

Factly Monthly

Compilation

2025

**For UPSC CSE Prelims
Exam**



June 2025

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Vitamin B9

News: Nearly 41 per cent of urban adolescents in government schools across north India suffer from folate or vitamin B9 deficiency, which might be affecting their growth and development, according to a recent study by the All-India Institute of Medical Sciences (AIIMS). **Vitamin B9**

About Vitamin B9



Figure 1. Source – NDTV

- Vitamin B9 is also known as **Folate or folic acid**.
- It is a **water-soluble vitamin** essential for many bodily functions.
- **Sources of Vitamin B9:** Folate-rich foods which include green leafy vegetables (like spinach and fenugreek), legumes (lentils, chickpeas), citrus fruits, nuts, whole grains and fortified cereals.
 - In cases of poor dietary intake, **folic acid supplements** can be used.

- **Functions:**
 - It is needed for **red blood cell formation** and for healthy **cell growth**.
 - It is needed by cells to **carry oxygen** throughout the body.
 - Folate is involved in the **synthesis and repair of DNA and RNA**, which are the building blocks of genetic material.
 - It aids in the production of red blood cells and development of the central nervous system during early childhood.
- **Deficiency and consequences:** Its deficiency in foundational years can lead to impaired **cognitive development**, behavioural issues, fatigue, growth retardation, reduced academic performance and **anaemia**.
 - If there isn't enough folate, it can lead to **anaemia**, when the **body lacks enough red blood cells**.
- **Girls more deficient:** Adolescent girls have a **higher prevalence** of folate deficiency compared to boys, due to increased **physiological demands during menstruation and puberty**, as well as **differences in dietary** intake patterns.
 - Folate deficiency in girls can lead to **anaemia, decreased stamina and poor concentration**.

Neolithic age

News: The Archaeological Survey of India recently discovered one of **first rock grooves in Kanniyakumari district** which were created during the neolithic age. **Neolithic age**



About Neolithic age

- The term Neolithic has been derived from **two Latin words**. 'Neo' meaning **New** and 'lithic' meaning **stone**, hence Neolithic period is also known as **New Stone Age**.
- The Neolithic Age in India is generally **dated between 7000 BCE and 1000 BCE**, though this varies regionally.
- **Characteristics of this period**
 - **Agriculture transition and domestication of animals:** People began domesticating animals, cultivating **crops** such as wheat, barley, rice, millets, lentils, ragi, and cotton.
 - **Permanent settlements:** This period saw a transition from **nomadic lifestyles to settled village**
 - **Tool advancement:** Use of **polished stone tools**, including axes and sickles, indicating technological progress; was seen in the period.
 - **Pottery:** Development of **handmade and wheel-turned pottery**, often decorated, reflecting artistic expression.
 - **Arts and crafts:** Beads made of semi-precious stones, terracotta figurines (including images of cattle and mother goddesses), and decorated pottery.
 - **Social behaviour:** Likely tribal, with nuclear families indicated by small house sizes.
 - **Burial practices** included burying the **dead within houses**, and sometimes animal burials, suggesting rituals and **ancestor worship**.
 - **Belief systems:** Possible worship of **natural forces and fertility cults**, as suggested by terracotta images and burial customs.

Important Neolithic sites of India

- **North-western India:** The Neolithic culture of the north-western part of the Indian subcontinent at **Mehrgarh** has produced the earliest evidence of **plant and animal domestication**.
- **North India:** **Kashmir** Neolithic sites have evidence of **pit dwellings (Burzahom, Gufkral)**. These sites show contacts with the Harappan sites and the cultures of East Asia and West Asia.
- **Vindhyan Hills, the Belan and the Ganga River Valleys:** The Belan valley Neolithic sites have **cord-marked pottery** and produced evidence for **transition from hunting gathering to agriculture**.
- **North-eastern India:** The sites of **eastern and north-Eastern India** show traits of **shouldered axes** often noticed in Southeast Asia. **Marakdola, Daojali Hading and Sarutaru** are the Neolithic sites of Assam region.

- **Central-eastern region:** The eastern Indian Neolithic sites have evidence of **shouldered axes, pointed-butt celts, and chisels**. **Birbhanpur, Kuchai, Golbaisasan and Sankarjang** are some of the important Neolithic sites of this region of West Bengal and Odisha.
- **South India:** The Neolithic sites of South India have **ash mounds** in the early stages and evidence of plant and **animal domestication** is found.
 - Neolithic grooves were found in parts of **Tamil Nadu** such as **Kanniyakumari, Krishnagiri, Tiruvannamalai and Villupuram**.

