure 22.Source – PIB

● It is a **nationwide campaign** addressing **substance abuse through prevention, treatment, and rehabilitation.**

● **Aim:** It aims to **foster a healthy, disciplined, and drug-free youth population**, thereby contributing to the broader goal of national development and social well-being.

● **Launched on:** Launched on 15 August 2020

● **Nodal Ministry:** Ministry of Social Justice and Empowerment

● **Strategy adopted:** NMBA employs a three-pronged strategy –

○ **Supply Control:** Managed by the Narcotics Control Bureau.

○ **Demand Reduction & Awareness:** Led by the Ministry of Social Justice and Empowerment through extensive outreach and awareness activities.

○ **Treatment & Rehabilitation:** Provided by the Ministry of Health and Family Welfare.

● **Background:** It is a key initiative under the **National Action Plan for Drug Demand Reduction (NAPDDR).**

○ The Ministry of Social Justice and Empowerment launched the **National Action Plan for Drug Demand Reduction (NAPDDR) in 2018**.

○ It was according to the obligation of State under **Article 47 of the Constitution** under the Directive Principles of State Policy.

○ **Aim:** The NAPDDR aims to **address the growing challenge of substance abuse** through a comprehensive framework focused on preventive education, awareness generation, counselling, treatment, and rehabilitation.

● **Coverage:** It was **initially implemented in 272 high-risk districts**, but it is expanded to encompass **all districts nationwide**

○ These districts were identified through the **National Survey on Substance Use and inputs from the Narcotics Control Bureau (NCB).**

● **Stakeholders and target groups**

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Source – PIB

- **Key activities to be done**

Source – PIB

100th Anniversary of the Kakori Train Action

News: Prime Minister Narendra Modi paid tributes to the revolutionaries of Kakori incident on its 100th anniversary.

100th Anniversary of the Kakori Train Action

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Source – Rail Museum

- The Kakori Train Action took place on **August 9th, 1925.**
- **Incident:** On 9th August, the revolutionaries of **Hindustan Republican Association (HRA)** stopped the **Number 8 down train near Kakori** (in Uttar Pradesh) and **looted the money** from the guard cabin belonging to the British Government Treasury.
- **Objective:** The objectives of this robbery were to **fund the HRA** with the money of British administration **taxed from the Indians** and to **protest** against the British administration collecting a lot of tax from the Indian people.
- **Revolutionaries involved:** There were total of 10 revolutionaries directly involved in this action.
    - **Ram Prasad Bismil**, who hatched the robbery plan, was joined in its execution by Ashfaqullah Khan, Rajendra Lahiri, Chandrashekhar Azad, Sachindra Nath Bakshi, Keshab Chakravarthy, Manmathnath Gupta, Murari Sharma, Mukundi Lal and Banwari Lal.
- **Outcome**
    - The British authorities were enraged, undertaking a **violent crackdown** and soon arresting many members of the HRA.
    - **Death sentences: Ram Prasad Bismil, Roshan Singh, Rajendra Nath Lahiri and Ashfaqullah Khan** were sentenced to death while the others got varying jail terms, including a **deportation to the infamous Kala Pani** (Cellular Jail in Port Blair) for five of them.
        - On December 17, 1927, **Lahiri** was hanged at **Gonda jail**.
        - On December 19, 1927, **Ashfaqullah, Roshan and Bismil** too were put to death — **Ashfaqullah at Faizabad jail**, **Roshan at Naini (Allahabad) jail** and **Bismil at Gorakhpur jail.**
        - **Bismil** is said to have famously sung **Sarfaroshi ki tamanna ab hamare dil mein hai; Dekhna hai zor kitna baju-e katil mein hai.**
        - The **only major leader** of HRA at this time who **evaded** arrest was **Chandrashekhar Azad.**

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United Nations Conference on Landlocked Developing Countries (LLDC3)

News: The Third United Nations Conference on Landlocked Developing Countries (LLDC3) opened on 5 August 2025 in Awaza, Turkmenistan.

About United Nations Conference on Landlocked Developing Countries (LLDC3)

Source: TOI

- This is a high-level event is convened once every ten years to address the specific challenges faced by 32 landlocked developing nations.
- The conference brought together world leaders, international policymakers, and key stakeholders to chart a path for sustainable growth and integration of LLDCs into the global economy.
- **Theme of LLDC3:** *"Driving Progress through Partnerships"*

Objectives

- The conference aims to coordinate international efforts to overcome structural and geographical challenges faced by LLDCs.
- It seeks to improve trade and infrastructure connectivity, particularly for nations without direct access to seaports.
- A major focus is on promoting smarter investment frameworks and flexible transport corridors that enhance the movement of goods and services across regions.
- It addresses disproportionate barriers to economic diversification, resilience, and infrastructure development that LLDCs face.

Significance

- LLDC3 serves as a crucial platform for the global community to reaffirm its commitment to inclusive and sustainable development for landlocked nations.
- The 32 LLDCs collectively represent over 600 million people but face unique development challenges due to their lack of direct access to maritime trade routes.
- By uniting political will, technical expertise, and financial resources, the conference sets a roadmap for enhancing connectivity, resilience, and prosperity for LLDCs through 2034.

Dengue

News: A new study published identified **envelope dimer epitope (EDE)-like antibodies** as a key determinant of broad, cross-serotype immunity against dengue virus (DENV).

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About Dengue

Source: Learn Science at Scitable

● Dengue is a vector borne disease caused by the dengue virus and transmitted to humans through the **bite of infected *Aedes* mosquitoes, mainly *Aedes aegypti*.**

● The dengue virus (DEN) **comprises four distinct serotypes** (DEN-1, DEN-2, DEN-3 and DEN-4) which belongs to the genus Flavivirus of the family Flaviviridae.

● The disease is **common in tropical and subtropical regions**, especially in urban and semi-urban areas.

● **Symptoms:** Mild dengue symptoms include high fever (up to 40°C), severe headache, pain behind the eyes, muscle and joint pain, rash, nausea, vomiting, and swollen glands.

● **Transmission:** Dengue is mainly transmitted to humans through the bite of infected female *Aedes aegypti* mosquitoes.

   ○ Rarely, transmission can occur through maternal transfer during pregnancy, blood transfusions, or organ transplants.

   ○ Human-to-mosquito transmission can happen from two days before symptoms appear until two days after the fever resolves.

● **Risk Factors:** Unplanned urbanisation, dense populations, poor water storage, and inadequate waste management foster mosquito breeding, while rising temperatures and heavy rainfall from climate change aid their survival and spread.

Mines and Minerals (Development and Regulation) Amendment Bill, 2025

News: The Lok Sabha has passed the Mines and Minerals (Development and Regulation) Amendment Bill, 2025.

About Mines and Minerals (Development and Regulation) Amendment Bill, 2025

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Source – ET

- This Bill seeks to **further liberalize, modernize, and make more dynamic** India's mineral sector, particularly with a **focus on critical and strategic minerals**.
- It introduces **several reforms** to the **Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act, 1957),** aligning the legal framework with current economic and technological realities.

Key Amendments

- **Inclusion of other minerals in a mining lease: Under the Act**, a mining **lease** is granted for a **specific mineral**.
  - The **Bill** provides that **lease holders may apply to the state government** for **adding** other minerals to an existing lease.
  - For **inclusion of critical and strategic minerals**, and other specified minerals, **no additional amount needs to be paid**.
    - These include minerals such as **lithium, graphite, nickel, cobalt, gold, and silver**.
  - **For inclusion of a minor mineral**, the **state government** may decide the **royalty** and other **payments**.
    - Minor minerals include **building stones, gravel, sand, and other minerals declared as minor minerals by the central government.**
  - **For inclusion of major minerals to minor mineral leases**, the **central government** will prescribe **conditions** through Rules.

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- ○ **An atomic mineral** above a specified grade **cannot be included** in a mining lease granted for non-atomic minerals.
- **Removal of limit on sale for captive mines:** Under the **Act**, **captive mines** are allowed to **sell up to 50% of minerals produced in a year**, after meeting end-use requirements.
  - ○ The **Bill removes the limit** on sale of minerals.
  - ○ The Bill also **empowers state governments** to allow **sale of mineral dumps stacked** in the leased area.
  - ○ The Bill provides that **lease holders may apply to the state government** for **adding** other minerals to an existing lease.
- **Expanded scope of National Mineral Exploration Trust:** The **Bill widens the scope** of the National Mineral Exploration Trust (**established under the Act**) to **also fund development of mines and minerals.**
  - ○ The Bill also **renames** the Trust as the **National Mineral Exploration and Development Trust.**
  - ○ The **Bill increases** the rate of **contribution** into the **Trust to 3%** of the royalty from 2% earlier in the Act.
- **Inclusion of contiguous area in mining lease for deep-seated minerals:** The **Bill** allows for a **one-time extension of the area** under a mining or composite lease.
  - ○ This will be **applicable for deep-seated minerals**.
    - ○ **Deep-seated minerals** are minerals which occur at a **depth of more than 200 m** from the surface of land.
- **Mineral exchanges:** The **Bill** provides for **establishing an authority to register and regulate mineral exchanges.**
  - ○ **Definition:** The Bill defines mineral exchange as a **registered electronic trading platform or marketplace for trading minerals and metals.**
  - ○ The **central government will frame Rules** regarding mineral exchanges.

Wallacean Hominids

News: Scientists have found a series of stone tools on Indonesia's Sulawesi island they say may be evidence of humans living 1.5 million years ago on islands between Asia and Australia, the earliest known humans in the Wallacea region.

About Wallacean Hominids

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Source – DD News

- Wallacean hominids refer to **prehistoric human populations** that inhabited the **islands of Wallacea in eastern Indonesia.**
- **Findings of new discovery**
  - Archaeologists from Australia and Indonesia found **small, chipped tools, used to cut little animals and carve rocks**, under the soil in the **region of Soppeng in South Sulawesi.**
  - **Timings: Radioactive tracing** of these **tools and the teeth of animals** found around the site were dated at up **to 1.48 million years ago.**
- **Significance:** The findings could transform **theories of early human migrations**.
  - The **earliest Wallacean humans**, prehistoric persons known as **Homo erectus**, were thought to have only **settled in Indonesia's Flores island and Philippines' Luzon island around 1.02 million years ago**, proving the **significance of the Sulawesi findings** in theories of migration.
- **Abaout Wallacea**
  - It is a **region in Eastern Indonesia** including several islands such as **Sulawesi, Lombok, Flores, Timor, Sumbawa.**
  - The region lies **between Borneo and Java and Australia and New Guinea.**
  - **Named after:** The region is named for the **naturalist Alfred Russel Wallace** who studied the **fauna and flora of the area**.

UNDP Equator Initiative Award

News: A self-help group (SHG) from a small village in Kundgol taluk of Dharwad district has bagged the 'Equator Initiative Award' given by the United Nations Development Programme (UNDP).

About UNDP Equator Initiative Award

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Source – UNDP

- **Organized by:** The Equator Prize is organized by the **Equator Initiative** within the **United Nations Development Programme (UNDP).**
- **Purpose:** It is presented annually to honour nature-based solutions led by indigenous people and local communities that promote sustainable development and ecological resilience.
- The Award is also referred to as the **Nobel Prize for Biodiversity Conservation**.
- The Award is announced on **International Day of the World's Indigenous Peoples**.
  - This Day is observed on **9 August each year** to raise awareness and protect the rights of the world's indigenous population.
- **Prize:** The award includes a cash prize of **$10,000 (approximately ₹8.5 lakh).**
- **2025 Award:** This year's award selection was based on the theme – **"Women and Youth Leadership for Nature-Based Climate Action".**
  - **Bibi Fatima Women's SHG** is the **sole group from India to win** the award.
  - The **other winners** are from Argentina, Brazil, Ecuador, Indonesia, Kenya, Papua New Guinea, Peru, and Tanzania.
  - The women's group had made **remarkable achievements** in areas of implementing **eco-friendly farming practices** in rainfed lands, managing community **seed banks**, ensuring food and nutrition **security**, promoting **millet** cultivation and running a millet processing unit, to value addition and marketing.

Perito Moreno Glacier

News: The Perito Moreno Glacier in Argentina is in the spotlight as it faces rapid disintegration due to rising global temperatures, raising fresh concerns over climate change and its impact on major freshwater reserves.

About Perito Moreno Glacier

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Source: Peregrine Travel Centre

- The Perito Moreno Glacier, also known as the 'White Giant', is located near the city of El Calafate in the Santa Cruz Province of Argentina.
- It is situated in the Andes Mountains in South America.
- The glacier lies within Los Glaciares National Park, which is a UNESCO World Heritage Site.
- The glacier was formed during the last Ice Age, approximately 18,000 years ago.
- It is estimated to be 30 kilometres long.
- The glacier has a towering height of around 60 metres above the water level.
- Due to its enormous size, the Perito Moreno Glacier serves as a major source of freshwater for Argentina.
- It is considered one of the few remaining large glaciers that still show forward movement in certain areas.

About Ice Calving Phenomenon

- The Perito Moreno Glacier is now among the many glaciers across the globe that are disappearing at a faster rate due to rising temperatures.
- Since at least 1917, the glacier has witnessed numerous large-scale ice calving events caused by its forward movement.
- During calving, colossal blocks of ice break away from the glacier and fall into the water, creating a thunderous sound.
- These spectacular events have become a popular tourist attraction, drawing visitors from around the world.

National Anubhav Awards

**News**: The National Anubhav Awards, 2025 mark a decade of achievements since the inception of the Anubhav portal in 2015.

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About National Anubhav Awards:
- **Launch & Vision**: Initiated by the **Department of Pension & Pensioners' Welfare (DoPPW)** to document India's administrative history through memoirs of retired employees.
- **Eligibility**: Employees retiring in the next 8 months or retired within the last 3 years can submit write-ups; these are published by the respective ministry/department and evaluated by DoPPW.
- **Awards Structure**: Initially 5 National Anubhav Awards (2015); now 15 total awards annually (5 Anubhav Awards + 10 Anubhav Jury Awards) since 2023.
- Each ANUBHAV Awardee will receive a medal, certificate, and ₹10,000, while a Jury Certificate winner will get a medal and certificate.

Tato-II Hydroelectric Project

News: The CCEA has cleared an investment of ₹8,146.21 crore for building the 700 MW Tato-II Hydroelectric Project in Shi Yomi district, Arunachal Pradesh. Tato-II Hydroelectric Project

Tato-II Hydroelectric Project
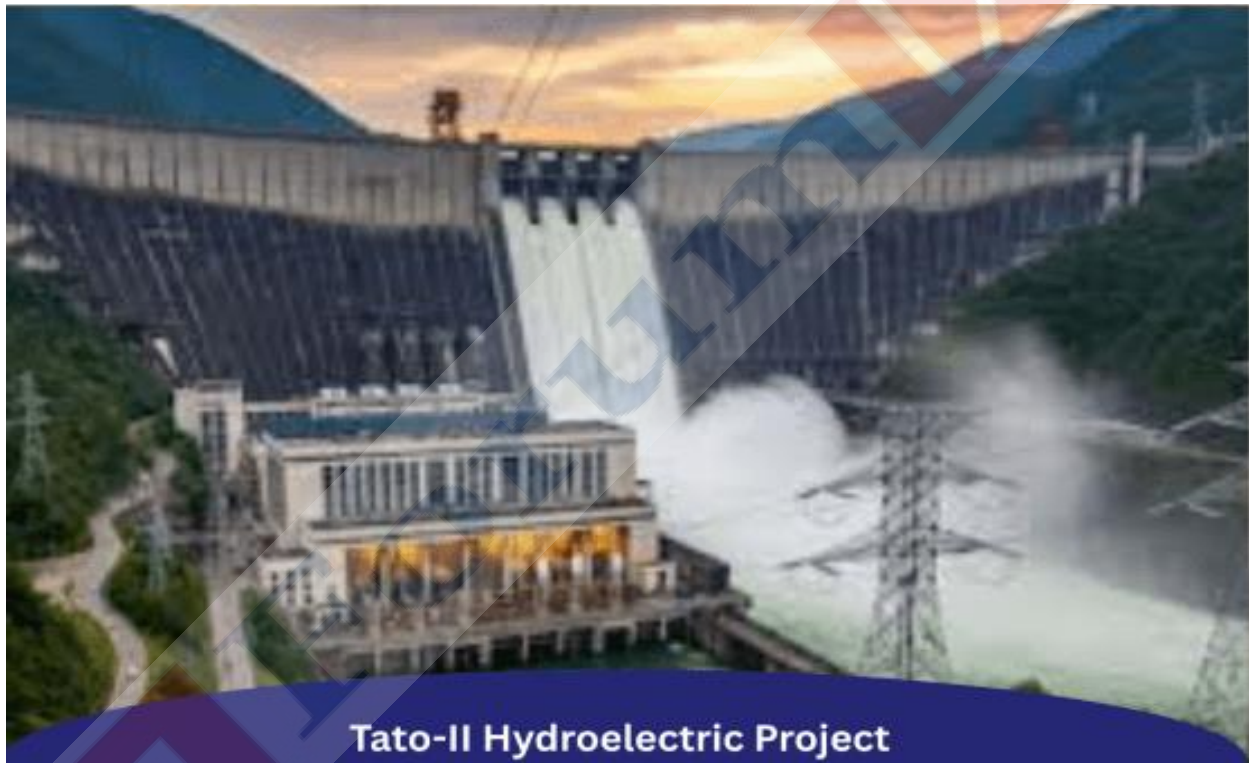
About Tato-II Hydroelectric Project
- The **Tato-II Hydroelectric Project** is a 700 MW run-of-river hydroelectric project located on the Siyom River in Arunachal Pradesh.
- It will have a reservoir capacity of **56 million cubic meters** and will be equipped with **four turbines**, each having a nameplate capacity of **175 MW**.
- The project is expected to generate **2,738.06 million units of electricity annually**, which will significantly improve the power supply in Arunachal Pradesh and contribute to balancing the national power grid.
- As part of the benefits to the host state, Arunachal Pradesh will receive **12% free power**, along with an additional **1% free power** earmarked for the **Local Area Development Fund (LADF)**.

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- The project will be implemented through a **joint venture between the North Eastern Electric Power Corporation Ltd (NEEPCO)** and the **Government of Arunachal Pradesh**.

Elders Group

News: The Elders, a global group of retired statespersons, for the first time described the situation in Gaza as an "unfolding genocide," warning that Israel's ongoing obstruction of humanitarian aid has triggered a "famine."

About Elders Group
- The Elders was **founded in 2007** by **Nelson Mandela** as an independent group of global leaders.
- The organisation works **to promote peace, justice, human rights, and a sustainable planet.**
- **Vision:** The Elders envision a world where all people live in peace, conscious of their common humanity and shared responsibilities for each other, the planet, and future generations. T**hey aspire to a world with universal respect for human rights and the elimination of poverty.**
- The Elders are **supported by members of the Advisory Council.** These members **contribute through donations and generous assistance.**

Areas of Work
- The Elders focus on existential threats that require collective global action.
- Their priority issues include the climate crisis, pandemics, and the risks posed by nuclear weapons.
- They also address conflict, recognising it as both a direct threat and a factor that increases vulnerability to other crises.
- Through their work, they aim to build trust, promote dialogue, and foster long-term solutions that benefit humanity and the planet.