Battery Aadhaar Initiative

News: Tata Elxsi, with partners like Tata Motors and IIT Kharagpur, introduced Battery Aadhaar to government stakeholders, aiming to provide batteries with secure digital identities for better traceability. **Battery Aadhaar Initiative.**

About Battery Aadhaar Initiative

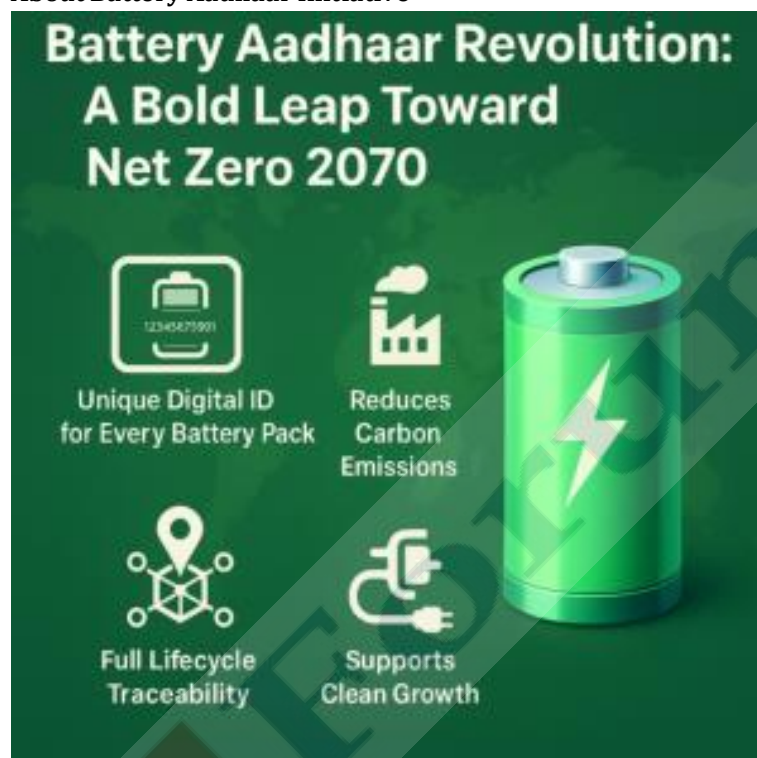


Figure 2. Source – NetZeroIndia

- It is a **digital identification system** for batteries, leveraging **secure, blockchain-backed technologies** to ensure full **traceability** throughout their lifecycle.
- **Aim:** It aims to **provide batteries with secure, digital identities**, facilitating traceability and improving lifecycle transparency.
- **Developed by:** It is developed by the **Tata Elxsi, with partners like Tata Motors, Tata AutoComp Systems and IIT Kharagpur**.
- The initiative was **introduced at the Battery Summit 2025**, organised by the World Resources Institute (WRI) India.
- **Functioning:** Tata Elxsi's **MOBIUS+ platform** integrates blockchain technology to support traceability and automate compliance reporting.
 - MOBIUS+ is designed to accelerate the transition to a cleaner mobility future by enabling digital transparency, traceability, and compliance through initiatives like Battery Aadhaar.
- This platform is **designed to align with Indian regulatory initiatives** and international frameworks, such as the **EU Battery Regulation**.
- The initiative **prioritizes regulatory compliance and sustainability, not primarily cost reduction**, though **cost savings** (10–20% in recycling) are a **secondary benefit**.
- **International support:** The Battery Aadhaar project is supported by a **UNEP-led programme named 'Electrifying Mobility in Cities'**, coordinated by **NITI Aayog** and the **Department of Science & Technology**, Government of India.

Mango: Chemistry, Culture & History

News- This article, published in the Indian Express, explores the mango- cherished across South Asia for millennia—for its cultural, political, and culinary significance, from Buddha's parables to Mughal orchards.

Mango: Chemistry, Culture & History



About Mango's Chemistry and Aroma

- Volatile Organic Compounds (VOCs) are responsible for the characteristic aroma of mangoes.
- **Key VOCs include:**
 - **Esters** – impart the sweet, tropical fruity scents
 - **Lactones** – give it a creamy, earthy aroma
 - **Terpenes** – floral, pine-like notes
 - **Aldehydes** – grassy, mildly spicy fragrance
- Minor compounds contribute to variety-specific aromas.
- **Botanical Classification:**
 - Mango (*Mangifera indica*) belongs to the Anacardiaceae family (*Cashew family*).
 - It is a distant relative of poison ivy.
- **Allergic Reactions-** Mango peels contain urushiol-like compounds, also found in poison ivy. These can cause contact dermatitis (skin allergy) in sensitive individuals.

Historical & Cultural Significance

Religious and Ancient Indian Roots

- It is believed to have originated 4,000 years ago in the Himalayan foothills.
- It is known as “Aamra” in Sanskrit, later “Aam”.
- It is mentioned in *Vedas, Dharma Shastras, and Puranas*.
- In Buddhism:
 - *Buddha was born under a mango tree.*
 - The fruit used as a metaphor to convey his ideas to people, and his disciples are credited with spreading mangoes to the rest of South Asia

Mango in Medieval and Mughal India

- Babur called it the “best fruit of Hindustan,” though he preferred musk melons.
- Humayun loved mangoes; Himam Pasand, (originally Humayun Pasand), variety of mango was specially grafted for him.
- *Sher Shah* named *Chaunsa* mango after defeating Humayun at the Battle of Chausa (1539).
- *Akbar* set up *Lakhi Bagh* in Darbhanga, Bihar, with over 1 lakh mango trees.
 - *Portuguese Jesuits* trained royal horticulturists in grafting techniques.

FPV drones

News: In the ongoing conflict between Ukraine and Russia, Ukraine has utilized FPV drones effectively to launch precise strikes deep inside Russian territory.

About FPV drones



- FPV drones, or **first-person view drones**, are unmanned aerial vehicles controlled remotely by pilots who see through the drone’s onboard camera in real-time.
- The **live video feed is transmitted to specialized goggles or screens**, allowing the operator to navigate the drone as if they were onboard.
- Unlike standard drones, which have a video transmission latency of over 200 milliseconds, **FPV drones have very low latency**, often just a few milliseconds.
- This low latency enables rapid reactions and allows pilots to see detailed, real-time views, improving flying accuracy significantly.
- FPV drones are commonly used for: Freestyling (performing aerial tricks), Drone racing and Capturing unique cinematic footage.
- **Advantage:** The key advantages include cost-effectiveness and deep-strike capabilities, all while remaining largely undetected.
- **Challenge:** A major challenge is that the drone operator cannot visually track the drone’s movement through its surroundings.

Personality Rights

News: The Delhi High Court has passed an order protecting the personality rights, and publicity rights of Sadhguru Jaggi Vasudev, founder of Isha Foundation, and restrained various rogue websites from misusing his personality traits by deploying Artificial Intelligence (AI).

About Personality Rights



Figure 3. Source – Bar & Bench

- Personality rights refer to the **legal rights of an individual to protect** their unique personal attributes—such as name, image, likeness, voice, signature, and other distinctive traits—from unauthorized use, especially for commercial gain.

- These rights are particularly **significant for celebrities and public figures**, whose personas have substantial commercial value and are often targeted for endorsements or advertisements without their consent.

- **Key aspects of Personality Rights in India**

- **Right to privacy:** It protects individuals from **unauthorized disclosure or intrusion into their personal life**.

- In India, the right to privacy is recognized as a **fundamental right under Article 21** (Puttaswamy Case 2017).

- **Right of publicity:** It grants individuals control over the **commercial use of their identity**, such as their name, image, likeness, or other recognizable characteristics.

- This means that **no one can use these**

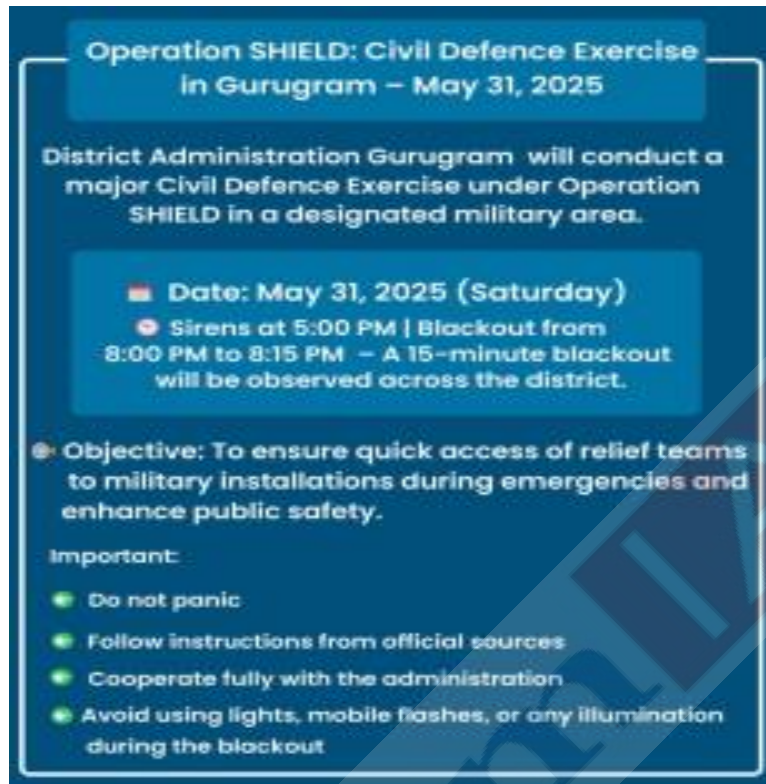
attributes for commercial purposes (like advertisements or merchandise) without permission or appropriate compensation.

- Publicity rights are governed by **statutes like the Trademarks Act 1999 and the Copyright Act 1957**.