Section 152 of Bharatiya Nyaya Sanhita (BNS)

News: The Supreme Court has asked if "potentiality of abuse" by the state of Section 152 of the Bharatiya Nyaya Sanhita (BNS), which punishes "acts endangering sovereignty, unity and integrity of India", could be a ground to declare the law itself unconstitutional.

About Section 152 of Bharatiya Nyaya Sanhita (BNS)

Figure 23. Source – PIB

- Section 152 of the BNS, 2023 deals with **"acts endangering sovereignty, unity and integrity of India."**
- It **replaces section 124A ("sedition")** of the **Indian Penal Code**, with some key changes and points of continuity.
- **Key provisions**
  - **Acts covered:** It **criminalizes any act done purposely or knowingly** – by words (spoken or written), signs, visible representations, electronic communication, financial means, or otherwise, that:
    - Excites or attempts to excite secession or armed rebellion;
    - Incites or attempts to incite subversive activities;

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- ○ Encourages separatist activities;
- ○ Or otherwise endangers the sovereignty, unity, or integrity of India.
  - ○ **Means of Commission:** The law is wide, covering not just physical acts, but also speech, writings, electronic media, and financial facilitation.
  - ○ **Punishments**
    - ○ **Imprisonment and fine:** Life imprisonment or imprisonment which may extend up to 7 years and also liable to fine.
    - ○ **Cognizable and non-bailable:** The offence is cognizable and non-bailable, tried by a Court of Session.
- ● **Arguments in favour:** The new law addresses colonial hangover, **shifting focus from acts against government to acts undermining the nation's integrity and security.**
- ● **Argument against:** While the **BNS does not explicitly mention sedition**, the **vague language** and **broad scope of Section 152** could effectively **criminalize legitimate dissent and criticism**, much like its predecessor Section 124A of the Indian Penal Code, 1860.
- ● **Judicial review and debate:**
  - ○ Courts have **cautioned about the vagueness** of terms such as "**subversive activities**" and **risk of misuse**.
  - ○ The Courts have been emphasizing the **requirement of direct incitement and imminent threat for invocation of this law.**
- ● **Landmark cases**
  - ○ **Tejender Pal Singh v. State of Rajasthan (2024):** The Rajasthan High Court **quashed charges** under Section 152 for **lack of clear incitement to rebellion**, reinforcing the line between **legitimate dissent and criminal acts**.
  - ○ **Recently**, Supreme Court has said that the **acts which come within Section 152**, would be covered by the ratio of the **Kedar Nath Singh verdict** that **unless there is a clear threat to unity and sovereignty**, the **offence** [of sedition] need **not** be attracted.

Community Forest Rights (CFRs)

News: RTI reveals that thousands of forest rights titles have been reported missing from government records over the past 17 months in Chhattisgarh.

About Community Forest Rights (CFRs)

Figure 24.Source – TH

- ● Community Forest Rights (CFRs) are **collective rights** that **recognize and empower forest-dwelling communities**, especially scheduled tribes (**STs**) and other traditional forest dwellers (OTFDs), to **use, manage, conserve, and protect forest resources** within their **customary boundaries.**
- ● **Legal framework**
- ○ **Enabling law:** The CFRs are granted under the **Scheduled Tribes**

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and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, commonly called the **Forest Rights Act (FRA), 2006.**

- **Provision:** The **Section 3(1)(i) of the FRA** vests the right **"to protect, regenerate or conserve or manage any community forest resource which they have been traditionally protecting and conserving for sustainable use."**
  - The **Gram Sabhas** (village assemblies) become the **legal authority** to govern these resources.
- **Definitions in law:** 'Community Forest Resource' means **customary common forest land** within **traditional or customary boundaries** of the village, including reserved/protected forests, **national parks**, and sanctuaries to which the **community had traditional access.**

- **Features of CFRs**
  - It allows **individuals and communities** to get various types of **titles over forest areas** which they live on, use for their livelihoods, or collect produce from.
  - The titles are distributed after each application is cleared by **gram sabhas, sub-divisional level committees, and district-level committees.**
  - As per the FRA, **once titles are granted**, they are **neither transferable nor alienable** but can **only be inherited**.
  - The law **does provide** for **diversion** in specific cases, where community facilities are being planned or for government projects but **only** with the **consent** of the Gram Sabhas concerned.

- **Significance**
  - CFRs ensure **sustainable livelihoods** of the community.
  - These rights give the **authority to the Gram Sabha** to adopt local traditional practices of forest conservation and management within the community forest resource boundary.
  - These rights also **underline the integral role** that forest dwellers play in the sustainability of forests and in the conservation of biodiversity.

India's 1st PPP model EO satellite constellation

News: The IN-SPACe under the Union Government's Department of Space, has announced the selection of a consortium led by Bengaluru-based PixxelSpace India (PSI) for developing India's first indigenous constellation of earth observing (EO) satellites under a public-private partnership (PPP) model.

India's 1st PPP model EO satellite constellation

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Source – Moneycontrol

- **Developed by:** The constellation will be developed by **a consortium** led by **Bengaluru-based PixxelSpace India (PSI)** along with **Piersight Space, Satsure Analytics India and Dhruva Space.**
- The consortium is **selected** by the **Indian National Space Promotion and Authorisation Centre (IN-SPACe),** under the Union Government's Department of Space.
- **Aim:** The consortium is aimed at **designing, building and operating India's first fully indigenous constellation of 12 state-of-the-art commercial EO satellites.**
- It is the **first such initiative** in the Indian space sector wherein a **private consortium** will invest **Rs 1,200 crore** for the **next five years** to launch a constellation of 12 state-of-the-art EO satellites.
- **PPP model**
  - **India** will provide **technical, strategic and policy support.**
  - The **private firms** will **own and operate** the EO system, including the satellite manufacturing, ground infrastructure, commercialization of data services and launch from India.
- **Equipment:** The satellites will be equipped with panchromatic, multispectral, hyperspectral, and microwave synthetic aperture radar (SAR) sensors.
- **Services to be provided**
  - The constellation will deliver **Analysis Ready Data (ARD)** and **Value-Added Services (VAS)** for **applications** in –
    - climate change monitoring,
    - disaster management,
    - agriculture,
    - infrastructure,
    - marine surveillance,
    - national security and
    - urban planning
- **Significance**
  - It will also cater to the rising demand of high-quality geospatial intelligence.
  - The generation of high-resolution, indigenous satellite data will reduce reliance on foreign sources.

○ This will not just strengthen India's position in the global space market, but will also ensure data sovereignty.

SabhaSaar AI tool

News: The Centre is set to unveil an artificial intelligence (AI)-powered tool SabhaSaar to automatically generate minutes of meetings of gram sabhas. **Applications of SabhaSaar AI in real life**

About SabhaSaar AI tool

Source – Ministry of Panchayati Raj

● **'SabhaSaar'** leverages the **power of AI** to generate **structured minutes of meetings** from gram sabha videos and audio recordings.
● **Launch:** It was rolled out in **Tripura** on **Independence Day, August 15**, and thereafter made available to other states.
● **Launched by:** Ministry of Panchayati Raj
● **Working**
    ○ Panchayat officials can use their **e-GramSwaraj login** credentials to **upload** video/audio recordings on 'SabhaSaar'.
    ○ It is **built on Bhashini**, an **AI-powered language translation platform** launched by the government to **bridge literacy, language, and digital divides**.
    ○ The **tool** generates **transcription** from a video or audio, **translates** it into a chosen output language and prepares a **summary**.
    ○ It enables transcription in all major Indian languages like **Hindi, Bengali, Tamil, Telugu, Marathi and Gujarati, in addition to English.**
● **Importance**
    ○ It will bring **uniformity in minutes** of the gram sabha meetings across the country.
    ○ 'SabhaSaar' is ideal for panchayats, administrative bodies, and rural development projects as it **streamlines documentation and empowers stakeholders** with instant access to meeting insights.

Panchayat NIRNAY portal
● The **Panchayati Raj Ministry** has launched a **Panchayat NIRNAY portal** to ensure that gra**m sabhas meet regularly and function transparently**.
● It is a **real-time monitoring system** that deals with their meetings.
● A **gram sabha** is supposed to **meet at least four days** (January 26, May 1, August 15, and October 2) in **a year**.

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Cheque Truncation System (CTS)

News: The Reserve Bank of India (RBI) has decided on the transition of the Cheque Truncation System (CTS) from the current approach of batch processing to continuous clearing with settlement on realisation in two phases.

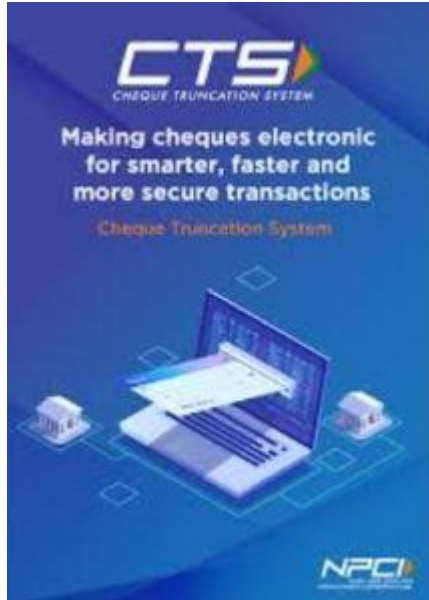**About Cheque Truncation System (CTS)**

Figure 25. Source – NPCI

● The CTS is an **online image-based cheque clearing system** introduced by the Reserve Bank of India (RBI).

● The **cheque images** and **Magnetic Ink Character Recognition (MICR)** data are **captured at the collecting bank** branch and **transmitted electronically**.

○ So, it **stops the physical movement of cheques**.

● **Advantages:** This system **speeds up cheque processing**, **reduces the risk of fraud**, and **improves banking efficiency** across India.

● **Current cheque clearing process**

○ At **present**, the CTS **processes** cheques with a **clearing cycle of up to two working days**.

○ Banks **collect and scan cheques** before sending them for processing in designated batches, resulting in a **T+1 day clearance period** in most cases.

● **New continuous clearing mechanism**

○ Under the **new system**, banks will **scan, present and process cheques on a continuous basis** during business hours.

○ The clearing **cycle** will be **reduced to a few hours**, with cheques presented between **10:00 AM and 4:00 PM being processed in real time** within the presentation window.

○ For each cheque presented, the **drawee bank** will provide either a **positive confirmation** for honoured cheques or a **negative confirmation** for dishonoured ones.

● **Implementation in two phases:** RBI has announced a phased rollout of the system:

○ **Phase 1 (October 4, 2025 to January 2, 2026):** Drawee banks must confirm cheques presented on them by the end of the confirmation session at 7:00 PM. Cheques without confirmation will be deemed approved for settlement.

○ **Phase 2 (From January 3, 2026):** The item expiry time will change to T+3 clear hours. For example, cheques presented at 10:00 AM must be confirmed b

● **Post-settlement payment release**

○ Once the settlement is complete, the **clearing house will share confirmation results** with the **presenting bank**.

○ The **presenting bank must release funds to customers immediately**, and **no later than one hour after settlement**, subject to standard safeguards.

● **Objective of the new system:** The continuous clearing initiative is **aimed at**:

○ Enhancing customer convenience

○ Reducing settlement risks for banks and participants

○ Improving operational efficiency across the banking system

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Blue Pinkgill Mushrooms (Entoloma hochstetteri)

News: A burst of rare and colourful Blue Pinkgill Mushrooms has been documented in the Kagaznagar forest division of the Komaram Bheem Asifabad district in Telangana.

About Blue Pinkgill Mushrooms (Entoloma hochstetteri)

Figure 26.Source – TNIE

- It is also known as the **sky-blue mushroom**, or **werewere-kokako** in **Maori folklore**.
- It is a **blue coloured mushroom**, whoose **colour** is derived from rare **azulene pigments**.
- Its **gills** gradually **turn pink** with **maturing**
- **Ecological role:** It plays an important ecological role, likely involved in **decomposing organic matter** and aiding **nutrient cycling**.
- **Habitat:** It is a species **native to New Zealand** and famously featured on the **country's $50 note**.
  - **In India:** It has been spotted blooming in the **Kadamba Reserve Forest** and other locations across the **Kagaznagar forest division** of the **Komaram Bheem Asifabad district in Telangana.**
- **Fruiting conditions**: It favors **moist forest beds**, especially during the **monsoon**, making habitat conservation vital for its survival.

Ideonella sakaiensis

News: Researchers have discovered microbes such as *Ideonella sakaiensis* that show the potential to break down PET plastic.

About Ideonella sakaiensis

- Ideonella sakaiensis belongs to the genus **Ideonella** and the family **Comamonadaceae**.
- It is a unique bacterium that can degrade and consume plastic, specifically **polyethylene terephthalate (PET)**, by using it as both a carbon and energy source.
- Ideonella sakaiensis was initially isolated from **PET-contaminated soil**, which suggests that its natural habitat is the environment where plastic waste is present.
- It thrives in **oxygen-rich moist soil** and is also found in **sewage sludge**. This indicates that it adapts well to areas enriched with **plastic wastes**.

Characteristics

- Ideonella sakaiensis is a **Gram-negative, rod-shaped** bacterium.
- It is **motile** and moves with the help of a single polar flagellum, making it a **monotrichous bacterium**.
- It does not produce spores and is **non-pigment-producing**.
- It produces two enzymes that make it capable of degrading plastic.

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- ○ The first enzyme, **PETase**, breaks down PET into **mono(2-hydroxyethyl) terephthalic acid (MHET)**.
  - ○ The second enzyme, **MHETase**, further breaks down MHET into **terephthalic acid (TPA)** and **ethylene glycol (EG)**.
  - ○ Both of these compounds are environmentally safe and can be used as a **carbon and energy source** by Ideonella sakaiensis itself as well as by other organisms.
- Ideonella sakaiensis represents a **biological solution to plastic pollution**, particularly for PET plastics that are widely used in bottles, packaging, and textiles.
- Its ability to break down PET into harmless components makes it a potential tool for **industrial-scale biodegradation** and **plastic recycling**.

Key Facts about Singapore

News: India and Singapore recently finalised around ten agreements. Pacts were signed on areas including on connectivity, digitalisation, healthcare and medicine, skills development and advanced technology.
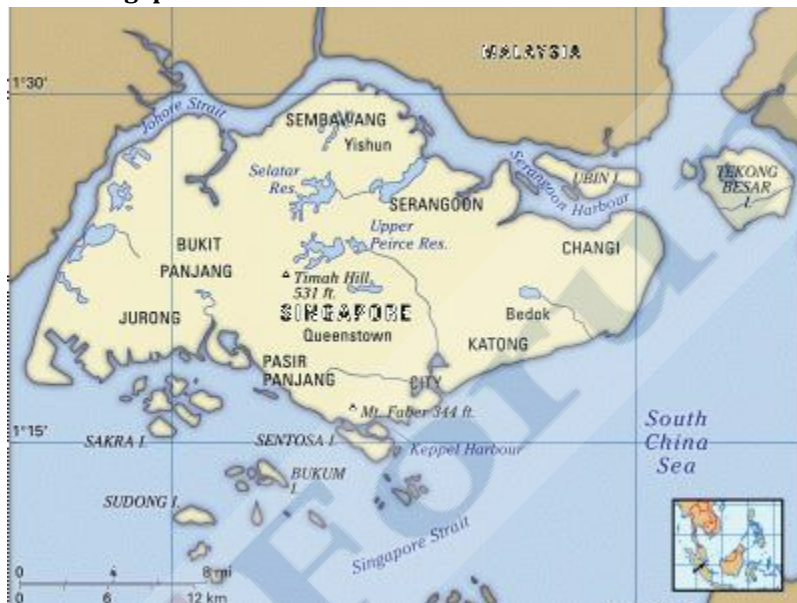
About Singapore

Figure 27.Source: Britannica

- **Location:** Singapore is a city-state located at the **southern tip of the Malay Peninsula, a**bout 137 kilometres north of the Equator.
- It consists of the main **diamond-shaped Singapore Island and about 60 smaller islets.**
- The main island is **separated from Malaysia by the Johor Strait and from Indonesia by the Singapore Strait.**
- **Highest point:** The highest point is Timah Hill at 162 metres, while most of the island lies below 15 metres above sea level.
- **Four official languages are recognised:** English, Mandarin Chinese, Malay, and Tamil.

- Singapore is a **unitary parliamentary democracy** based on the Westminster system.
- Singapore is the **largest port in Southeast Asia** and **one of the busiest in the world.**
- It is member country of Association of Southeast Asian Nations (ASEAN)

Pradhan Mantri Viksit Bharat Rozgar Yojana

News: Prime Minister announced the Pradhan Mantri Viksit Bharat Rozgar Yojana from the historic Red Fort on August 15th.
About Pradhan Mantri Viksit Bharat Rozgar Yojana

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Figure 28. Source – PIB

- It is a key initiative which aims to support creation over 3.5 crore jobs in two years.
- **Nodal Ministry**: Ministry of Labour & Employment
- **Scheme outlay:** Rs. 1 lakh crore
- **Benefits:** The scheme will provide **incentive of up to Rs. 15,000 in two installments** to newly employed youth and up-to Rs. **3000 per month per new employee** to employers for creation new job opportunities.

Key Features of the Scheme:

- **Part A – Support to First-Time Employees:**
  - **Beneficiaries:** This Part targets the first-time employees registered with EPFO.
  - The Part A will benefit around **92 crore first time employees**.
  - **Eligibility:** Employees with **salaries up to Rs 1 lakh** will be eligible for the incentives.
  - **Benefits:** It will offer **one-month EPF wage up to Rs. 15,000 in two instalments**.
  - **Working:** The **1st instalment** will be payable **after 6 months of service** and the **2nd instalment** will be **payable after 12 months of service** and **completion of a financial literacy programme** by the employee.
  - **Savings:** To encourage the habit of **saving**, a portion of the incentive will be kept in a **savings instrument of deposit account** for a **fixed period** and can be **withdrawn by the employee at a later date**.

- **Part B – Incentives for Employers:**
  - **Target:** This part will encourage generation of additional **employment in all sectors**, with a **special focus on the manufacturing sector**.
  - **Beneficiaries:** The **employers** will get **incentives in respect of new employees** with **salaries up to Rs 1 lakh.**
    - This part is expected to incentivize employers for the creation of additional employment of nearly **60 crore persons**.
  - **Features:** The Government will incentivize **employers, up to Rs 3000 per month**, for **two years**, for **each** additional employment, **sustained for at least six months**.
    - For the **manufacturing sector**, incentives will be extended to the **3rd and 4th years** as well.

- **Incentive Payment Mechanism**
  - **For Part A:** All **payments** to the **First Time Employees under Part A** of the Scheme will be made through **DBT** (Direct Benefit Transfer) mode using Aadhar Bridge Payment System (**ABPS**).
  - **For Part B:** Payments to the Employers under Part B will be made directly into their **PAN-linked Accounts**.

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Ionic Liquids

News: Scientists have found life can exist on rocky super-earths with volcanic activity and little water thanks to ionic liquids.

About Ionic Liquids

Figure 29. Source – TH

- These are salts that **stay liquid even in a vacuum** at temperatures below 100°C.
- Unlike **ordinary liquids** made of **neutral molecules** (like water), **ionic liquids** are composed entirely of **ions—positively** and **negatively** charged particles.
- **Artificial manufacturing:** In the lab, they can be made by mixing **volcanic sulphuric acid** with **nitrogen-containing organic molecules** found on planets, then **letting the extra acid evaporate**.

- These liquids are **stable** even at room temperature.
- **Importance:** They can **dissolve biological molecules to support life**, and remove the need for **water oceans** to support alien life.

Konkan Shadowdamsel and Crimson Shadowdamsel

News: Two new species of damselflies have been discovered in the Western Ghats by researchers from Maharashtra and Kerala.

About Konkan Shadowdamsel and Crimson Shadowdamsel

Source – HT

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- Both the species belong to the **group** commonly called '**Shadowdamsels'** because of their **affinity for well-shaded forest habitats**.
- **Habitat**
  - These species are **endemic to Maharashtra** and are restricted to small portions of the **hills**.
  - Shadowdamsels usually **thrive in pristine habitats** with good **canopy cover and small streams**.
- **Mistaken identity:** Earlier, these two species were reportedly mistaken for the **Red-spot Shadowdamsel (Protosticta sanguinostigma),** described over a hundred years ago by British odonatologist F.C. Fraser from the **Nilgiri Hills**.
- **Specifications**
  - The **Crimson Shadowdamsel** has a **reddish body**.
  - The **Konkan Shadowdamsel** has a **coffee-brown** ground colouration.
  - The **Red-spot Shadowdamsel** is **jet black**.
- **Threat level:** Their threat level still **needs to be assessed**.
- **Threats:** They are currently facing the threat of **extended plantations**.
- **Ecologocal importance**
  - The Shadowdamsels can act as **indicators of the health of our forests,** since they are only seen in **pristine forests**.
  - They are **pollution indicators** as well.

Note:

- The species **Konkan Shadowdamsel** is discovered in **Maharashtra's Sindhudurg district.**
- The species **Crimson Shadowdamsel** (Protosticta sanguinithorax) is discovered in **Kerala's Thiruvananthapuram district.**

Sulawesi Island

News: The German Research Centre for Geosciences (GFZ) reported that a 5.7 magnitude earthquake struck Sulawesi, Indonesia.

About Sulawesi Island

- Sulawesi, formerly called **Celebes**, is a major island in Southeast Asia. It forms part of Indonesia's **Greater Sunda Islands** chain.
- It is ranked as the **11th largest island in the world**.
- It is shaped by **four interconnecting peninsulas and s**urrounded by other large islands:
  - **Borneo** (west)
  - **Philippines** (north)
  - **Maluku Islands** (east)
  - **Flores & Timor** (south)
- **It is highly mountainous island** with some **active volcanoes**. It was once entirely covered with **rainforests**, but large areas have been lost to deforestation.
- It contains **13 freshwater lakes**, including **Lake Matano**, the **deepest lake in Southeast Asia**.
- The highest peak is **Mount Ratenkombola (Mario)**, standing at **3,455 meters**.
- It is home to **seven major ethnic groups**: Toala, Toraja, Buginese, Makassarese, Minahasan, Mori, and Gorontalese.
- **Makassar** is the island's **largest city** and an important cultural and economic hub.

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Sarvottam Yudh Seva Medal (SYSM)

News: In 2025, President Droupadi Murmu approved the awarding of seven Sarvottam Yudh Seva Medals on the eve of the 79th Independence Day. These awards recognised the leadership of Operation Sindoor.

Figure 30. Source- Wikipedia

About Sarvottam Yudh Seva Medal (SYSM)

● It is India's highest wartime distinguished service award, instituted on 26 June 1980, to honor exceptional service in war, conflict, or hostilities.

● The medal is regarded as *the wartime equivalent of the Param Vishisht Seva Medal (PVSM),* which is given for distinguished service in peacetime.

● **Personnel Eligible**:

○ It is open to *all ranks of the Army, Navy, and Air Force*, including members of the *Territorial Army, Auxiliary and Reserve Forces*, and other legally constituted Armed Forces when embodied.

○ *Nursing officers and personnel of the Armed Forces Nursing Services* are also eligible.

● The award *may be conferred posthumously.*

● The Sarvottam Yudh Seva Medal has been *awarded only three times before 2025*, which highlights its rarity and the exceptional standard required for eligibility.

Chief Election Commissioner (CEC) – Appointment and Removal

News: The opposition parties threaten the impeachment of Chief Election Commissioner (CEC) and action against the two election commissioners.

Chief Election Commissioner (CEC) – Appointment and Removal

Source – AajTak

Constitutional and Legal Provisions

● **Article 324** of the Constitution and the **CEC and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023** lay down provisions regarding the **appointment, tenure, and removal of the CEC.**

Process of Appointment

● **Appointed by:** The **CEC and Election Commissioners** are appointed by **the President** of India.

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- **Selection committee:** They are appointed upon the **recommendation** from a **three-member selection committee** comprising the **Prime Minister, the Leader of the Opposition (LoP) in the Lok Sabha, and one member of the Union Cabinet.**
- **Conditions**
  - Those appointed **should have previously held secretary-level positions** in the Government.
  - They should be **"persons of integrity**, who have **knowledge** of and **experience** in **management and conduct of elections.**
- **Tenure:** The appointments are made for a **tenure of six years or until the age of 65 years**, whichever comes first.
- **Service conditions:** The **CEC** enjoys the **same services and monetary benefits** that are extended to justices of the **Supreme Court**.
- **Immunity:** Clause 16 of the **2023 Act** grants **immunity to the CEC and ECs** from **any legal action for decisions taken while in office.**
- **Resignation:** According to **Clause 11(1) of the Act,** the **CEC or an EC** can, at any time, by **writing** under his hand addressed to the **President**, resign from his office.
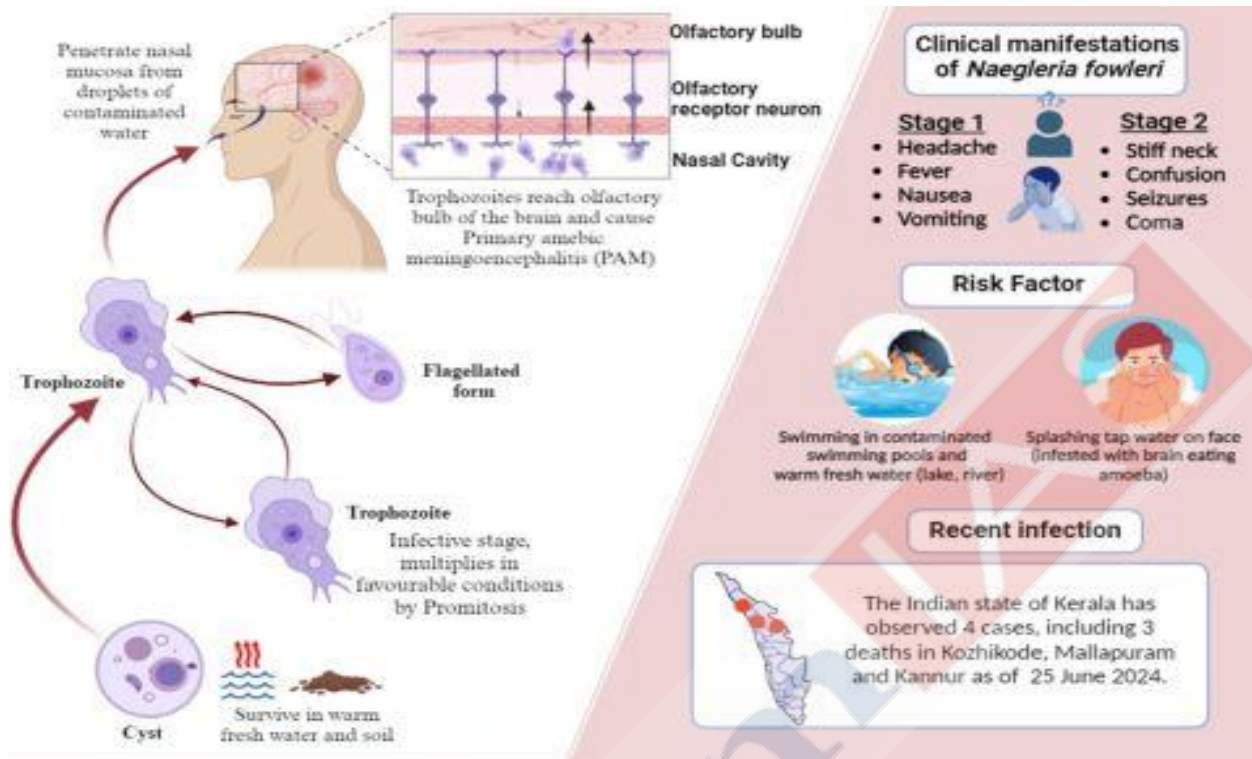
Process of Removal

- **Constitutional and legal provision: Article 324(5)** of the Constitution states that the **CEC can be removed** from office only in like **manner and on the like grounds as a Judge of the Supreme Court.**
  - This framing can also be found in **Section 11(2) of the 2023 Act.**
- Any **other Election Commissioner or a Regional Commissioner** shall **not** be removed from office **except on the recommendation of the Chief Election Commissioner**.
- **Grounds of removal:** The removal can only be on the ground of **proved misbehavior or incapacity.**
  - **Misbehaviour** can comprise any corrupt practices or abuse of office.
  - **Incapacity** refers to a situation where the officer is unable to perform her duties.

Primary Amoebic Meningoencephalitis (PAM)

News: The Health department in Kozhikode, Kerala, has issued an alert against primary amoebic meningoencephalitis (PAM) in the district in view of the reporting of three cases of the infection and a death here in recent days.

About Primary Amoebic Meningoencephalitis (PAM)

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Source – Taylor and Francis Journals

- It is a **rare but lethal central nervous system infection**
- **Caused by:** It is caused by **Naegleria fowleri**, known as the **"brain eating amoeba".**
  - It is a **free-living amoeba** found in **warm, fresh water and soil**, and infects people when it enters the body **through the nose**.
- **Risk factors:** Risk factors for infection include **swimming, diving, waterskiing, surfing, and exposure to hot springs.**
- **Season/region of vulnerability:** PAM is **more common in warmer regions** and generally occurs in the **warmer months of spring and summer**, possibly due to the increased likelihood of participation in **waterborne activities**.
- **Symptoms:** Symptoms include **headache, fever, nausea, and vomiting**.
- **Testing and diagnosis:** PAM is **difficult to diagnose** because of the rarity of the infection and the non-specific early symptoms.
- **Prevention:** People should focus on **limiting the amount of water** going up the nose.
- **Treatment and recovery:** Several drugs are effective, however, their **effectiveness is unclear** since almost all infections have been **deadly**, even when people were treated.
- **Cases in India:** The **first case of PAM in India** was reported in **1971**, and the **first case in Kerala** was reported in **2016**.

Note:

Amoebic Encephalitis

- There are **2 types of amebic encephalitis** –
  - **Primary Amoebic Meningoencephalitis (PAM)**
  - **Granulomatous Amoebic Encephalitis (GAE).**
- The initial **symptoms of PAM** are **indistinguishable** from **bacterial meningitis**, while the **symptoms of GAE** can **mimic a brain abscess, encephalitis, or meningitis**.

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- These infections are almost **uniformly fatal**.
- The **mortality rate is above 90%,** despite antimicrobial therapy.

Nominations to Union Territory Assemblies

News: The Union Ministry of Home Affairs has informed the Jammu and Kashmir High Court that the Union Territory's Lieutenant-Governor can nominate five members to the J&K Legislative Assembly without the government's "aid and advice".

About Nominations to Union Territory Assemblies

Figure 31. Source – TH

Constitutional and Legal Provisions

- The **Indian Constitution** provides for **nominated members** in the houses of **Parliament** and **State legislature**.
- **Lok Sabha and State assemblies:** The provision for nominating **two Anglo-Indian members** to the **Lok Sabha** and **one Anglo–Indian** member to **State Legislative Assemblies** was **discontinued** in **2020**.
  - In the **six States with Legislative Councils**, nearly **one-sixth of the members are nominated**.
  - These members are nominated **by the Governors** on the **advice** of the States' Council of Ministers.

- **Rajya Sabha**: The **Rajya Sabha** has **12 nominated members**.
  - These members are **nominated by the President** on the **aid and advice** of the Union Council of Ministers.

- **Union Territories with Assembly:** The composition of the Legislative Assemblies of **three Union Territories (UT)** is governed by **acts of Parliament**.
  - **UT of Delhi: Section 3** of the **Government of National Capital Territory of Delhi Act,** 1991 provides for **70 elected members** in the Delhi Assembly.
    - There are **no nominated MLAs** in the Delhi Assembly.
  - **UT of Puducherry: Section 3** of the **Government of Union Territories Act, 1963** provides for **30 elected members** in the Legislative Assembly of Puducherry.
    - It also provides that the **Union government may nominate up to three members** to the Puducherry Assembly.
  - **UT of Jammu and Kashmir: Section 14 of the J&K Reorganisation Act, 2019** (as **amended in 2023**) provides for a **total of 90 elected seats** in the Legislative Assembly of J&K.
    - **Sections 15, 15A and 15B** provide that the **LG** may **nominate** a total of up to **five members** — two women, two Kashmiri migrants and one displaced person from Pakistan occupied Kashmir — to the J&K Assembly.

Judicial Precedents in cases related to the procedure of nomination of members to assemblies of UTs

- **Lakshminarayanan versus Union of India (2018) case:** The case was related to the procedure for **nomination of members to the Puducherry Assembly**.

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- The court upheld the **power of the Union government to nominate three members** to the Assembly and that it **need not be based on the advice** of the UT's Council of Ministers.
- **Government of NCT of Delhi versus Union of India (2023) case:** The Supreme Court had delved into the concept of **'triple chain of command'** that ensures **democratic accountability**.
    - As per this **'triple chain of command' concept**, the **civil servants are accountable to ministers; ministers are accountable to the legislature**; and the **legislature is accountable to the electorate**.
    - It therefore held that the **LG is bound by the aid and advice of the Council of Ministers** in all matters **except** where the **Delhi Assembly does not have legislative powers**.

Government of India's stand

- The **nomination** of five members to **J&K Assembly was outside the realm of the business of the elected government** of J&K.
- Therefore, the **Lieutenant Governor** can **nominate** five members to the **J&K Assembly without "aid and advice" of the elected government** in the Union Territory.

Mount Elbrus

News: Kabak Yano, a mountaineer from Arunachal Pradesh, successfully ascended Mt. Elbrus, the highest peak in Europe, located in Itanagar.

About Mount Elbrus
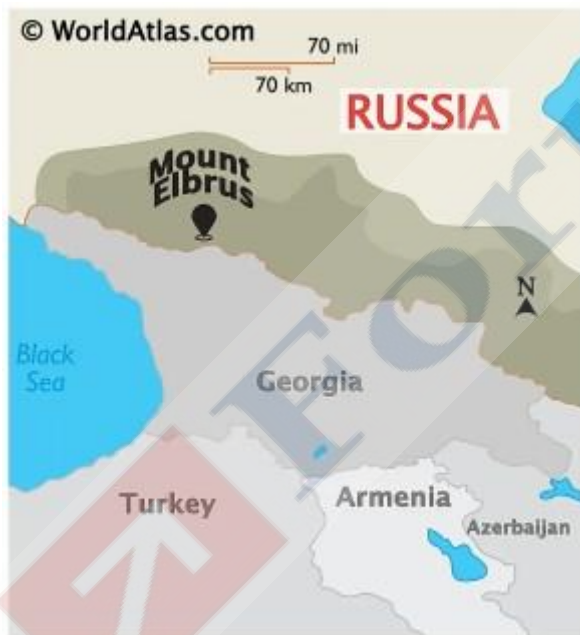
- It is located in **southwest Russia and is part of the Caucasus Mountains.** It also lies within the boundaries of **Prielbrusye National Park.**
- **Mount Elbrus is the highest peak in Russia** as well as the tallest mountain in Europe.
- It is **recognised as one of the Seven Summits of the world**, which represent the tallest mountains on each continent.
- Geological studies reveal that **Mount Elbrus was created more than 2.5 million years ago.**
- The volcano was most active during the Holocene Epoch. Currently, **Mount Elbrus is an inactive stratovolcano** comprising two principal summits, both of which are dormant volcanic domes.
- The two major glaciers on **Mount Elbrus are the Bolshoi Azaou Glacier and the Irik Glacier.**
- Several important Russian rivers originate from the glaciers of Mount Elbrus such as **Baksan River, the Malka River, and the Kuban River, which are primarily fed by the Bolshoi Azaou and Irik Glaciers.**

Key Facts about Alaska

News: The "Alaska Moment" between U.S. President Donald Trump and Russian President Vladimir Putin marked a critical diplomatic interaction with significant global ramifications

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About Alaska

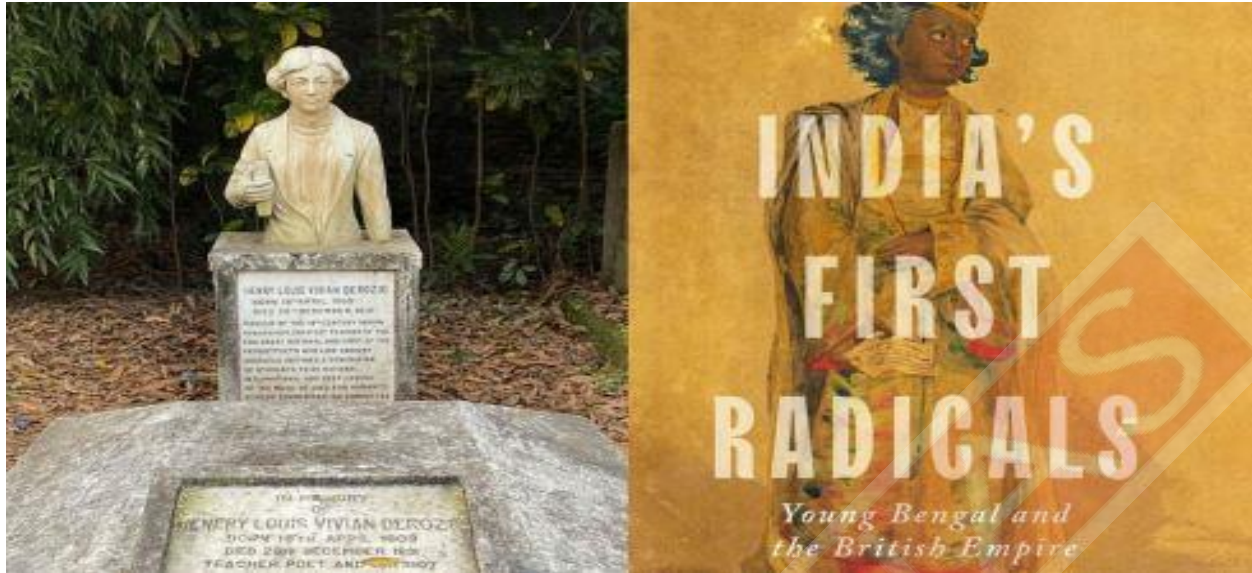*Figure 32. Source: Geography Realm*

- It is located at the **extreme northwest of the North American continent.**
- The Alaska Peninsula is the **largest peninsula in the Western Hemisphere**.
- Alaska **spans both the Eastern and Western Hemispheres**, as the 180th meridian passes through the Aleutian Islands.
- **Borders and Surroundings**: Bounded by the **Beaufort Sea and Arctic Ocean to the north,** Canada's Yukon and **British Columbia** to the east, Gulf of Alaska and Pacific Ocean to the south, and the **Bering Sea and Chukchi Sea to the west**.
- **Capital:** Juneau, is located in the southeast panhandle region.
- Alaska became the **49th state of the United States on January 3, 1959.**

- **Strategic Significance:** Alaska lies at a central location for air and sea travel between North America, Asia, and Europe, making it militarily significant, especially during World War II.
- **Natural Features**:
  - Mount McKinley (Denali), at 20,310 feet, **is the highest peak in North America.**
  - About **one-third of Alaska lies within the Arctic Circle**, with vast regions of tundra and permafrost.
  - Alaska has approximately **130 active volcanoes, mostly along the Aleutian Islands and Alaska Peninsula.**
  - It is located **within the circum-Pacific seismic belt**, with a history of powerful earthquakes, including the 1964 Alaska earthquake.