Exercise Operation Shield

News: Civil defence exercise Operation Shield conducted across Kashmir to test and strengthen the preparedness for emergency situations. **Exercise Operation Shield**

About Exercise Operation Shield



Source – Haryana Govt

- It is a **government-led civil defence preparedness** initiative.
- **Aim:** The exercise was **aimed at familiarising citizens with emergency response protocols** during blackout or crisis situations and to evaluate the readiness of the public and the administration.
- The Exercise is being conducted across **several states** in India, including **Punjab, Haryana, Rajasthan, Gujarat, Chandigarh, and Jammu and Kashmir**.
- **It was** conducted by **District Administrations** in collaboration with **SDRF and Civil Defence**.
- The exercises involved demonstrations of rapid response tactics, **simulated rescue operations**, and real-time coordination between various emergency services.

Asian Development Bank (ADB)

News: Asian Development Bank (ADB) President Masato Kanda announced a 5-year initiative aimed at transforming urban infrastructure across India.

About Asian Development Bank (ADB)



ASIAN DEVELOPMENT BANK

Source – ADB

- It is a **regional development bank** established on **19 December 1966**.
- ADB is headquartered in **Manila, Philippines**.
- **Aim:** It aims to **promote social and economic development** in Asia.
- It **assists** its members and partners by **providing loans, technical assistance, grants and equity investments** to promote social and economic development.
- It is an official **United Nations Observer**.
- **Members:** ADB has **69 members**—of which **50 are from within Asia** and the **Pacific** and **19 outside**.
- **Voting pattern:** It was **modeled closely on the World Bank** and has a **similar weighted voting system**, where votes are distributed in **proportion with members' capital subscriptions**.
 - As of 31 December 2020, **Japan and the United States** each hold the **largest** proportion of shares at **15.571%**.
 - **China** holds 6.429%, **India** holds 6.317%, and **Australia** holds 5.773%.
- **Governance**
 - **Board of Governors:** The **highest policy-making body** of the bank is the Board of Governors, composed of **one representative from each member state**.
 - **Directors and deputies:** The Board of Governors, in turn, **elect among themselves** the twelve members of the board of **directors and their deputies**.
 - **President:** The Board of Governors also elect the **bank's president**, who is the **chairperson** of the **board of directors** and manages ADB.
 - Traditionally, and because **Japan** is one of the largest shareholders of the bank, the **president has always been Japanese**.

Infrastructure Initiative Announced by ADB

- It is a **5-year initiative** aimed at **transforming urban infrastructure across India**.
- **Funding:** ADB will invest up to **\$10 billion** into urban transformation including **metro extensions, new regional rapid transit system (RRTS) corridors, and urban infrastructure and services**.
- The plan includes **sovereign loans, private sector financing, and third-party capital**.
- **Anchored by:** The initiative is anchored by **India's flagship Urban Challenge Fund (UCF)**, which ADB is supporting to attract private investment for urban infrastructure.

Urban Challenge Fund (UCF)

- It was announced in the Budget 2025-26.
- It will be a fund of **Rs. 1 lakh crores** aiming to encourage states to think innovatively towards **attaining sustainable urbanisation and redevelopment goals in existing cities**.
- **Financing mechanism:** Fund will **finance up to 25% of the cost of bankable projects** with a stipulation that at least 50% of the cost is funded from bonds, bank loans, and PPPs.

Mount Etna

News: Mount Etna in Sicily, Italy erupted recently creating a spectacular display while sending a massive cloud of smoke and ash several kilometers into the sky.

About Mount Etna



Figure 4. Source: scienceteacherexplorer

- Mount Etna is a volcano **located in Sicily, Italy**. It is one of the **most active volcanoes in the world**.
- Mount Etna is located on an **active fault line** where the **African plate and the Ionian microplate** are **both being subducted** beneath the Eurasian plate.
- Mount Etna stands about **3,300 metres tall**.
- **Etna is a stratovolcano** – a cone-shaped volcano made from thick, sticky lava. This lava does not flow easily, so it builds up around the vent and forms steep slopes.
- The most prominent feature of the mountain is the **Valle del Bove (Valley of the Ox)**, a vast horseshoe-shaped caldera located on its eastern slope.
- It erupts in **two main styles: Effusive eruption** – where lava flows smoothly out onto the ground and **strombolian eruption** – which is more explosive with bursts of gas and lava.
- Etna has been erupting for at least 2,700 years, with the oldest known eruption dating back to around

1400 B.C.

- This gives it one of the longest recorded histories of volcanic activity in the world.
- It is a **UNESCO World Heritage Site** because of its long history and scientific value.
- It has also been designated a **Decade Volcano by the United Nations**.

Building-Integrated Photovoltaics (BIPV)

News: Boosting solar adoption in densely populated cities of India requires to look beyond traditional rooftop-mounted solar systems and towards Building-Integrated Photovoltaics (BIPV).