Young Bengal Movement

News: Rosinka Chaudhuri in India's First Radicals: Young Bengal and the British Empire (India Viking) describes about the Young Bengal Movement of 19th century.

About Young Bengal Movement

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Source – Homegrown

- **Origin and Leadership**
  - The Young Bengal Movement was an **intellectual and social reform movement** in **Bengal** during the **early 19th century (1820s-1830s).**
  - **Leader:** It was led by **Henry Louis Vivian Derozio**, an **Anglo-Indian teacher** at **Hindu College, Kolkata.**
  - **Members:** The **members** of the movement were known as **Derozians** and were mostly **young, radical thinkers** inspired by **European Enlightenment and liberal ideas.**
- **Objectives and Philosophy**
  - The movement championed **rationalism**, free thought, and scientific inquiry.
  - It sought to challenge **orthodox Hindu religious** and **social practices**, such as caste discrimination, child marriage, polygamy, and restrictions on widow remarriage.
  - It advocated individual **liberty, freedom of expression, and social reforms**.
  - It promoted **critical thinking** and **modern education** based on reason rather than traditional dogma.
  - It advocated the **protection of peasants (ryots) from oppressive zamindars**.
- **Initiatives started**
  - In **1828**, Derozio founded with his students the **'Academic Association'**, which organised debates on various subjects.
  - Another organisation of the Young Bengal was **the 'Society for the Acquisition of General Knowledge' founded in 1838.**
  - **Journals:** The Young Bengal published quite a **few journals** between 1828 and 1843 to give wider publicity to their views and principles.
    - Among these were the **Parthenon, Hesperus, Jnanannesan, Enquirer, Hindu Pioneer, Quill and the Bengal Spectator.**
  - They established the **Calcutta Public Library in 1835**, which later became the **National Library of India**.
  - They supported **freedom of the press** and demanded **judicial reforms**, such as impartial jury trials.

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Jan Vishwas (Amendment of Provisions) Bill, 2025

News: The Government introduced the Jan Vishwas (Amendment of Provisions) Bill, 2025 in the Lok Sabha aiming to amend 355 provisions across 16 Central Acts to ease their applicability.

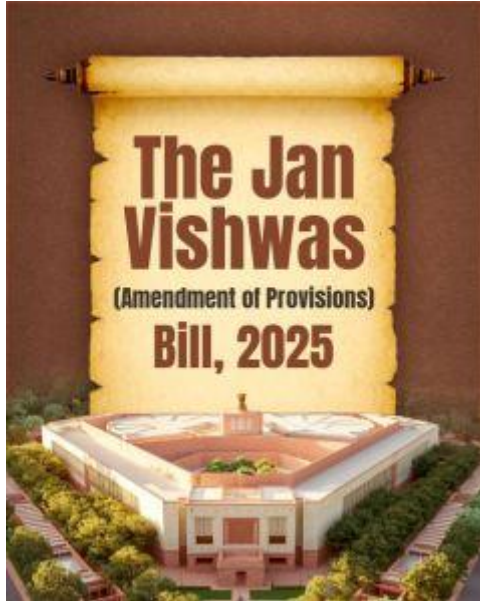**About Jan Vishwas (Amendment of Provisions) Bill, 2025**

Figure 33.Source – Ministry of Commerce

● The Bill builds on the **Jan Vishwas (Amendment of Provisions) Act, 2023**, which was the **first consolidated legislation to decriminalise minor offences** across multiple laws.

○ The 2023 Act **decriminalised 183 provisions** across **42 Central Acts** administered by **19 ministries and departments.**

● **Objective of Bill:** The 2025 Bill **expands this reform agenda** to cover **16 Central Acts** administered by **10 Ministries/Departments**.

○ A total of **355 provisions** are proposed to be **amended —288 provisions** decriminalised to foster **Ease of Doing Business**, and **67 amendments** under **New Delhi Municipal Council Act, 1994 (NDMC Act) and Motor Vehicles Act, 1988** to facilitate **Ease of Living**.

● **Key features of the Bill:**

○ **First-time contraventions:** Advisory or warning for 76 offences under 10 Acts.

○ **Decriminalisation: Imprisonment clauses** for minor, technical or procedural defaults replaced with monetary penalties or warnings.

○ **Rationalisation of penalties:** Penalties made proportionate, with graduated penalties for repeated offences.

○ **Adjudication mechanisms:** Designated officers empowered to impose penalties through administrative processes, reducing judicial burden.

○ **Revision of fines and penalties:** Automatic **10% increase every three years** to maintain deterrence without legislative amendments.

○ **Four Acts —** the **Tea Act, 1953, Legal Metrology Act, 2009, Motor Vehicles Act, 1988, and Drugs and Cosmetics Act, 1940 —** were part of Jan Vishwas Act, 2023 and are proposed for further **decriminalisation** under the current Bill.

Agriculture Infrastructure and Development Cess (AIDC)

News: The Ministry of Finance has removed the 11% import duty (5% Basic Customs Duty and 5% Agriculture Infrastructure & Development Cess) on cotton till September 30.

About Agriculture Infrastructure and Development Cess (AIDC)

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Source – BusinessLine

- It is a **tax** imposed by the government on the **commercial production of agricultural produce**.
- **Introduction:** It was introduced in the **Union Budget (2021-22)**, **clause 115(1) of the Finance Bill 2021**.
- This cess is **imposed on goods specified in the first schedule to the Customs Tariff Act of 1975** when **imported** into India.
- **Aim:** The government aims to **utilize** the funds collected through AIDC for **infrastructure development in agriculture** across the country.
- **Items covered:** The items covered under AIDC are – gold, silver, alcohol beverages, crude palm oil, crude soyabean and sunflower oil, apples, coal, lignite and peat specified fertilizers, peas, kabuli chana, bengal gram, lentil and **cotton**.
- **Purpose**
  - The **revenue generated** through AIDC will be utilized for infrastructure development in agriculture to **enhance productivity** and **protect the sector** from undue competition, ultimately increasing its **output competently**.
  - The **essential objectives** to be completed include – creating state-of-the-art storage facilities, developing robust cold chains, improving transportation networks, implementing modern processing units, and enhancing farmers' overall well-being.
- **Impact on consumers:** It offsets the **reduction in customs or excise duty** and thus does not **raise the tax incidence for consumers**.

Cess vs Tax
- **Cess** is collected for a **specific purpose** and its **proceeds** are earmarked for that purpose (e.g., agriculture infrastructure), unlike **regular taxes** that go to the **consolidated fund**.
- **Revenue from AIDC** is **not shared with state governments**; it stays with the **Centre** for the targeted sector.

Mission Sudarshan Chakra

News: Prime Minister Narendra Modi announced the launch of Mission Sudarshan Chakra on August 15, 2025, during his Independence Day address from the Red Fort.

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Source- ET

About Mission Sudarshan Chakra

- It is **India's ambitious plan to build a multi-layered integrated air and missile defence shield.**
- The project aims **to provide a complete nationwide security cover by the year 2035.**
- The mission is designed **to provide security to all critical and strategic locations across India.**
- It will **protect sensitive defence facilities, nuclear installations, and vital national infrastructure.** Civilian areas such as **hospitals, railways, and centres of faith will also receive protection under the shield.**

Key Features

- The shield will **consist of multiple layers of protection using land-based, sea-based, and space-based systems.**
- It will **employ advanced early-warning and tracking sensors integrated with space assets** for real-time threat detection.
- A strong command and control system will **ensure rapid decision-making and coordinated responses.**
- The system will rely on advanced interceptor missiles **capable of neutralising aircraft, drones, ballistic missiles, and cruise missiles.**
- Mission Sudarshan Chakra is not limited to defensive measures but **will also integrate offensive strike capabilities.**
- The system **will incorporate new weapons such as the 500-kilometre range quasi-ballistic missile Pralay.**
- A new 1,000-kilometre **subsonic long-range land-attack cruise missile will be deployed for targeted strikes.**
- The strike range of the BrahMos supersonic cruise missile **will be increased from 450 kilometres to 800 kilometres.**

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- Mission Sudarshan Chakra is conceptually similar to **Israel's Iron Dome and the United States' proposed Golden Dome.** However, unlike these systems, **India's shield will operate on a much larger scale and will include integrated offensive weaponry.**

Minimum Public Shareholding

News: The Securities and Exchange Board of India (SEBI) has proposed significant changes to the Minimum Public Shareholding (MPS) and Minimum Public Offer (MPO) regulations for large companies aiming to list on Indian stock exchanges.

About Minimum Public Shareholding

- The **Minimum Public Shareholding (MPS)** rule is a regulatory requirement established by the **Securities and Exchange Board of India (SEBI)**, under the **Securities Contracts (Regulation) Rules, 1957**, and is further reinforced by the **SEBI (Listing Obligations and Disclosure Requirements) Regulations**. These rules are applicable to all listed companies in India.
- **Objectives of MPS:** The primary objectives of the MPS rule are:
  - To **enhance liquidity** in the stock market by increasing the number of publicly traded shares.
  - To **promote fair price discovery**, as a wider pool of shareholders results in better market efficiency.
  - To **strengthen corporate governance** by ensuring that the company is not dominated by a small group of promoters.
  - To encourage **broader participation** from retail investors and institutional shareholders.
- **Applicability:** The MPS rule applies to all listed companies in India, irrespective of their size or sector. Both **existing listed companies** and **newly listed companies** must adhere to these requirements.
- **Requirement:** Under the MPS rule, all listed companies must ensure that at least **25% of their total issued and paid-up equity share capital** is held by **public shareholders**, which include non-promoter and non-promoter group entities. This ensures that the public holds a significant portion of the company's shares, contributing to market liquidity.
- If the promoters of a company hold **more than 75% of the equity share capital,** they are required to **reduce their stake** to comply with the MPS rule. This divestment can be done by either placing shares with institutional investors or issuing rights shares to the public. The aim is to ensure that the public shareholding reaches the minimum required level.
- For **newly listed companies**, the MPS rule mandates that they meet the **25% public shareholding requirement** within **three years** from the date of listing. For companies with a **post-issue market capitalization** of over **₹1 trillion**, the deadline to meet the 25% public shareholding requirement is extended to **five years**.
- If at any point a company's public shareholding falls below the required **25%**, the company must restore it to 25% within a maximum period of **12 months**. Failure to meet this requirement could lead to penalties or other regulatory actions.
- If a company fails to comply with the MPS requirement, **SEBI** may impose **penalties** or take corrective action. Additionally, the company could face **restrictions on corporate actions**, such as mergers, buybacks, or rights issues. Stock exchanges may also take **disciplinary measures**, which could include fines or the suspension of the company's shares from trading.

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Palmyra Palm Tree

News: Palmyra palm trees in Odisha are playing a significant ecological and social role. They are helping reduce lightning-related deaths, as the tall trees act as natural lightning conductors, diverting strikes away from human settlements.

About Palmyra Palm Tree (Borassus flabellifer)

- The Palmyra palm tree is commonly **known as the sugar palm, toddy palm, or fan palm.**
- It is native to **tropical Africa but has been widely cultivated and naturalized across India.**
- It is also the state tree of Tamil Nadu
- In India, it is often planted as a windbreak on plains to protect crops and settlements.
- The Palmyra palm **exhibits adaptability to a wide variety of soil types,** including sandy soil, red soil, black soil, and river alluvium.
- It can also **thrive in arid and wasteland conditions,** making it suitable for cultivation in marginal areas.
- The tree is **well-suited to semi-arid regions with an annual rainfall of less than 750 mm.**
- It can successfully **grow at altitudes ranging from sea level up to 800 meters.**
- **Uses**– Every part of the tree serves a purpose—whether for housing, medicine, shade, or food—making it one of the most versatile and valuable trees in India.

Agni-5 Ballistic Missile

News: India has successfully test-fired its intermediate-range ballistic missile Agni-5 from the Integrated Test Range at Chandipur, Odisha.

About Agni-5 Ballistic Missile

Source – Tribune

- It is a **land based nuclear-capable long-range intercontinental ballistic missile (ICBM)** with a range of **5000 km.**

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- It is the **most advanced** missile in the **Agni series**, which forms the backbone of India's **land-based nuclear deterrent.**
- Developed by: Defence Research and Development Organisation (DRDO)
- **Key features**
  - **Warheads:** The missile can carry a nuclear warhead of up to 1.5 tones.
  - **Materials used:** It is built with **lightweight composite materials**, which improves its efficiency and reliability.
  - **Propulsion:** The missile uses a **three-stage, solid-fuel propulsion system**.
  - **Launching platform:** It is launched from a **canisterized platform**, which allows for rapid deployment, easier storage, and enhanced mobility.
  - **Technology:** It is equipped with **Multiple Independently Targetable Re-entry Vehicle (MIRV)** technology, which would **allow a single missile to deliver multiple warheads** at different targets, dramatically enhancing its strategic effectiveness.
    - For pinpoint accuracy, it uses a **ring laser gyroscope-based inertial navigation system (RLG-INS)** and a **micro-inertial navigation system (MINGS),** supported by **satellite navigation** systems like India's **NavIC.**

Adi Karmayogi Abhiyan

News: The Ministry of Tribal Affairs has officially launched the Adi Karmayogi Abhiyan, envisaged as the world's largest tribal grassroots leadership programme.

About Adi Karmayogi Abhiyan

Source – MoTA

- The Adi Karmayogi Abhiyan is a **national movement** to build a **decentralized tribal leadership** and governance ecosystem.
- **Nodal Ministry:** Ministry of Tribal Affairs
- **Aim:** It is aimed at **empowering tribal communities**, strengthening **responsive governance**, and creating **local leadership opportunities** across the country.
- This initiative forms a key part of the **Janjatiya Gaurav Varsh**.
- **Objectives of the Adi Karmayogi Abhiyan:**
  - Promote **responsive, people-centric governance** at village and community levels.
  - Conduct **multi-departmental Governance Lab Workshops/Process Labs** from state to district, block, and village levels, for capacity building trainers.
  - **Co- creation of development plans**, where tribal communities and government officers jointly formulate the **"1 Lakh Tribal Villages-Vision 2030",** including detailed action plans and investment strategies.

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- o Build a **network of 20 lakh change leaders** across 550 districts and 30 States/UTs to implement grassroots development initiatives.
- **Outcomes of the Abhiyan:**
  - o **Adi Sewa Kendra:** Proposed **in all tribal-dominated villages**, where government officers and community members dedicate 1–2 hours fortnightly as **'Adi Sewa Samay'** to collaboratively address local issues, mentor youth, and support governance initiatives.
  - o **Governance Lab Workshops:** Structured process labs from state to village levels, engaging multiple departments to **co-create solutions** for tribal development.
  - o **Tribal Village Action Plan:** Villagers and officers will **co-create the Tribal Village Vision 2030,** aligned with national and international commitments towards sustainable development goals and inclusive development.
  - o Saturation of **government schemes** and interventions.
  - o **Call for Volunteers:**
    - o **Adi Sahyogi:** Teachers, doctors, and professionals who mentor and mobilize communities.
    - o **Adi Saathi:** SHGs, NRLM members, tribal elders, Youth and local leaders supporting implementation and outreach.
  - o **Community Leadership Training:** Capacity-building programs for tribal youth, women, and community leaders on governance, problem-solving, and social mobilization.
- **Participation and Outreach:** The Abhiyan will **reach over 1 lakh tribal-dominated villages**, mobilizing **20 lakh change leaders** across 550 districts and 30 States/UTs.
  - o It builds upon the successful implementation of **flagship government schemes**, including:
    - o Dharti Aaba Janjatiya Gram Utkarsh Abhiyan
    - o Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN)
    - o National Sickle Cell Anaemia Elimination Mission

Promotion and Regulation of Online Gaming Bill 2025

News: The Union government has taken a decisive step to regulate India's fast-growing online gaming sector with the introduction of the Promotion and Regulation of Online Gaming Bill, 2025.

About Promotion and Regulation of Online Gaming Bill 2025

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Source – ET Now

- The Bill seeks to **promote e-sports and socially beneficial games** while imposing a **complete ban on money-based online games**.
- **Nodal Ministry:** Electronics and Information Technology
- **Objectives**
  - **Encourage Positive Gaming:** Promote e-sports and safe social or educational games.
  - **Ban Risky Money Games:** Stop online gambling, betting, and real money games that can cause addiction or financial loss.
  - **Protect Citizens and Security:** Safeguard users, especially youth, from fraud, money laundering, and other online risks.
  - **Support Innovation:** Provide rules and guidelines to grow India's gaming industry responsibly.
- **Key features of Bill**
  - **Definition:** An **online money game** is defined as an online game that **involves a user paying money** or **other stakes** in **expectation of receiving monetary** or other enrichment.
    - This is **irrespective** of whether the game is based on **skill, chance, or both**.
    - **Other stakes** include **credits, coins, and tokens** equivalent or convertible to money.
  - **Prohibition on online money games:** The Bill **prohibits offering or aiding online money games** and related services.
  - **Banning of advertisement:** The Bill also **prohibits advertising**, and facilitating financial transactions for such games.
    - It empowers the **central government to block any information** related to online money gaming services from public access.
  - **Promotion of e-sports and online social games:** The Bill empowers the central government to take steps for **recognition and development of e-sports and online social games.**
    - **Definition of E-sport**: An online game that –
      - is played as part of multi-sports events,
      - is recognized under the National Sports Governance Act, 2025,

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- has outcome determined solely by factors such as physical dexterity, mental agility, strategic thinking, or similar skills, and
- involves organised competitive events conducted in multiplayer format and governed by pre-defined rules.
  - **Creation of a National Regulator**: A **National Online Gaming Authority** will be set up to register and categorize online games, address grievances, and ensure compliance.
    - The body will also have the **power to recommend blocking non-compliant platforms.**
    - An estimated **₹50 crore** has been earmarked for its initial setup.
  - **Heavy Penalties for Violations**: The legislation prescribes stringent punishments:
    - **Operating or facilitating money-based games:** up to three years in jail and a fine of ₹1 crore.
    - **Advertising banned games:** up to two years in jail and a fine of ₹50 lakh.
    - **Financial facilitation:** punishable with penalties similar to operators. Repeat offences can attract fines up to ₹2 crore and imprisonment of up to five years.
    - Most offences under the Bill will be **cognizable and non-bailable**, giving enforcement agencies wide-ranging powers to search, seize, and act against violators without warrant.

Globally Important Agricultural Heritage Systems (GIAHS)

News– According to the Food and Agriculture Organization (FAO), India currently hosts three Globally Important Agricultural Heritage Systems (GIAHS).

About Globally Important Agricultural Heritage Systems (GIAHS)

- They are dynamic, community-managed farming systems that combine agrobiodiversity, traditional knowledge, and cultural heritage to promote sustainable livelihoods and ensure food security.
- Till date, the *FAO has recognized 99 such systems across 29 countries*.
- Recent additions to the list include a mountain *agropastoral system in Tajikistan*, marking *Central Asia's first GIAHS site*.
  - Other new inclusions are a pine tree agroforestry system and a traditional bamboo-fishery system in South Korea, and an agrosilvopastoral system in Portugal.

India's Globally Important Agricultural Heritage Systems (GIAHS)

- **Koraput region, Odisha**: This region is renowned for highland subsistence paddy cultivation and a rich variety of indigenous rice strains. It also preserves medicinal plants that are linked to tribal knowledge systems.
- **Kuttanad farming system, Kerala**: This unique below-sea-level agriculture model integrates paddy fields, coconut gardens, inland fisheries, and shell collection within a wetland ecosystem.
- **Saffron Heritage of Kashmir**: It represents a rich agro-pastoral system characterized by traditional saffron cultivation, intercropping, and the use of organic farming practices, all of which contribute to maintaining local biodiversity and soil health.

Lipulekh Pass

News: Nepal has objected to India and China announcing the reopening of border trade through the Lipulekh Pass, citing its claims over the region.

About Lipulekh Pass

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Source – IE

- It is a **high-altitude Himalayan mountain pass** situated in the **Kumaon region** of **Pithoragarh district of Uttarakhand**, India.
- **Height:** The pass lies at approximately **5,334 meters (17,500 feet) above sea level**, making it one of the highest and most challenging passes in the Indian Himalayas.
- **Terrain:** The region around Lipulekh is characterized by **rugged, high mountains, glaciated valleys, and alpine meadows.**
- **River basin:** It forms part of the **Kali River basin**.
  - The Kali River originates from **nearby Kali glacier**.
- **Strategic importance:** It lies near the **trijunction of India, Nepal, and Tibet (China).**
- **Gateway:** It serves as a **crucial gateway between India and the Tibet Autonomous Region** of China, facilitating **not only historical** but also present-day **trade and pilgrimage routes**.
  - It is a key part of the **Kailash Mansarovar Yatra**, the annual pilgrimage to **Mount Kailash and Lake Mansarovar for Hindus and Buddhists.**
- **Ancient Trade Route:** For centuries, the pass has been part of the **traditional trade route** connecting the Indian subcontinent with the Tibetan plateau, especially used by traders and pilgrims.
- **In News:** The Lipulekh Pass dispute is a border issue between **India and Nepal** over the ownership of the **Kalapani-Lipulekh-Limpiyadhura area**, caused by **differing interpretations** of the boundary set by the **1816 Treaty of Sugauli.**

India's first 'Living Lab'

News: India's first disaster-focused 'Living Lab' is set up in Kanichar Gram Panchayat, Kannur district, Kerala.
About India's first 'Living Lab'

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Source – India Today

- The 'living lab' is a pioneering approach that blends real-time data with hands-on training.
- The living lab approach is an ecosystem that integrates real-world settings with research and innovation to create and test solutions.
- Origin: It was first developed in the Netherlands.
- Aim: The initiative aims to equip residents with the knowledge and skills to respond effectively to natural hazards, making the community more resilient.
- Features
  - The initiative is marked by the involvement of several stakeholders including government, experts, private agencies and civic society, to find real-world solutions.
  - Under this initiative, the local weather forecasting and early alert systems using sensor technology have been integrated to provide residents with timely warnings about landslides and adverse weather conditions.
  - People who check the data share the information with others through ward-level WhatsApp groups.
  - The initiative promotes a proactive stance by converting villagers into informed first responders and advocates of safety.

Made in India Label Scheme

News: In a step towards unifying and highlighting the nation's manufacturing prowess, the government has come out with a 'Made in India Label Scheme'.

About Made in India Label Scheme

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Source – DD News

- It is an initiative that lends **support to the manufacturing industry** by **building a brand reputation, stronger identity and wider reach** for products **made in India**.
- **Nodal agencies:** The initiative is being led by the **Department for Promotion of Industry and Internal Trade (DPIIT).**
  - **Advisors:** The **Quality Council of India** and the **India Brand Equity Foundation** are actively collaborating with DPIIT in an **advisory capacity**.
- **Aim:** Made in India Label scheme aims to **strengthen the reputation of products manufactured in India.**
- **Features:**
  - This is a **voluntary certification scheme** to help manufacturers demonstrate that their products are manufactured in India and are of good quality.
  - The **label displays a QR code** and **a logo** with **information** about **location** of manufacturing, validity of the label and other product-specific information.
- **Objectives of the Scheme:** The **objectives** of the scheme serve as **guiding pillars** to strengthen **domestic industries, boost consumer confidence, and enhance India's global competitiveness**.
  - The scheme **provides identity to the product based on its origin**
  - It develops a **mechanism to qualify** and **brand the products** of Indian origin
  - It also supports **recognizing** the products of Indian origin **in domestic as well as international market**
  - The 'Made in India' Label **strengthens the positioning** of the product in the competitive market.
- **Eligibility Criteria**
  - **Manufacturers and producers** who manufacture or assemble their products **wholly** or **substantially** in India.
  - **Each product has a specific quality and manufacturing criteria** set by relevant regulatory bodies which need to be met before obtaining the permission.
- **Focus on sectors:** The scheme focuses on targeting the Indian **manufacturing sector**, which also includes **large-scale enterprises and MSMEs (Micro, Small and Medium Enterprises).**
  - Entrepreneurs engaged in **farming, agriculture, fishing, aquaculture, horticulture and allied activities** will also be encouraged to join the scheme.
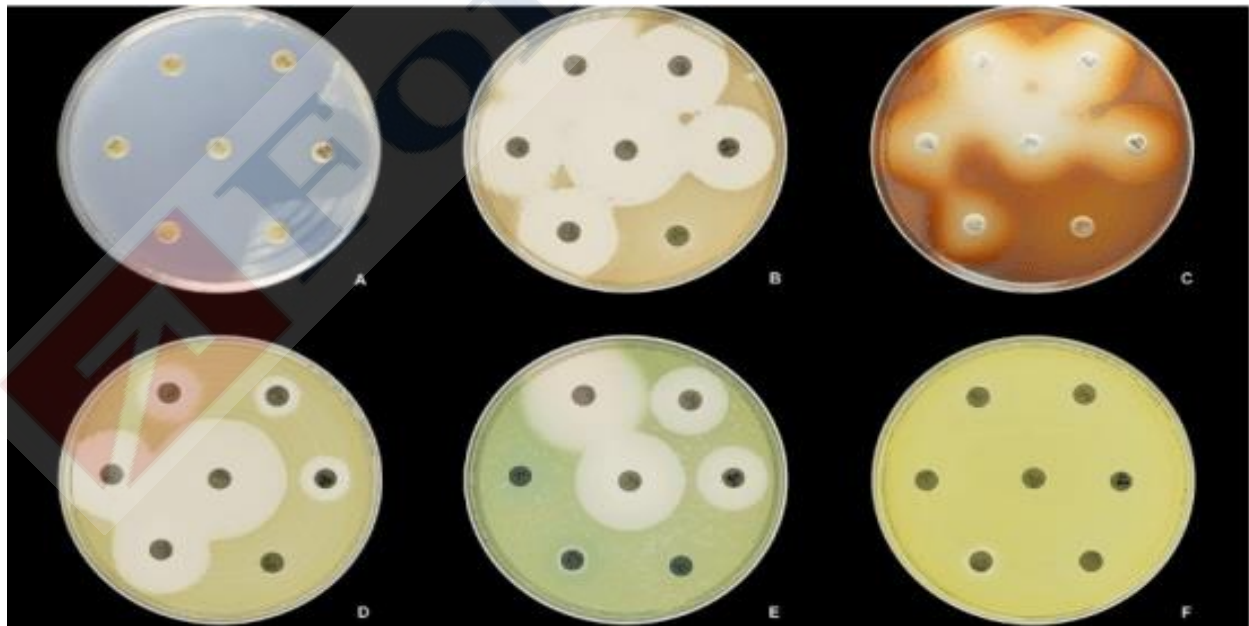- **Scheme's Roadmap**

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Source – PIB

○ The roadmap lays out a **clear path for implementing** the Made in India Label Scheme, from **defining quality benchmarks to integrating digital verification through QR codes**.

○ It **outlines phased actions** to ensure smooth adoption across industries, building a strong and recognizable national brand.

○ For the success of the scheme, the **government proposed ₹995 crores for three years** and anticipates that the scheme will be **self-sustaining in the future years.**

Pseudomonas Aeruginosa

News– Recently, scientists from the Helmholtz Centre for Infection Research, Germany, discovered that a gene in the bacterium Pseudomonas aeruginosa exhibits bistable expression.

Source- The Hindu

About Pseudomonas Aeruginosa

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- It is a *gram-negative, aerobic, non-spore forming, rod-shaped bacterium.*
- It is commonly *found in the environment, particularly freshwater*.
- It is capable of causing a variety of infections in both *immunocompetent and immunocompromised hosts*
- It is a frequent cause of hospital-acquired infections, including ventilator-associated pneumonia and catheter-related urinary tract infections.
- It also causes several community-acquired infections such as folliculitis, osteomyelitis (from puncture wounds), pneumonia, and otitis externa.
- It is also a *major cause of keratitis (eye infection).*

Bistable Expression in Bacteria
- Two bacteria with the same genetic makeup can still behave differently, like siblings with different personalities. One may keep a gene strongly "on," while another keeps it weak or "off." These patterns are inherited by offspring, a phenomenon called bistability.
- Bistability works as a survival strategy, helping bacteria adapt to changing environments.

Didayi Tribe

News: Champa Raspeda, hailing from Odisha's Malkangiri district, has created history by becoming the first individual from the Didayi community to qualify in NEET 2025.

About Didayi Tribe
- It is an indigenous community of **Malkangiri district, Odisha**.
- They are recognized as one of the **13 Particularly Vulnerable Tribal Groups (PVTGs)** in Odisha.
- They belong to the **Proto-Australoid racial stock**.
- Their language belongs to the **Austroasiatic language family**.
- Society is **patriarchal**, with men holding primary authority in family and community matters.
- Their **religion is animistic**, centered on nature worship and reverence for the natural world.
- Settlements are in **small, remote forest villages**, mostly in the **Eastern Ghats hills**.
- Governance within villages is managed by a **traditional council of elders** that resolves disputes.
- **Housing style**: thatched huts made with **mud walls and bamboo**.
- **Livelihood practices** include: Agriculture (shifting cultivation and small farming), Hunting and gathering and Fishing in local streams and rivers.

Dal Lake

News: The **three-day "Khelo India Water Sports Festival"** has begun at the **iconic Dal Lake in Srinagar**, Jammu & Kashmir.

About Dal Lake

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Source: srinagar.nic.in

- **Location : It is** mid-altitude urban lake located in **Srinagar, Jammu and Kashmir**.
  - It is surrounded by the **Pir Panjal mountains**.
- It is known as the **"Jewel in the crown of Kashmir"** or **"Srinagar's Jewel"**.
- It is also called the **"Lake of Flowers"**, and among the **world's largest natural lakes**.
- The shoreline features a **boulevard lined with Mughal-era gardens, parks, houseboats, and hotels**.
- It is divided into **four basins** by causeways: **Gagribal, Lokut Dal** (with **Rup Lank/Char Chinari island**), **Bod Dal** (with **Sona Lank island**) and **Nagin** (sometimes considered a separate lake).
- It is famous for its **floating market**, where vendors sell products from traditional wooden boats (**Shikaras**).
- The lake is an important source for **commercial** operations in fishing and water plant harvesting.

About Khelo India Water Sports Festival

Figure 34.Source: Akashwani

- **Organisers**: Conducted jointly by the **Sports Authority of India (SAI)** and the **J&K Sports Council**.
- It is part of the government's **'Khelo Bharat' policy**.
- **Objectives**:
  - Promote **grassroots sports**.
  - Generate **livelihood opportunities**.
  - Rejuvenate **local infrastructure**.
- **Unique Features**:
  - First **consolidated open-age category championship**.
  - Includes all **14 kayaking and canoeing events** and **10 rowing events** – all of which are **Olympic disciplines**.

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Indian Council of Social Science Research (ICSSR)

News: The Indian Council of Social Science Research (ICSSR) has sent a showcause notice to the Centre for the Study of Developing Societies (CSDS), asking it to explain why its grants-in-aid should not be withdrawn.

About Indian Council of Social Science Research (ICSSR)

Figure 35.Source – ICSSR

- It is the **national body established to encourage, promote and fund social science research** in the country.
- **Establishment:** It was established in the year of **1969** by the Government of India on recommendations of the **Professor V.K.R.V. Rao committee**.
- **Nodal Ministry:** It operates under the **Ministry of Education**.
- **Objectives and mandates:**
  - Review the progress of social science research and give advice to its users;
  - Sponsor social science research programmes and projects
  - Administer grants to institutions and individuals for research in social sciences
  - Institute and administer scholarships and fellowships for research in social sciences
  - Indicate areas in which social science research is to be promoted
  - Give financial support to institutions, associations, and journals engaged in social science research
  - Arrange for technical training in research methodology
  - Provide guidance for research
  - Co-ordinate research activities and encourage progrmmes for interdisciplinary research
  - Develop and support centers for documentation services and supply of data;
  - Organize, sponsor, and finance seminars, workshops and study groups
  - Undertake publication and assist publication of journals and books in social sciences
  - Advise the Government of India on all matters pertaining to social science research
- **Organisational structure**
  - **Council:** The ICSSR's **highest decision-making** body is known as the **Council**.
    - It has **26 members**, which includes the **ICSSR Chairman** and the **Member-Secretary**, 17 Social Scientists (Non-Ex-Officio members), one Co-opted member and six Ex-officio members representing the Government of India.
  - The **Member Secretary** is the **Chief Executive Officer** and **heads the ICSSR Secretariat**.
    - The **ICSSR Secretariat** consisting of **Directors, Deputy Directors, Assistant Directors and other officials.**
  - The Council has **three standing committees**, namely the Research Committee (RC), Research Institutes Committee (RIC) and Planning and Administration Committee (PAC).
- **NASSDOC: Documentation center** of ICSSR – **National Social Science Documentation Centre (NASSDOC) –** provides **library and information support services** to researchers in social sciences.

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○ ICSSR has developed **ICSSR Data Service** to serve as a national data service for promoting powerful research environment through sharing and reuse of data among social science community in India.

Kalai-II Hydroelectric Project

News: The Arunachal Pradesh State Pollution Control Board (APSPCB) conducted an environmental public hearing for the proposed 1200 MW Kalai-II Hydro Electric Project in Anjaw district, being developed by THDC India Limited.

About Kalai-II Hydroelectric Project

Source – India Today

- It is a **1,200 MW hydro power**
- **Type:** It is a **run-of-river with pondage project**.
- **River:** It is planned at the **Lohit river basin** in the **Anjaw district of Arunachal Pradesh**.
- **Project developer:** Tehri Hydro Development Corporation (**THDC**), a subsidiary of the Indian power generation company **NTPC**
- **Reservoir:** The hydro reservoir capacity is planned to be 318.8 million cubic meter.
  ○ The gross head of the project will be **125m**.
- **Turbines:** The hydro power project consists of **6 turbines, each with 190MW nameplate.**

Major Ongoing Hydroelectric Projects in India

1. **Subansiri Lower Hydroelectric Project (2000 MW)**
   ○ **Location:** On **Subansiri River**, border of **Arunachal Pradesh and Assam**.
   ○ **Significance**: India's **largest under-construction hydroelectric**
   ○ **Developer: NHPC**
2. **Tehri Pumped Storage Plant (1000 MW)**
   ○ **Location: Uttarakhand** (Tehri Dam complex) on the **Bhagirathi River**.
   ○ **Significance**: Provides pumped storage facility for peak demand management.
   ○ **Developer: THDC** India Ltd.
3. **Ratle Hydroelectric Project (850 MW)**
   ○ **Location: Chenab River**, **Jammu & Kashmir.**
   ○ **Developer**: Joint venture of **NHPC & JKSPDC**.
   ○ **Importance:** One of the **largest ongoing projects in J&K**; critical for regional power supply.
4. **Pakal Dul Hydroelectric Project (Jammu & Kashmir):**

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- ○ Capacity: 1,000 MW
- ○ **Developed** by **Chenab Valley Power Projects** Ltd; part of India's northern hydropower expansion; under construction.