About Building-Integrated Photovoltaics (BIPV)



Source – U.S. Department of Energy

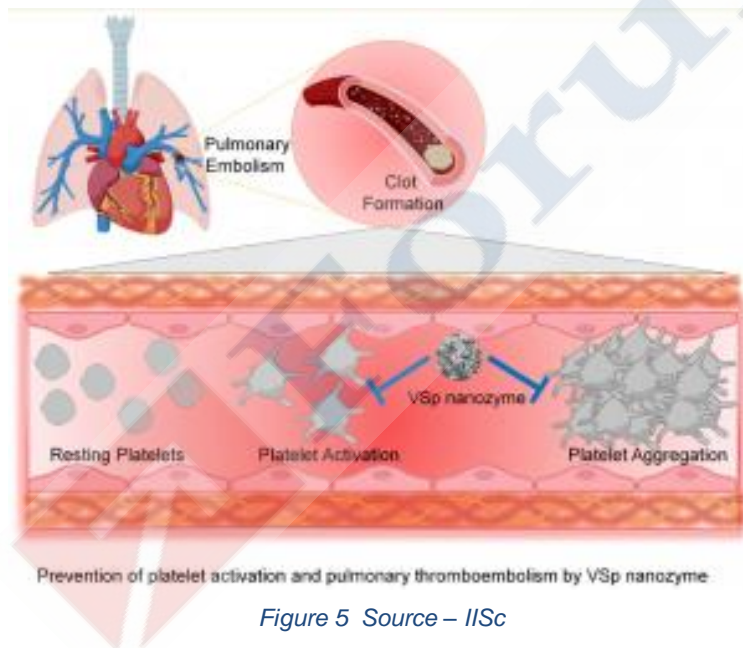
- They are **solar power generating products or systems** that are seamlessly **integrated** into the building envelope—such as **facades, roofs, skylights, or windows**.
- **Purpose:** It has **two purposes:** generating **electricity** and working as a **structural part** of a building.

- It serves as the **outer layer of a building**, and it **generates electricity** for on-site use or exports it to the grid.
- This **differs from traditional rooftop solar (RTS)**, where PV modules are placed on top of an existing roof.
- Unlike **rooftop solar (RTS)**, systems, which are added to rooftops, BIPV systems are embedded into the building's architectural fabric replacing conventional construction materials such as glass, tiles, and cladding with solar alternatives.
- **Need for India**
 - India can't rely solely on ground-mounted and rooftop systems to meet its goal to install 300 GW of solar capacity by 2030.
 - Land-neutral solutions like BIPV need to be prioritised.
 - **Potential:** The potential of BIPV for India's existing building stock is estimated to be 309 GW.
- **Challenges**
 - High initial costs
 - Policy gaps
 - Inadequate technical capacity
 - Reliance on imports.

Nanozyme

News: Researchers at the Indian Institute of Science (IISc.) have developed an artificial metal-based nanozyme that can potentially be used to clamp down on abnormal blood clotting caused by conditions like pulmonary thromboembolism (PTE). **Nanozyme**

About Nanozyme



- A nanozyme is a **nanomaterial** that exhibits **enzyme-like catalytic activity**, meaning it can mimic the functions of natural enzymes in facilitating biochemical reactions.

- They mimic the **activity of natural antioxidant enzymes**, which **scavenge reactive oxidative molecules**.

- Nanozymes can be **made** from a variety of **materials**, including **metals, metal oxides, carbon-based materials, and metal-organic frameworks**.

- **Significance:** These nanozymes developed by IISc. can be very efficiently used to **clamp down on abnormal blood clotting caused by conditions like pulmonary thromboembolism (PTE)**.

- **Working:** These nanozymes work by controlling **Reactive Oxygen Species (ROS) levels**, thereby preventing the over-activation of platelets that leads to

excess clot formation or thrombosis.

- **Reactive Oxygen Species (ROS)** levels refer to the amount of oxygen-containing molecules in a cell that are highly reactive and can damage biological molecules.
- **Material used:** The spherical-shaped **vanadium pentoxide (V₂O₅) nanozymes** were the most efficient.

- These materials mimic a **natural antioxidant enzyme** called **glutathione peroxidase** to reduce oxidative stress.
- **Applications**– Nanozymes have a large range of applications for diagnostic medicine, targeted therapy, and biosensing.

Bharat Gen

News: Union Minister Dr. Jitendra Singh launches 'Bharat Gen' – India's first of its kind Indigenously developed government funded AI based Multimodal LLM for Indian Languages at BharatGen Summit. **Bharat Gen.**

About Bharat Gen



Figure 6. Source – BharatGen

- Bharat Gen is **India's first** of its kind indigenously developed **government funded AI based Multimodal LLM for Indian Languages.**

- **Aim:** It aims to **revolutionize AI development** across India's linguistic and cultural spectrum.

- The platform **integrates text, speech, and image modalities**, offering seamless AI solutions in 22 Indian languages.

- **Support:** The initiative is supported by the **Department of Science and Technology (DST)** and brings together a robust consortium of leading academic institutions, experts, and innovators.
- It is launched at the **"BharatGen Summit"**—India's **largest Generative Artificial Intelligence (AI) and LLM summit and hackathon.**
- It is developed under the **National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS).**
 - NM-ICPS is implemented through **Technology Innovation Hubs (TIHs)** Foundation for IoT and IoE at **IIT Bombay.**
 - It is a national mission to **create AI** that is **ethical, inclusive, multilingual**, and deeply rooted in Indian values and ethos.

Ungulates

News: A report flags tiger-human conflict risk as prey base (ungulates) shrinks in Jharkhand, Chhattisgarh and Odisha.

About Ungulates



STATUS OF UNGULATES IN TIGER HABITATS OF INDIA

Source – NTCA

- Ungulates are **hoofed mammals** that **walk on their toes**.
- The word ungulate comes from the Latin word “**unguis**” which means **nail, claw or hoof**.
- **Division:** They are divided into **two classes**:
 - i. **Even-toed ungulates** such as deer, giraffe, antelopes
 - ii. **Odd-toed ungulates** such as horses, zebras and rhinoceroses.
- **Importance:** Ungulates form the **bulk of a tiger's diet** and are also **critical to the forest ecosystem**.
- **Threats:** They are facing increasing pressure from **loss of habitat** due to deforestation, development, agricultural expansion, urbanisation, human-wildlife conflict, and subsistence hunting.

Report on Ungulates and key findings

- It is a **first-of-its-kind assessment of ungulates** conducted by the **Wildlife Institute of India (WII)** and the **National Tiger Conservation Authority (NTCA)**, using **data** from India's **2022 tiger census**.
- **Key findings**
 - A **density of 30 ungulates per square km** can support four **tigers in 100 square**
 - Tiger numbers may rise with prey density, but plateau at about 75 ungulates per sq km due to ecological constraints such as territoriality, competition and lack of habitat connectivity.
 - Among the tiger reserves, **Pench in Madhya Pradesh** has one of the **highest chital densities** — nearly 54 per sq km.
 - There is a **direct link** between **low prey numbers** and **human-wildlife conflict**.

India to build first-ever indigenous Polar Research Vessel (PRV)

News: India to build first-ever indigenous Polar Research Vessel with Norwegian firm.

India to build first-ever indigenous Polar Research Vessel (PRV)



Source – DD News

- A PRV is a ship which serves a **platform for research in the polar regions** (areas surrounding the North and South Poles).
- It can also help scientists undertake **research in the ocean realm**.
- **MoU:** An MoU has been signed between the **Garden Reach Shipbuilders and Engineers Limited (GRSE)**, Kolkata, and **Norway's Kongsberg Oslo** to build the PRV.
 - GRSE, which has built warships, survey and research vessels, will **build the PRV** in its yard in Kolkata.
- **Importance:** It will be equipped with the **latest scientific equipment**, enabling researchers to explore the oceans' depths and **study marine ecosystems**.
 - The vessel will support advanced oceanic and polar research for the **National Centre for Polar and Ocean Research (NCOPR)**, boosting India's scientific capabilities and **'Make In India' shipbuilding efforts**.
- **Polar basis of India:** India currently operates **three research base stations** in the polar regions — **Bharati and Maitri in Antarctica**, and **Himadri in the Arctic region**.
- **'MAHASAGAR' initiative:** This initiative is part of the government's larger maritime vision, **'MAHASAGAR'** (Mutual and Holistic Advancement for Security Across the Regions), aimed at **promoting sustainable development and international cooperation** in the blue economy.

International Institute of Administrative Sciences (IIAS)

News: India has won the Presidency of the International Institute of Administrative Sciences (IIAS) for the 2025–2028 term. **International Institute of Administrative Sciences (IIAS)**

About International Institute of Administrative Sciences (IIAS)



Source – IIAS

- It is an international **non-profit organization** working as a federation of member states, national sections and academic research centres jointly **elaborating public governance solutions** to the policy challenges of the day.
- **Founded in:** It was founded in Madrid in 1930.
- **Headquarter:** Its headquarter is located in the Brussels, Belgium.
- **Objective:** IIAS has **five objectives**–
 - Organize high impact events targeting and involving both public service and academia.
 - Produce and dissemination relevant knowledge on public governance.
 - Enable collaborative and strategic projects with members and partners.
 - Accredited both academic and professional training programs in line with standards of best practices in public management.
 - To produce and promote comprehensive content on public governance research and practice to different audiences.
- **Governance**
 - **Council of Administration:** It is the **main governance body** responsible for **appointing the Director General**, adopting the **budget and accounts**, and the **program** of the association for the financial year.
 - It is composed of **different kinds of members**.
 - The Council of Administration is **legally responsible** among others for the acts of the association.
- **Not part of U.N.:** It is **not a formally affiliated** body of the United Nations but actively engages with the UN's work in the field of public administration.
- **Members:** It is a global federation comprising **31 member countries**, 20 National Sections, and 15 Academic Research Centres, collaborating on scientific research in public administration.
 - India has been a member state since **1998**.
 - India is represented by the **Department of Administrative Reforms and Public Grievances**.