Forest Rights Act, 2006

News: Tribal representative body complains that the Andaman and Nicobar administration gave a 'false' report stating that tribal people's rights under FRA were identified and settled.
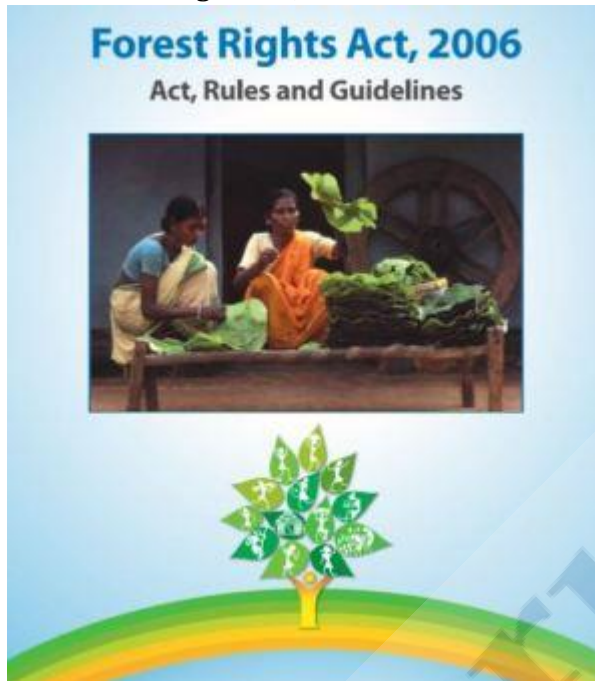
About Forest Rights Act, 2006

Figure 36.Source – MoTA

- ● The Forest Rights Act, 2006 is also known as the **Schedule Tribes and Other Traditional Forest Dwellers Act, 2006.**
- ● It is a key legislation in India that **legally recognizes** the **rights of forest-dwelling Scheduled Tribes (STs) and Other Traditional Forest Dwellers (OTFDs)** over land and forest resources they have been dependent on for **generations**.
- ● **Nodal Ministry:** Ministry of Tribal Affairs
- ● **Aim:** To **recognize** and **vest forest rights** in forest-dwelling Scheduled Tribes (FDSTs) and Other Traditional Forest Dwellers (OTFDs).
- ● **Objectives:**
  - ○ Redress historical mistakes to tribal and traditional forest dwellers.
  - ○ Ensure their rights to livelihood, habitation, and access to forest resources.
  - ○ Promote ecological sustainability by enlisting these communities in protection, conservation, and management of forests.
- ● **Key features:**
  - ○ **Recognition of rights:** The Act recognizes and vests forest rights and occupation over forest land in Forest Dwelling Scheduled Tribes (FDST) and Other Traditional Forest Dwellers (OTFD) who have been residing in such forests for generations but were not officially acknowledged due to colonial forest policies.
  - ○ **Types of rights granted:**
    - ○ **Title rights:** Right to ownership of forest land being cultivated by tribals or forest dwellers, up to a maximum of 4 hectares (no new lands given).
    - ○ **Use rights:** Right to use and collect minor forest produce (eg. fodder, fuel, bamboo), grazing areas, fish, and water bodies.
    - ○ **Relief and development rights:** Protection against eviction and rights to rehabilitation and basic amenities.
    - ○ **Community and management rights:** Right to protect, regenerate, or manage any community forest resource and to safeguard their traditions and habitat.

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- ○ **Gram Sabha's role:** The Gram Sabha (village assembly) is the nodal agency to initiate, receive, and verify claims, and its decisions move up through committees at the sub-division and district level.
- ○ **Community empowerment:** The law empowers forest dwellers to **access, use, and manage forest resources** and protects them from **unlawful eviction.**
  - ○ It allows for **basic infrastructure facilities** in forest areas as recommended by Gram Sabhas.

Integrated Air Defence Weapon System (IADWS)

News: The ministry of Defence (MoD) announced that the Defence Research and Development Organisation (DRDO) has successfully conducted the first flight-tests of an Integrated Air Defence Weapon System (IADWS).

About Integrated Air Defence Weapon System (IADWS)

- It is a **multi-layered air defence system**, which includes **three components –**
  a. Quick Reaction Surface to Air Missiles (**QRSAM**)
  b. The advanced Very Short Range Air Defence System (**VSHORADS**) missiles
  c. A high-power laser-based Directed Energy Weapon (**DEW**).
- **Developed by**

Figure 37.Source – HT

Components	Developed by
QRSAM	DRDO
VSHORADS	Research Centre Imarat (**RCI**), a Hyderabad-based facility of the DRDO
DEW	Centre for High Energy Systems and Sciences (**CHESS**), a Hyderabad-based facility of the DRDO
Command and control	The **integrated operation** of all these weapon system components is controlled by a **Centralized Command and Control Centre**, developed by the **Defence Research and Development Laboratory, Hyderabad.**

Components of IADWS

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- ○ **QRSAM:** It is a short-range Surface to Air Missile (SAM) system.
  - ○ It is primarily designed to provide a protective shield to moving armoured columns of the Army from enemy aerial attacks.
  - ○ The entire weapon system is configured on highly mobile platforms.
  - ○ It has search and track capability and can fire on short halts.
  - ○ **Range:** The system has an operation range of three to 30 kilometers.
  - ○ **Components:** The QRSAM weapon ensemble consists of **a fully automated command and control system, two radars — Active Array Battery Surveillance Radar and Active Array Battery Multifunction Radar —** and **one launcher**.
  - ○ Both the **radars** have a **360-degree coverage** with '**search on move**' and '**track on move**'
- ○ **VSHORADS:** It is a **fourth-generation**, technically advanced **miniaturised Man Portable Air Defence System (MANPAD).**
  - ○ This missile system has the **capability to meet the needs of all the three branches** of the Armed Forces – **Army, Navy and Air Force**.
  - ○ **Range and targets:** The weapon system can neutralize targets between the **range of 300 meters and six kilometers**, including **drones and other classes of aerial threats**.
- ○ **DEW:** The **land version** of the **Vehicle mounted Laser DEW MK-II (A) can** defeat **fixed wing UAV and swarm drones**, causing structural damage and **disabling their surveillance sensors**.
  - ○ **India** has joined the **exclusive club of global powers** who possess such a system.
  - ○ It has a **range of less than three kilometers**.

Strategic significance

- ○ **Neutralizing the threats:** They are **meant to neutralize aerial threats** within the **range of 30 kilometers ranging** from **high speed to low speed**, and **fixed wing to rotary wing type**.
- ○ It can be looked at as a **stepping stone towards Mission Sudarshan Chakra**, a comprehensive defence shield.

ISRO's heaviest rocket Lunar Module Launch Vehicle (LMLV)

News: Indian Space Research Organisation (ISRO) says that the space agency was in the process of building its heaviest rocket ever, and had named it **Lunar Module Launch Vehicle (LMLV).**
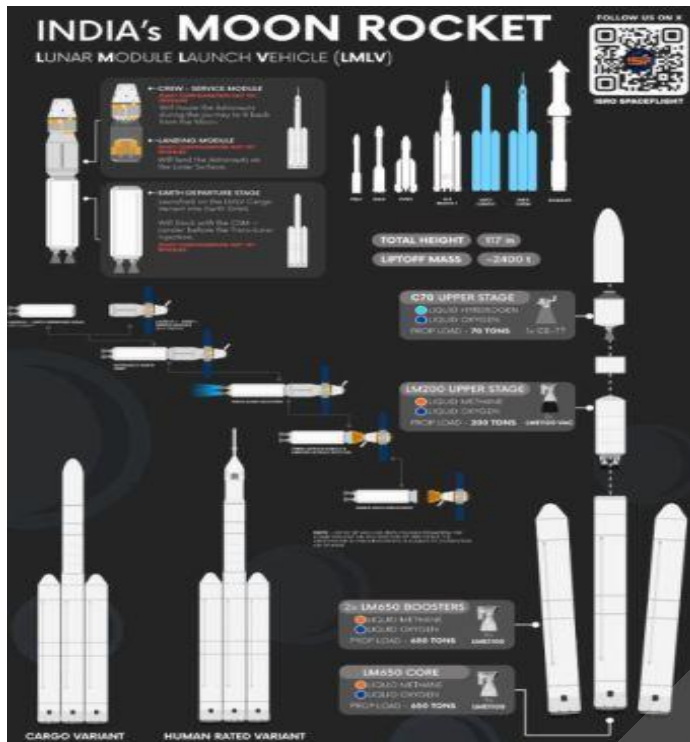**ISRO's heaviest rocket Lunar Module Launch Vehicle (LMLV)**

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Figure 38.Source – ISRO SpaceFlight

- It is India's **forthcoming super-heavy-lift rocket** currently under development by **the Indian Space Research Organisation (ISRO).**
- The LMLV would be **ready by 2035.**
- **Purpose:** It would be used for the **lunar missions**, including the **first human mission to the Moon**, planned by **2040**.
- **Design**
  - This new rocket would be as **tall as a 40-storey building**.
  - It will be a **three-stage rocket**, with the **first two** stages using **liquid propellent** and the **third stage** using a **cryogenic propellant**.
  - The **first stage core**, along with **two strap-on motors**, will have **three sets of nine engines** or **27 in total.**
  - Placed side-by-side, even the **strap-on boosters of the LMLV are taller** than the **entire height** of the **current LVM3**.
  - The **LVM-3 carried Chandrayaan-3 to the Moon** and since then has been human-rated for use in the **Gaganyaan mission**, India's human spaceflight programme. But will be **replaced by the LMLV now**.
  - **Payload Capacity:** The new rocket would be capable of carrying about **27 tonnes to the Moon** and **80 tonnes to low Earth orbits**, which are between **200 and 2,000 km** from the planet's surface.

Integrated Air Drop Test (IADT-1)

News: ISRO successfully carried out its first Integrated Air Drop Test (IADT-1), a critical milestone in preparations for the country's maiden human spaceflight programme, **Gaganyaan**.

About Integrated Air Drop Test (IADT-1)

Figure 39. Source – ISRO

- It is a **specialized trial** to ensure the **parachute system designed for the Gaganyaan crew module performs reliably** in real-world conditions.
- The **crew module** will be responsible for **safely bringing astronauts back to earth** after re-entry.
- **Conducted by:** This test is a joint effort of **ISRO, Indian Air Force, DRDO, Indian Navy and Indian Coast Guard.**
- This test is part of **system level qualification of parachute-based deceleration**

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system, in which a **simulated Crew Module**, encompassing the deceleration system is **dropped using a helicopter**.

- **Highlights of test**
    - The Test was designed **to evaluate full suite of parachutes** that will **slow down and stabilize** the crew module during **re-entry and splashdown** of the actual human spaceflight mission.
    - This included **two drogue parachutes** which are conical or **funnel-shaped devices** with open ends, for initial slowing down, **followed by pilot chutes** and **three main parachutes** to ensure safe descent.

Integrated Food Security Phase Classification (IPC)

News: Recently, a global hunger monitoring body Integrated Food Security Phase Classification (IPC) officially declared that famine is occurring in Gaza.

About Integrated Food Security Phase Classification (IPC)

- It is the main global system for assessing hunger crises.
- It is **independent organisation** but funded by Western countries.
- **19 humanitarian organisations and regional bodies oversee it and work** with **national governments** to analyse data.
- **Purpose: Sound the alarm** early to prevent famine and guide humanitarian response.
- **Data collection method:** IPC relies on **UN World Food Programme (WFP), o**ther **relief organisations** and g**overnment agencies**.
- **Preferred measurement of malnutrition: Children's weight and height and i**f not possible, **mid-upper arm circumference** is used.

How is Famine Determined?

- IPC classifies **acute food insecurity** on a **five-phase scale**. **Phase 5** is the highest: **Catastrophe** (individual household level). and **Famine** (wider area level).
- **Famine criteria**:
    - At least **20% of the population** face extreme food shortages.
    - **1 in 3 children** are acutely malnourished.
- At least **2 out of every 10,000 people die daily** from starvation, malnutrition, or related diseases.
- A **famine review committee** of up to 6 experts validates findings.
- IPC does not formally "declare" famine but provides **analysis for governments and agencies**.
- Even if an entire region is not in famine, IPC can still note **"famine conditions"** at household level.

SMILE Scheme

News: The central government has launched a 15-day Entrepreneurship Development Programme under the SMILE scheme to help transgender persons become self-reliant by providing economic empowerment.

About SMILE Scheme

- The **Support for Marginalized Individuals for Livelihood and Enterprise (SMILE)** is a **Central Sector Scheme** implemented by the **Ministry of Social Justice & Empowerment**.
- It functions as an umbrella programme that brings together two distinct sub-schemes:
    - **Comprehensive Rehabilitation for the Welfare of Transgender Persons**
    - **Comprehensive Rehabilitation of Persons Engaged in the Act of Begging**

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Together, these aim to provide holistic welfare and rehabilitation measures for both transgender individuals and those dependent on begging.

Key Features

- **Educational support**: Scholarships are offered to transgender students from Class IX up to post-graduation, ensuring they can pursue and complete their studies.
- **Skill and livelihood development**: Training opportunities are provided under the **PM-DAKSH scheme** to strengthen employability and self-reliance.
- **Medical assistance**: The scheme integrates with **PM-JAY** to provide a composite health package. This includes support for **gender-reaffirmation surgeries** at designated hospitals.
- **Shelter and care**: Under the initiative of **'Garima Greh'**, beneficiaries are provided food, clothing, medical support, skill training, and recreational facilities, ensuring dignity and social inclusion.
- **Legal and protection measures**: Every state will establish a **Transgender Protection Cell** to track offences, ensure proper investigation, and facilitate timely prosecution.
- **Information and accessibility**: A **National Portal and Helpline** has been set up to deliver information, guidance, and redressal services for transgender persons and those engaged in begging

X-Guard Fibre-Optic Towed Decoy (FOTD) System

News: During Operation Sindoor, the Indian Air Force (IAF) is believed to have successfully deployed the AI-enabled X-Guard Fibre-Optic Towed Decoy (FOTD) system, developed by Israel's Rafael.

About X-Guard Fibre-Optic Towed Decoy (FOTD) System

Source – Rafael

- It is a **state-of-the-art electronic warfare solution** to provide fighter **aircraft with protection against advanced radar-guided missile threats**.

Decoys

- They are specially designed systems or devices **used to mislead, distract, or confuse enemy surveillance, sensors, weapon systems, or decision-makers**.
- **Goal:** Their primary goal is to **protect real military assets** (such as tanks, aircraft, ships, or command centers) by **presenting convincing false targets or signals** that divert attention or fire away from genuine assets.

- **Developed by: Israel's Rafael Advanced Defense Systems** as part of their electronic warfare (EW) suite.
- **Features**

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- It is **lightweight (30 kg), retractable, and reusable**.
- It can be **deployed**, either when the **aircraft approaches a threatened area** or upon **detection of an imminent threat**, to **counter radar-guided air-to-air and surface-to-air missiles** during operational missions.
- **Working:** It **mimics** the **fighter aircraft's** (most optimally in Rafale) **Radar Cross-Section (RCS), doppler velocity**, and **spectral signature** across multiple radar bands.
- It can also **replicate** the fighter **aircraft's onboard electronic countermeasures**.
- It creates a **convincing illusion** for both human operators and tracking systems.
- Its **360-degree jamming signal capability** integrates seamlessly with the **Rafale's SPECTRA (Self-Protection Equipment Countering Threats to Rafale Aircraft) EW suite.**
    - While **SPECTRA** manages **threat detection**, **blocking, and onboard defensive measures**, the **X-Guard adds a trailing expendable layer**, jointly forming a **multi-tiered defensive shield**.

- **Benefits**
    - Increases aircraft survivability and mission success probability
    - Provides full sphere defense coverage
    - Fast deployment, low drag and lightweight; minimal limitation on aircraft maneuverability
    - Reusable; reeled-in after mission completion
    - Cost-effective; low Life Cycle Cost (LCC)
    - High reliability and safety operation during all flight phases; simple operation by pilot

Comparable systems

- **Leonardo UL's BriteCloud**: It is being deployed on Eurofighter Typhoons, Sweden's Gripen-Es, and certain F-16 variants.
- **AN/ALE-50/55 series from Raytheon/BAE Systems:** It is being used on the F/A-18E/F Super Hornet.

Vithalbhai Patel

News: The Delhi Legislative Assembly is hosting a two-day All India Speakers' Conference to commemorate the 100th anniversary of Vithalbhai Patel becoming the President of the Central Legislative Assembly under British rule.

About Vithalbhai Patel

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Figure 40. Source – SardarPatelTrust

- He was born on **September 27, 1873.**
- He was the **third of the five sons** of **Jhaverbhai** and mother **Ladba of Karamsad**.
- He **studied law in England**, and came back to **Bombay to practise**.
- **Political Career**:
  - He was elected to the **Bombay Legislative Council in 1912** and to the **Imperial Legislative Council in 1918.**
  - In **1924**, he was elected member of the **Central Legislative Assembly from Bombay city**.
  - **President:** He was the **first Indian to become the President** of the **Central Legislative Assembly**, Parliament's equivalent under British rule, on **August 22, 1925**.
  - He stayed the **president** of the Central Legislative Assembly for **two tenures**.
  - **Resignation:** He **resigned** as the President of the Assembly in **1930** to be fully involved in politics by joining the Congress Working Committee.
- **His role as President of Central Legislative Assembly**
  - **Parliament's security:** It was due to his efforts that the **Parliament's security (i.e. ward and watch system)** was **handed over to the Speaker**.
    - This system **continued till 2024**, when the **CISF** stepped into that role.
  - **Independent Parliament Secretariat:** He was able to set up an **independent Parliament Secretariat**, with the **officials** in it **reporting to none but the president**.
    - This was to ensure that the **staff advising and helping the president** were serving no other boss, and hence would be **fully independent**.
  - **Separate Legislative Assembly Department**
    - It was during his second term, a **separate Legislative Assembly Department** was created in the **portfolio of the Governor-General** but under the **de facto control of the President.**
- **Contribution in Freedom Struggle**
  - He was among those senior Congress leaders who **opposed Mahatma Gandhi's decision to suspend the Non-Cooperation Movement** against the British after the Chauri Chaura incident.
  - He, along with other **senior congress members** like Subhas Chandra Bose, Motilal Nehru, Chittaranjan Das, founded the **Swaraj Party in 1923.**
  - However, they **worked closely with the Congress** for the cause of India's freedom.
- **Death:** Vithalbhai died in **Geneva** on **October 22, 1933, of ill-health.**

Smart Intelligent Village Project

News: Maharashtra Chief Minister has announced the setting up of India's first "Smart and Intelligent Village" in Nagpur district.

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About Smart Intelligent Village Project

Figure 41. Source – IE

- It is a pioneering **rural development initiative** in India that **leverages advanced digital technologies** to transform everyday life in villages.
- It will provide the **requisite infrastructure, manpower, and basic facilities** for installation, including the GP office, school, anganwadi, water-well, and village lake.
- **Pilot project:** The Project is starting with a **pilot in Satnavri village, Nagpur district, Maharashtra**.