World's first fusion-fission hybrid nuclear power plant

News: China has announced the construction of **Xinghuo**, the world's first **fusion-fission hybrid nuclear power plant**, marking a historic leap in nuclear energy technology. **World's first fusion-fission hybrid nuclear power plant.**



About World's first fusion-fission hybrid nuclear power plant

- The project is located on Yaohu Island in Jiangxi Province of China.
- It is strategically chosen for its proximity to essential copper resources used in superconducting technologies.
- **Aim:** To produce a **continuous power output of 100 megawatts**, which, although modest in scale, will demonstrate the viability of hybrid nuclear technology.
- **Objective:** To achieve a **Q factor greater than 30**, meaning it will generate over 30 times the energy it consumes to sustain plasma—far exceeding the **ITER project's goal of Q=10** and the U.S.'s recent record of Q=1.5.
- The plant uniquely combines **fusion and fission processes**.

Key Features of the Hybrid Reactor

- **Combines Benefits of Fusion and Fission:** Fusion reactors produce many neutrons but less power, while fission reactors produce more power but fewer neutrons. The hybrid reactor uses the strengths of both.
- **Lower Power Needed:** It needs less fusion power than a full fusion reactor, as its main goal is to produce neutrons, not energy.
- **Less Radioactive Waste:** The neutrons can help convert harmful long-lived nuclear waste into safer, short-lived waste that's easier to manage.
- **Self-Sustaining Fuel Supply:** It can create its own fissile fuel by converting fertile materials (*like uranium-238 or thorium-232*) into usable fuel (like plutonium-239 or uranium-233).

Centre's New Regulations For Ladakh

News– The Central Government has notified five regulations for the Union Territory of Ladakh, aimed at addressing demands related to land rights, local employment, and cultural protection. **Centre's New Regulations For Ladakh.**



About New Regulations

1. Ladakh Civil Services Decentralization and Recruitment (Amendment) Regulation, 2025

- Introduces *domicile-based recruitment* for government posts in Ladakh.
- Domicile criteria include:
 - 15 years of residence in Ladakh, or
 - 7 years of education including appearance in Class 10 or 12 in Ladakh, or
 - Children of Central Government employees serving 10+ years in Ladakh, or
 - Spouses/children of domiciles.

2. Ladakh Civil Services Domicile Certificate Rules, 2025

- Defines the procedure for obtaining domicile certificates.
- **Issuing Authority:** Tehsildar
- **Appellate Authority:** Deputy Commissioner
- *Applications allowed both online and offline.*

3. Union Territory of Ladakh Reservation (Amendment) Regulation, 2025

- Sets *reservation ceiling at 85% for SC, ST, OBC*, and other backward groups (excluding 10% EWS quota).
- *Extends reservations to professional institutions* (engineering/medical colleges).
- Earlier reservation in these institutes was capped at 50%.

4. Ladakh Official Languages Regulation, 2025

- Recognises English, Hindi, Urdu, Bhoti, and Purgi as official languages.
- Promotes *Shina, Brokskat, Balti, and Ladakhi* through institutional support.

5. Ladakh Autonomous Hill Development Councils (Amendment) Regulation, 2025

- Reserves *one-third of seats for women* in LAHDCs of Leh and Kargil, on a rotational basis.

Significance of the Regulations:

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- *First region-specific legal framework* post bifurcation from Jammu & Kashmir.
- Attempts to safeguard local identity, address the lack of domicile/job protection, and recognize linguistic diversity.
- A response to growing local demands for constitutional safeguards, such as inclusion under the [Sixth Schedule](#) (currently not granted).

UMEED Portal

News: The Union Government is preparing to launch the *Unified Waqf Management, Empowerment, Efficiency, and Development (UMEED)* portal. **UMEED Portal**



About UMEED Portal

- The Unified Waqf Management, Empowerment, Efficiency, and Development (UMEED) Portal is a *centralized digital platform for streamlined registration and transparent management of Waqf properties across India*.
- It aims at streamlining the management of waqf properties by consolidating related documents and records.
- It aligns with the provisions of the recently enacted [Waqf \(Amendment\) Bill, 2025](#).