- **Smart Intelligent Village:**
  - A Smart Intelligent Village is envisaged as **representing a model of rural development** that uses **digital technologies, Internet of Things (IoT), Artificial Intelligence (AI)** and **seamless connectivity** to improve everyday living in India's villages.
- **Proposed proposed by:** The Project was proposed by the **Voice of Indian Communication Technology Enterprises (VoICE)**, a consortium of major Indian players in the telecom sector.
- **Implemented by:** It will be implemented by the **District Zilla Parishad and VoICE** with the participation of **Gram Panchayats and villagers.**
- **Working:** A **Central Network Management Control System (C-NOC) monitors** all devices in the Smart Intelligent Village, **tracks** their uptime and availability, and **instantly flags problems** to the right vendors for quick fixes.
  - This ensures **smooth functioning** of services and maximises their uptime.
- **Estimated cost:** It will cost **around Rs. 50 lakh** on average to build a smart, intelligent village.
- **Some of the Smart Interventions in a Smart Intelligent Village**
  - **Agriculture:** Smart agriculture **uses IoT sensors to monitor soil and crop conditions** in real time, helping farmers **save 25%-40% water**, cut the **costs of fertilisers** by 30%, detect **pests early, and increase yields** by up to 25%.
  - **Fisheries: Sensors** track the water **quality** in ponds, measuring **oxygen**, pH, temperature, etc., and alerts are sent to farmers in real time.
  - **Use of drones in farming:** Drones equipped with GPS and sensors spray fertilisers based on soil mapping, ensuring precise application and reducing the use of chemicals by 20%-30%, and lowering the environmental impact.
  - **Safety & convenience:** IoT-linked **CCTV cameras** and **drones monitor farms, assets, and public spaces** in real time, and AI is used to detect intrusions or crop damage.
  - **Drinking water:** An AI-powered system monitors drinking water **supply and quality** in real time, ensuring the supply of the mandated volume of 55 litres of water per capita per day.
  - **Healthcare:** Comprehensive rural healthcare in the village offers on-the-spot testing for more than 120 health parameters, from **blood and cardiac checks to cancer and TB screening,** with results available within minutes in certain cases.
  - **Education: Online** education in the village uses e-learning platforms, **Wi-Fi hotspots** at the Gram Panchayat offer **BharatNet** connectivity with speeds up to 100 Mbps for free.

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- **Security:** The village has a public protection and emergency system in which security staff can use handheld devices with push-to-talk communication.
- **Waste management:** A smart waste management system uses IoT-enabled bins and tracking tools to ensure the safe collection and disposal of garbage, and prevent harmful chemicals such as lead, mercury, and cadmium from polluting soil and water.

NASA CHAPEA Project

News: Recently, NASA has unveiled the second Crew Health and Performance Exploration Analog (CHAPEA) habitat to simulate year-long missions on the surface of Mars. It is scheduled to begin in late 2025 with four crew members

About NASA CHAPEA Project

- The **Crew Health and Performance Exploration Analog (CHAPEA)** is a **mission series designed to simulate year-long stays on the surface of Mars.**
- Each mission will place **four crew members inside a 1,700-square-foot habitat,** a **3D-printed habitat** designed to replicate Martian living conditions.
- **Habitat features**: The CHAPEA habitat is a **3D-printed, isolated structure at NASA's Johnson Space Centre in Houston, TX**.
    - It is built to **replicate a realistic Mars habitat for long-duration, exploration-class missions.**
    - Life inside the habitat is **designed to closely mirror what future crews might experience** while living on the Martian surface.
    - Its layout **includes distinct zones for both living and working,** supporting the day-to-day needs of the crew.
- During the simulation, **the crew will perform mock spacewalks and contribute data on various aspects of health and performance**, including both physical and behavioural factors.

Key Facts about Fiji

News: Recently, Prime Minister Narendra Modi announced that India will supply training and equipment to help strengthen Fiji's maritime security.
About Fiji

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- Fiji is a sovereign island nation in **Melanesia, Oceania.**
- It is officially known as the **Republic of Fiji.**
- It is well known for its **strategic location in the South Pacific as well as its rich natural resources.**
- It **lies in the South Pacific Ocean,** about **2,000 kilometers northeast of New Zealand.**
- It is surrounded by the **Koro Sea and forms part of Oceania's Pacific archipelago.**
- The capital city, **Suva, is located on the island of Viti Levu.**
- The country is an **archipelago consisting of more than 330 islands,** of which around 110 are permanently inhabited, along with approximately 500 smaller islets.
- The two largest islands, **Viti Levu and Vanua Levu,** are home to about 87 percent of the population.
- Fiji is of **volcanic origin, with geothermal activity** most notable on **Vanua Levu and Taveuni.**
- Its people are mainly of **Austronesian and Melanesian ancestry**, with significant Polynesian influences.
- The **official currency of Fiji is the Fijian Dollar (FJD).**

National Designated Authority (NDA)

News: Recently, the Ministry of Environment, Forest and Climate Change has announced a National Designated Authority (NDA) to enable a carbon emissions trading regime.

About National Designated Authority (NDA)

- The National Designated Authority (NDA) has been set up by the **Ministry of Environment, Forest and Climate Change (MoEFCC).**
- It is a **mandatory** requirement under the **Article 6 of 2015 Paris Agreement.**
  - The **Article 6 within the Paris Agreement** defines the contours under which such an **emissions trading regime, or a market,** can take shape.

Figure 42. Source – Montel

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- **Purpose:** The main purpose of the NDA is to enable a **carbon emissions trading regime** or carbon markets in India.
- **Composition**
  - It is a **21-member committee**.
  - **Head:** It is **headed by the Secretary** of the **Environment Ministry**.
  - **Members:** Its members include representatives from the Ministry of External Affairs, Ministry of Renewable Energy, NITI Aayog and Steel Ministry among others.
  - The **maximum** representation is from the **Environment Ministry**.
- **Functions of NDA**
  - The NDA is responsible for **recommending to the Union Government a list of activities** that can be considered for the trading of emission reduction units under **Article 6.**
  - It evaluates and approves projects that aim to reduce carbon emissions.
  - It ensures that projects are in line with **India's sustainability goals, country-specific criteria, and national priorities**.
  - It authorizes projects to use emission reduction units so that India can achieve its **Nationally Determined Contributions (NDCs)**.
- **Importance**
  - It will help India in **achieving its NDC commitments** i.e. reducing its **GDP's emission intensity by 45% by 2030 from 2005 levels**, achieving **50% cumulative electric power capacity from non-fossil fuel** sources by **2030**, and creating an **additional carbon sink of 2.5-3 billion tonnes** of carbon dioxide equivalent by 2030 through **afforestation**.

New World Screwworm

News: Recently, U.S.A. reported its **first human case** of New World Screwworm infestation, involving a person who had travelled to **El Salvador**.

About New World Screwworm

Figure 43.Source: 1010wcsi.com

- The New World Screwworm is a type of **blue-grey blowfly**.
- **Scientific name**: **Cochliomyia hominivorax**, which literally means **"man-eater."**
- **Naming:** These flies are called **screwworms** because their **larvae burrow into the tissue in a screw-like way.**
- **Distribution:** They are usually found in **South America and the Caribbean**.
- **Symptoms of infestation**: They include **wounds or sores that do not heal**, **bleeding from open sores**, **movement of larvae under the skin**, and a **foul odor** from the infected site.
  - In severe cases, the larvae can invade deeper tissues such as the brain, leading to **sepsis** and possibly death.
- **Life cycle and reproduction**

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- A single female screwworm can lay up to **300 eggs at a time**, and up to **3,000 eggs during her lifespan** of 10–30 days.
- The **eggs hatch into larvae** that feed on tissue, causing **infestation**.
- After feeding, the larvae fall to the ground, burrow into the soil, and emerge as adult flies.
- **Threat: Humans** are targeted **rarely**, but the risk increases when people travel to regions where the parasite is present.
  - The parasite poses a serious **threat to livestock**, especially cattle, because open wounds on animals provide easy entry points for infestation.
- **Control and eradication efforts**
  - The United States eradicated the New World Screwworm in **1966** using the **sterile insect technique**.
    - This method involved **rearing billions of sterile male flies** and **releasing** them into the wild.
    - When wild females mated with sterile males, they **did not produce** offspring, which helped reduce the population.

Arogyapacha and Kani Tribe

News: Kuttimathan Kani, the forest elder who revealed Arogyapacha, **died in poverty at 72 on August 23, 2025** near Kerala's Agasthyamalai forests.

About Arogyapacha

Figure 44. Source – DTE

- It is a small **rhizomatous perennial herb** (*Trichopus zeylanicus*),
- **Distribution: Sri Lanka, southern India, Malaysia**; near streams in lowland forests; around **1,000 m** in India
  - **In India:** It is endemic to the Western Ghats (Agasthya hills).
- **Importance:** It is revered as a **"miracle plant."** Used by the **Kani tribe to combat fatigue.**
  - **University of Kerala** decoded its genome, enabling work on secondary metabolism, genetic improvement, and comparative studies

About Kani Tribe

- The **Kani (Kanikarars)** live in the **Agasthyamalai hills** of the Western Ghats, Thiruvananthapuram, Kerala.
- They are traditionally **nomadic**; but now **settled**. (**not** notified as a **PVTG**)
- **Population: Around 25,000** living in **hamlets of 10–20 families** around forest areas.
- **Language: Tamil** and **Malayalam**.
- **Governance**
  - Each settlement has a hereditary council: **Moottukani** (chief), **Vilikani** (convenor), **Pilathi/Plathi** (physician-priest).

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- ○ The **Moottukani** combined the roles of **lawgiver, protector, judge**, and healer.
- ○ **Pilathi/Plathi** are believed to have special powers. They perform rituals, chant mantras, and use the **Kokara** Only **Pilathi/Plathi** may **preserve and transmit** traditional medical knowledge.
- **Livelihoods**
  - ○ **Handicrafts**, seasonal collection of **honey** and **beeswax**.
  - ○ Farming **tapioca, banana, millets**, and cash crops.
- **Key strength**
  - ○ Vast expertise **in medicinal plants – famous for using Arogyapacha.**

Exercise Bright Star 2025

News: Egypt will conduct the multilateral '**Exercise Bright Star**' from August 28 to September 10, 2025.
About Exercise Bright Star 2025

Figure 45. Source – DD News

- Exercise Bright Star is a **multilateral tri-service exercise** hosted by **Egypt** with the **United States since 1980.**
- It is held **biennially** and is among the largest in the region.
- **2023 edition**: The 2023 edition included **India** and multiple participating nations.
- **2025 edition**
  - ○ The **key activities** to be undertaken in the Exercise are –
  - ○ Live Firing by the three Services showcasing the operational capabilities of the Indian Army, Indian Navy and Indian Air Force
  - ○ Command Post Exercise to enhance joint planning, decision-making and operational coordination
  - ○ Short Training Exercises by all three Services focusing on varied aspects of modern warfare
  - ○ Subject Matter Expert Interactions on multiple domains of contemporary military operations.
- **Significance for India**
  - ○ Underscores commitment to regional peace, stability, and security.
  - ○ Enhances jointness, interoperability, and cooperation with friendly countries.

PM SVANidhi Scheme 2.0

News: The Union Cabinet approved the restructuring and extension of PM SVANidhi ("**PM SVANidhi Scheme 2.0**").
About PM SVANidhi Scheme 2.0

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Figure 46. Source – SMEStreet

●**Full Name:** Pradhan Mantri Street Vendor's AtmaNirbhar Nidhi 0

●**Extended version:** This scheme is an **extension and restructuring** of the original **PM SVANidhi scheme.**

○The original **PM SVANidhi Scheme** was **launched on 1 June 2020 to support street vendors during the COVID-19**

●**Implementing agencies:** Implementation of the scheme would be the **joint responsibility** of Ministry of Housing & Urban Affairs (**MoHUA**) and Department of Financial Services (**DFS**).
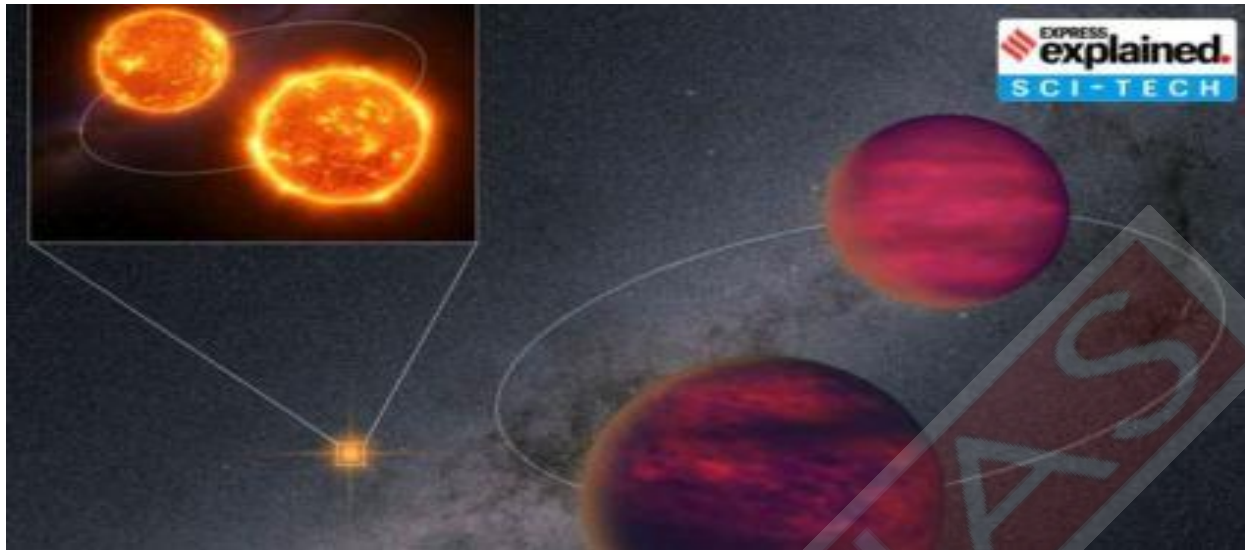
○ The DFS is responsible for facilitating access to loan/ credit cards through banks/financial institution and their ground level functionaries.

● **Key features of scheme**
  ○ **Total outlay:** The total outlay for the scheme is ₹7,332 crore.
  ○ **Timeline:** The lending period now runs till 31 March 2030.
  ○ **Targeted areas:** Its coverage to grow **beyond statutory towns to census towns and peri-urban areas** in a graded manner

● **Benefits of scheme**
  ○ **Enhanced loan structure:** The enhanced loan structure includes –
    ○ First tranche loans increased up to Rs 15,000 (from Rs 10,000)
    ○ Second tranche loans increased up to Rs. 25,000 (from Rs. 20,000)
    ○ Third tranche remains unchanged at Rs. 50,000.
  ○ **UPI-linked RuPay Credit Card:** It is provided to vendors who have repaid the 2nd tranche loan for quick access to emergency credit.
  ○ **Digital incentives**: The street vendors can avail cashback incentives up to Rs. 1,600 on making retail and wholesale transactions.
  ○ **Capacity building and standards**
    ○ Entrepreneurship, financial literacy, digital skills, and marketing through convergence.
    ○ Standard hygiene and food safety trainings for street food vendors with FSSAI.
● **National recognition:** The scheme was awarded the **PM's Award for Excellence in Public Administration (2023)** for Innovation (Central Level) and **Silver Award** for Excellence in Government Process Re-engineering for Digital Transformation (**2022**).

Quadruple Star System and Brown Dwarfs

News: Recently, Scientists have discovered a **rare quadruple star system** in the Milky Way galaxy.
About the Quadruple Star System

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Source – IE

- A **star system** in the Milky Way galaxy named as **UPM J1040–3551 AabBab,** is also called as a **rare quadruple star system** by the scientists.
  - It consists of **two cold brown dwarfs** orbiting **two young red dwarf stars**.
  - This specific configuration has **never been seen before** in astronomy.
  - The discovery was made by an international team of scientists led by **Professor Zenghua Zhang of Nanjing University**.
- **The system is important because**:
  - It helps scientists learn more about how **different types of stars and sub-stellar objects form together**.
  - **Multiple-star systems are common for massive stars**, but much less common for **smaller stars and brown dwarfs**.

About Brown Dwarfs

- These are celestial objects that are often called **"failed stars"**.
- **Features**
  - **Formation:** They form in the same way as stars, from **collapsing clouds of gas and dust**.
  - **Not true stars:** They **do not have enough mass** to **sustain hydrogen fusion**, which is the process that makes stars shine.
    - Because of this, they are **not true stars** and instead are **cooler and fainter**.
  - They share some features with **planets like Jupiter and Saturn**, especially in their atmospheres.
  - Brown dwarfs can be as massive as **70 times the mass of Jupiter**.
  - Brown dwarfs are **cold and faint**, so they emit **very little visible light**.
  - **Hard to detect:** Astronomers usually detect them when they are part of a system with **brighter stars**.
- **Importance**
  - Studying the brighter companion stars helps **scientists estimate the age, temperature, and composition** of the faint brown dwarfs.
  - The discovery of brown dwarfs in a **quadruple system** is especially useful, because all four objects likely formed from the **same material at the same time**, giving more reliable data.

Why Do Scientists Study Brown Dwarfs?

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- Studying brown dwarfs helps scientists understand the **conditions needed to form stars and planets**.
- They also help in estimating the **distribution of mass in the universe**.
- Since much of the universe's mass is invisible and exists as **dark matter**, brown dwarfs provide important clues to fill the gap in our understanding.
- Discovering systems like UPM J1040–3551 helps scientists see how **rare low-mass objects** (like brown dwarfs) can exist in stable multiple-star systems.

FIDE World Cup 2025

News: The FIDE World Cup 2025 will be hosted in **Goa, India**.
About FIDE World Cup 2025

Figure 47.Source – FIDE

- **Organizer**: The event is being organized by **FIDE (International Chess Federation)**.
- **Timing**: The tournament will take place from **October 30 to November 27, 2025**.
- **Number of Players:** A total of **206 chess players from more than 90 countries** will participate.

Tournament Format

- **Knockout format:** The competition will follow a knockout format, where a player must win to move forward.
  - If a player loses, they are **immediately eliminated** from the tournament.
- **Match format:**
  - The World Cup will be played over **eight rounds in total**.
  - Each match between two players will have **two classical games**.
  - If the score is **tied** after these games, there will be **tie-breaks on the third day**.
  - The **top 50 players** will receive a **bye** in the first round, meaning they start directly from round two.
  - The knockout system works like other sports World Cups, where o**nly winners advance** to the next round.

Candidates Tournament

- The World Cup is important because the **top three finishers** will qualify for the **2026 Candidates Tournament**.
- The Candidates Tournament decides who will challenge the reigning **World Chess Champion**.
- This makes the FIDE World Cup a **key step toward the World Championship title**.

Big names and Indian players

- The **reigning World Champion D Gukesh** from India will play in the event.
- **Viswanathan Anand**, a five-time World Champion and FIDE Deputy President, is also listed, though he is semi-retired.

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- Other famous Indian players include **Praggnanandhaa R, Arjun Erigaisi, Vidit Gujrathi, Nihal Sarin, and Aravindh Chithambaram** among others.
- In total, **21 Indian players** have qualified for the tournament.

Sectors worst hit by U.S. tariffs on India

News: U.S. 50% tariffs on Indian imports began on August 27, triggering demand drops in several labour-intensive export sectors.

Sectors Worst Hit by U.S. Tariffs on India

Figure 48. Source – TH

Mechanism of assessing impact: We can judge impacts by **three signals used together**:

1. **Dollar sales to the U.S.** (how big the market is),
2. **U.S. share in a sector's total exports** (how dependent it is),
3. **The new final tariff** (how steep the price penalty is).

- When **all three are high**, the impact is **severe**; when **U.S. share is small**, the impact is **limited**.

Sectors facing severe impact

- **Shrimp:** India exports $2.4 billion worth of shrimp to the U.S.
  - It is about one-third of total shrimp (32.4%).
  - Tariffs increase from 10% to 60%.
  - Andhra Pradesh is going to face a severe impact.
- **Diamonds, gold, jewellery:** It accounts for $10 billion of exports India's exports to the U.S.
  - It is about two-fifths (40%).
  - Final tariffs now, 52.1%.
  - Production cuts reported in hubs like Surat; its polishing industry employs ~12 lakh people.
- **Textiles & apparel:** India has $10.8 billion of exports to U.S; with apparel exports of $5.4 bn.
  - U.S. is **35%** of India's apparel exports.
  - Final tariffs now is 63.9%(**9%+ 50%).**
  - **This will impact Indian cities such as Tiruppur, Noida–Gurugram, Ludhiana, and Bengaluru.**
- **Carpets:** India exports $1.2 billion worth of carpets to the U.S.
  - India has **high dependence** on U.S. (~**58.6% of total carpet exports**).
  - Tariffs increase from **9% to 52.9%**.
- **Also hit:** handicrafts; leather and shoes; furniture and bedding; basmati rice, spices, tea, pulses, sesame.

Sectors with modest impact

- **Organic chemicals:** Indai has $2.7 billion worth of exports.
  - It is about one-eighth of total organic chemical export (13.2%).
  - Tariffs increase from **4% to 54%**.

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- **Metals (steel, aluminium, copper):** India has $4.7 billion worth of exports to U.S.
  - It is about one-sixth (17%).
  - Global Trade Research Initiative (GTRI) warns of risks to SMEs and jobs in stainless steel, aluminium casting, copper semi-finished goods.
- **Machinery & mechanical appliances:** India has $6.7 billion worth of exports.
  - It is about one-fifth (20%).
  - Demand expected to ease.

Government response

- Leaders reiterate 'swadeshi' and 'go vocal for local'.
- A multi-ministry plan (reported August 13) aims to ease short-term exporter pain.
- Medium-to-long term: diversify markets and use FTAs better;

Unified District Information System for Education Plus (UDISE+) and Report 2024-25

News: The UDISE+ Report 2024-25 shows a decline of 11.13 lakh students in 2024–25 over 2023–24, led by government and government-aided schools, while private schools recorded an increase.

About Unified District Information System for Education Plus (UDISE+)

Figure 49. Source – UDISE

- It is a **unified platform**, facilitating streamlined **data reporting** by **schools** providing formal as well as special education.
- **Nodal Ministry:** It is India's **national Educational Management Information System** under the **Department of School Education & Literacy, Ministry of Education**.
- It is the **official statistics platform** for **school education (from pre-primary to higher secondary levels)**.
- It lets **recognized schools** enter **data on infrastructure, facilities, students, and teachers** each **academic year** in near real time.
- **Evolution**
  - UDISE began in **2012–13**, integrating **DISE** (elementary) and **SEMIS** (secondary) into one of the largest MIS for school education.
  - **UDISE+** is the upgraded version.
  - It is fully online and gradually real-time.
  - From **2018–19**, data has been collected through UDISE+ software to improve quality, credibility, and analysis.
- **Coverage and Scale**

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- UDISE+ covers **all recognized schools**—formal and special—from **pre-primary to higher secondary.**
- **Working**
  - Schools use a **central online portal**. Each school has a **login ID and password**. Data is entered through the **Data Capture Format (DCF)** at the school level. UDISE+ thus serves as a single, standardised mechanism for compiling school-wise data across the country.

Highlights of UDISE+ Report 2024-25

- **Dropout Rates Decline:** Dropouts fell across levels-Preparatory at 2.3%, Middle at 3.5%, and Secondary at 8.2%.
- **Retention Improves:** Student retention rose to 98.9% at the Foundational level, 92.4% at Preparatory, 82.8% at Middle, and 47.2% at Secondary.
- **Enrolment Growth:** Gross Enrolment Ratio (GER) increased to 90.3% in Middle grades and 68.5% at Secondary level.
- **Smooth Transitions:** Progression rates between stages improved-98.6% from Foundational to Preparatory, 92.2% from Preparatory to Middle, and 86.6% from Middle to Secondary.
- **School Infrastructure Upgrades:**
  - Schools with computers rose to 64.7% from 57.2% last year.
  - Internet connectivity reached 63.5%, up from 53.9%.
  - Electricity access is available in 93.6% of schools; safe drinking water in 99.3%.
- **Sanitation facilities are nearly universal:** girls' toilets (97.3%), boys' toilets (96.2%), handwashing stations (95.9%).
- **Inclusivity:** Schools with ramps and handrails increased to 54.9%, enhancing accessibility for children with disabilities.
- **Single-Teacher and Zero-Enrolment Schools:** Single-teacher schools declined by 6%, while zero-enrolment schools dropped by 38%.
- **Gender Representation in Teaching:** Female teachers now constitute 54.2% of the workforce.

Index of Industrial Production (IIP)

News: Industrial growth touched a four-month high of 3.5% in July 2025, as per the Index of Industrial Production (IIP) released by the Ministry of Statistics and Programme Implementation.

About Index of Industrial Production (IIP)

Figure 50. Source – KNN India

- IIP is a **monthly volume index** that measures **short-term changes in industrial output**.
- **Formula used:** The index is calculated as a **simple weighted arithmetic mean** using **Laspeyres' formula**.
- **Sectors covered:** It tracks **production in key industrial sectors** and shows whether activity is **expanding or contracting over a period**.

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- IIP covers three broad sectors: **Manufacturing (77.6% weight), Mining (14.4%), and Electricity (8%).**
- The **eight core industries** together account for about **40.27% of the weight of items** included in the IIP.
    - These are refinery products, electricity, steel, coal, crude oil, natural gas, cement, and fertilizers, listed in **descending order of their share.**

Sector	Base year 2011-12		Base year 2004-05	
	Weights (%)	Item groups	Weights (%)	Item groups
Mining	14.373	1	14.157	1
Manufacturing	77.633	405	75.527	397
Electricity	7.994	1	10.316	1
Total	**100**	**407**	**100**	**399**

Source – MoSPI

- **Published by:** It is published by the Central Statistics Office (**CSO**), Ministry of Statistics and Programme Implementation (**MoSPI**).
    - It is compiled and published **every month**, **six weeks after** the reference month ends.
- **Base year:** The **current base year is 2011–12**, adopted to reflect the modern industrial structure.
    - The base has been **periodically revised** from earlier years such as **1937, 1946, 1951, and 1956**, and so on, to keep the index relevant.
- **Significance**
    - Key **high-frequency indicator** of industrial momentum.
    - Inputs for **GDP nowcasting**, **monetary/fiscal policy**, capacity and investment planning.
    - Used to gauge **business cycles** and sectoral performance.
- **Limitations (in the requested style):**
    - Narrow scope—excludes **services, agriculture, and much of the unorganized sector**
    - **Data-quality issues** from reporting gaps and potential inaccuracies
    - **Reliance on monthly data** that can obscure long-term trends
    - **Outdated base year/weights** over time
    - **Quality vs quantity** measurement problems for **high-value, low-volume** products
    - **Time lags and revisions**
    - **Slow basket updates**—with reforms underway to include **newer products like solar panels**

Samudrayaan Project

News: Recently, as part of preparation for this Samudrayaan Project, two Indian "aquanauts" travelled in the French vessel *Nautile* in the Atlantic Ocean to gain deep-sea exploration experience.

About Samudrayaan Project

Source: cppr.in

- The **Samudrayaan Project** is **part of India's Deep Ocean Mission,** which was approved by the Union Cabinet in 2021.

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- **Agency involved: The National Institute of Ocean Technology (NIOT)** is the coordinating agency responsible for developing the submersible and associated technologies.
- **Aim**: To send three humans to a **depth of 6,000 m in the ocean by the year 2027.**
- **Goal:** To conduct **surveys** for mineral deposits, particularly polymetallic nodules that contain valuable materials such as nickel, cobalt, rare earth elements, manganese, and iron.
- **Objectives of the Project**
    - It seeks to **develop technologies for deep-sea mining, underwater vehicles, and robotics,** along with designing and deploying a crewed submersible.
    - It also aims **to study the impacts of climate change in the oceans and create advisory services based on models and observations.**
    - The project further intends **to explore deep-sea biodiversity and develop technologies to conserve it.**
    - It also seeks **to develop methods for generating energy and freshwater from the ocean and to establish an advanced marine station** for ocean biology and engineering research.
- **Feat:** With this mission, **India will join an elite group of countries that already have deep-sea exploration capabilities,** namely the United States, Russia, China, Japan, and France.

About Matsya-6000 (The Submersible)

- The submersible being **developed for the mission is called Matsya-6000.**
- This vehicle will c**arry three aquanauts to the ocean depths.**
- It has been **designed with a personnel sphere of 2.1 metres in diameter to house the humans inside.**
- The vehicle will be **capable of sustaining three crew members for missions lasting up to 12 hours,** and **in case of emergencies, it can support life for up to 96 hours.**

National Biofoundry Network

News: Recently, India's first national-level biofoundry network was launched by Union Science and Technology Minister.

About National Biofoundry Network

- It is a **landmark initiative** launched to **transform the nation's biotech innovation,** biomanufacturing **capacity**, and advancement towards a **bio–based economy**.
- It was launched on **August 27, 2025.**
- **Launched under: BioE3 Policy** (Biotechnology for Economy, Environment, and Employment)
- **Implementing agency:** It will be implemented by the Department of Biotechnology (**DBT**), Ministry of Science & Technology.
- **Aim:** It is aimed at making biotechnology a **driver of the economy, environment, and employment**.

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- It also aims to expand **energy access** with biofuels and green technologies.
- **Composition of the Network:** The Network is comprised of **six leading institutions across India**.
  - It has been designed to **scale up proof-of-concept developments and strengthen indigenous biomanufacturing capacity**.
- **Objectives of the Network:**
  - To provide a **platform for scaling proof-of-concept solutions** into deployable technologies.
  - To **enhance indigenous biomanufacturing capacity** and reduce reliance on imports.
  - To foster **sustainable development** through biotech-driven solutions in **health, agriculture, industry, and environment**.
  - To create **employment opportunities** and strengthen India's **bio-startup ecosystem.**

BioE3 Challenge for Youth

- It is an **initiative conceptualized** under National Biofoundry Network.
- **Theme:** It is a nationwide **call to young innovators** under the theme **"Design Microbes, Molecules & More".**
- **Aim:** The programme aims to **empower grassroots innovators**, foster youth-led change, and strengthen India's journey towards a susta**inable and self-reliant bioeconomy.**
- **Participants:** The initiative invites school students (**Classes 6–12)**, **university students**, **researchers, faculty, startups and Indian nationals** to design **safe-by-default biological solutions** addressing challenges in **health, agriculture, environment, and industry.**
- **Challenge included:** The challenge will be **announced on the first of every month** beginning October 2025.
- **Incentives**
  - The top 10 winning solutions each will **receive a cash award of ₹1 lakh** along with **recognition and mentoring support**.
  - **100 selected awardees** will be eligible for **funding of up to ₹25 lakh,** provided in **two tranches through BIRAC**, to convert their ideas into proof-of-concept **solutions**.
  - These projects will also gain **access to facilities and incubation support** at **BRIC+ institutions** across India.

Daruma doll

News: Prime Minister Shri Narendra Modi was presented a Daruma doll by Rev Seishi Hirose, Chief Priest of the Shorinzan Daruma-Ji temple.

About Daruma doll

Figure 51. Source – IE

- It is an auspicious **Japanese talisman of perseverance and success**.
- It is modeled on **Bodhidharma** (Daruma Daishi), it promotes goal-setting and patience.
- **Name:** The name "Daruma" derives from the Sanskrit "**Dharma**"—meaning cosmic law or duty—reflecting its spiritual roots..
- **Historical linkage**
  - Daruma's roots **go back to** Bodhidharma, a 5th-century Indian monk from Kancheepuram

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(Tamil Nadu), **who is** revered in Japan as Daruma Daishi.

- He is said to have travelled to china and Japan over a thousand years ago, **spreading Zen Buddhist philosophy.**
- His teachings inspired the figure now known as the Daruma doll.
- **Takasaki City in Gunma** became the **birthplace of these famous dolls**, tying the link to local craft.
  - The doll, therefore, shows an **India–Japan civilizational bridge** older than modern diplomacy..

- **Significance**
  - **Cultural reverence:** The presentation by Rev Seishi Hirose highlights shared philosophical roots.
  - **Civilizational bond:** It renews historical links and reinforces India–Japan spiritual kinship during the 15th Annual India–Japan Summit.
  - **People-to-people links:** The exchange aligns with cultural MoUs, tourism exchanges, and educational collaborations focused on deeper connections.

Crocothemis Erythraea

News: Odonatologists have reconfirmed the elusive dragonfly Crocothemis erythraea in the high-elevation southern Western Ghats.

About Crocothemis Erythraea

Figure 52, Source – TH

- The scarlet dragonfly (Crocothemis erythraea) is a **species of dragonfly** in the family **Libellulidae.**
- Its **common names** include **broad scarlet, common scarlet-darter, and scarlet darter.**
- **Distribution:** High-elevation **Southern Western Ghats**; also **Himalayas**, parts of **Europe and Asia.**
  - **Migration:** Likely reached southern India during **Pleistocene cooling.**

- **Species in India:** The Indian genus has **two** species: **C. ervilia** and *C. erythraea.*
  - **Crocothemis servilia**
    - **Distribution:** It is widespread in **Indian lowlands** where it is frequently recorded.
    - **Appearance:** It **resembles *erythraea*** which has been a source of past confusion.
  - **Crocothemis erythrae:**
    - **Names:** Broad scarlet / common scarlet-darter / scarlet darter.
    - **Appearance:** Male bright scarlet with a broad, flattened abdomen; small amber patches at hindwing bases; red leading veins.
    - **Females**/immatures yellow-brown with a pale stripe on the thorax.
  - **Signifiance of discovery**
    - This discovery confirms two similar dragonflies share the Western Ghats.

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- ○ It fixes past misidentifications, directs surveys to cool highlands for *erythraea*, supports protecting those habitats, and shows how Ice Age climates helped the species reach southern India.

Cashless Bail

News– Recently, President Donald Trump signed an executive order against cashless bail in the U.S., cutting federal funding to jurisdictions that permit the practice.

About Cashless Bail

- **Definition**: A system where an accused is released *without depositing money* as bail, but with conditions to ensure they appear in court.
- **Traditional Cash Bail**: Requires an accused to *deposit money or property* as surety; refunded at the end of trial if conditions are met.
- **Problem**: Cash bail disproportionately affects the poor, who may remain in jail for minor offences due to inability to pay.
- **Purpose of Cashless Bail**: To prevent unnecessary detention of individuals accused of non-violent or minor crimes, while still ensuring court attendance.
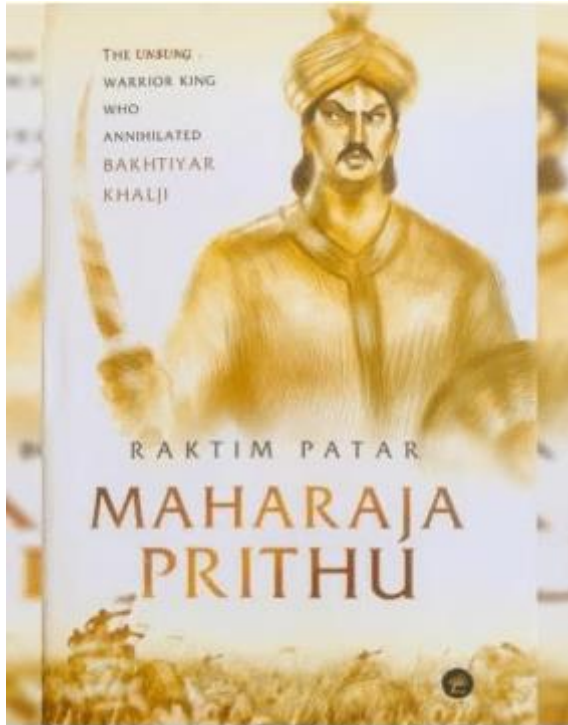
Bail System in India

- Governed by *Chapter 35 of Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023,* replacing CrPC 1973.
- **Types of Bail Conditions**:
  - ○ **Bond**: Accused signs an agreement (often with cash deposit).
  - ○ **Bail Bond**: Surety from another person with financial verification.
  - ○ **Personal Recognisance (PR) Bond**: Release without monetary deposit, based on trust that accused will return for trial.

Issues in India

- Thousands of undertrials remain in jail despite bail due to inability to furnish surety or deposit small sums.
- **Law Commission of India (268th Report, 2017)**: Said bail decisions based purely on money are **contrary to constitutional ethos**.
- **Supreme Court Guidelines (2023)**: If a prisoner remains in jail for over a week despite bail, jail authorities must alert *District Legal Services Authority* for assistance.

Prithu Raja Rae

News– The Assam Cabinet has resolved to name the upcoming flyover in central Guwahati after Prithu, the 13th-century ruler of Kamrup.

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Source- Indian Express

About Prithu Raja Rae

- **Period of Rule**: Early 13th century, over *Kamrupa (present-day Assam).*
- **Dynastic Lineage**: A king from the *Khen Dynasty*, which claimed descent from *Narakasura*.
- **Religious Affiliation**: The dynasty was devoted to *Goddess Kamteswari*, regarded as an incarnation of Goddess Durga.
- **Rise of the Khens**: After the decline of the *Pala dynasty*, the Khens rose as influential local chieftains and went on to establish the *Kamata Kingdom.* This realm was also referred to in different sources as *Kamru, Kamrud, Kamrupa, Kamata, Koch, or Koch Hajo.*

Key Contributions

- **Military Achievement**: Raja Prithu Rae successfully repelled the invasion of *Bakhtiyar Khilji*, thereby safeguarding Kamrupa.
- **Epigraphic Evidence**: The *Kanai Varasi rock inscription* stands as testimony to the complete destruction of the Turkish forces.
- **Ethical Warfare**: Despite his military success, he displayed magnanimity by pardoning prisoners of war and upheld the principles of *Dharma Yuddha*.

Air Quality Life Index (AQLI)

News– The 2025 edition of the Air Quality Life Index (AQLI) Annual Update has been published.

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Source- Downtoearth

About Air Quality Life Index (AQLI)

- It is a scientific tool that calculates how *particulate air pollution (PM2.5)* shortens human life expectancy.
- **Developer**: Designed by Michael Greenstone, Professor at the Energy Policy Institute, *University of Chicago (EPIC).*

Key Findings – 2025

- **India**: If air pollution were reduced to meet WHO guidelines, the average Indian could *live 3.5 years longer*, while residents of Delhi could gain 8.2 additional years—the highest in the country.
- **Global Impact**: If particulate pollution globally met WHO standards, the average person would *gain 1.9 years of life*, adding 15.1 billion life years worldwide.
- **South Asia**: Continues to hold the distinction of being the *most polluted region in the world*, with Bangladesh, India, Nepal, and Pakistan facing the steepest losses in life expectancy.

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