Key Highlights:

- All Waqf properties must be registered on the portal *within six months* of its launch.
- Registration requires complete property details, including measurements and geo-tagged location.
- State Waqf Boards will facilitate the registration process.
- *Properties registered in the name of women will not qualify as Waqf assets.*
- Women, children, and economically weaker sections will continue as priority beneficiaries.
- Properties unregistered after the deadline (including any 1–2 month extension) will be treated as disputed and referred to the Waqf Tribunal.

Kichan and Menar Wetlands

News: Khichan in Phalodi and Menar in Udaipur have been designated as Ramsar sites. **Kichan and Menar Wetlands**

About Kichan and Menar Wetlands



Source – MoEFCC

Menar Wetland

- **Location:** It is located in the Menar and Kheroda villages in **Vallabhnagar taluka, Udaipur District of Rajasthan.**
- The Menar Wetland Complex is a **freshwater monsoon wetland complex** formed by **three ponds – Braham talab, Dhand talab and Kheroda talab**, and **agricultural land** that connects the latter two.
- **Importance**
 - **Migratory birds:** During the monsoon season the farmland floods provide **habitat for 110 species of waterbirds** of which 67 are migratory.
 - Among the **notable bird species** at the site are the **critically endangered white-rumped vulture and long-billed vulture.**
 - **Plant species:** Over **70 plant species** are found, including **mango trees around Braham talab** that host a large colony of **Indian flying foxes.**
- **Community participation:** It is recognized as one of the **best examples of community-led conservation** in Rajasthan, with residents playing a key role in conserving wildlife by preventing poaching or fishing.

Khichan Wetland

- **Location:** Khichan Wetland is located in the Phalodi tehsil of Phalodi district, Rajasthan, India, in the northern Thar Desert.
- It comprises **two water bodies – Ratri nadi (river) and Vijaysagar talab (pond)**, riparian habitat and scrub land.
- **Fauna and flora**
 - This desert ecosystem supports **drought-resistant plant species** that provide habitat for over 150 species of birds.
 - The site is especially recognised for hosting **large wintering flocks of migratory demoiselle cranes (locally known as Kurjan)**, making up over 22,000 individuals each year.

Note: Previously, only **Keoladeo Ghana National Park in Bharatpur** and **Sambhar Lake in Jaipur** had Ramsar site status in the state.

- India now has a total of **91 Ramsar sites**.

United Nations Economic and Social Council (ECOSOC)

News: India got elected to the United Nations Economic and Social Council (ECOSOC) for the term 2026-28.
United Nations Economic and Social Council (ECOSOC)

About United Nations Economic and Social Council (ECOSOC)



Figure 7. Source – ECOSOC

- It is one of the **six principal organs** of the United Nations, established by the **UN Charter in 1945**.
 - Other organs are **UNSC, UNGA, Trusteeship Council, ICJ, and UN secretariat**.
- **Objective:** It plays a central role in advancing the international **development agenda** and fostering international **cooperation** across **economic, social, and environmental spheres**.
- **Headquarters:** Its headquarters is located in **New York, U.S.A.**
- **Members**
 - It has **54 member Governments** which are elected for **three-year terms** by the **General Assembly**.
 - The **General Assembly of U.N.** comprising all **193 UN Member States** elects ECOSOC members annually by **secret ballot**.
- **President:** The president of the Council is elected for a **one-year term** and **chosen from the small or medium sized states represented on the Council** at the beginning of each new session.
- **Seat allocations:** Seats on the Council are allotted **based on geographical representation**.
- **Responsibilities:** The members of ECOSOC are responsible for electing the **executive board of UNICEF**, the **council of the United Nations Development Programme**, the committee of **UNHCR** etc.

Socotra Island

News: UAE partners with WHO to launch two-year initiative targeting child malnutrition crisis on Yemen's Socotra Island. **Socotra Island**

About Socotra Island



Source-iStock

- **Location:** It is a **Yemeni island** situated between the **Guardafui Channel** and the **Arabian Sea** in the Indian Ocean.
- It lies **380 km south of the Arabian Peninsula** and **232 km east of the Horn of Africa** near the **Gulf of Aden**.
- It is the **largest island** of the much larger **Socotra archipelago**.
- **Ecological diversity:** The Socotra archipelago has been dubbed the **Galapagos of the Indian Ocean** due to its **ecological diversity** and high rates of **endemism**.
 - **Endemic:** 37% of Socotra's 825 plant species, 90% of its reptile species and 95% of its land snail species do not occur anywhere else in the world.
 - Important plant species are the **Dragon's Blood trees**, frankincense, myrrh, and endemic aloes.
- **Climate:** It has a semi-desert climate with low annual rainfall.
- **Recognition:** In **2008**, Socotra was recognised as a **UNESCO World Heritage Site**.

ECI's Upgraded Index Card System

News- On June 5, 2025, the Election Commission of India (ECI) announced a major technological upgrade in its Index Card system. It aims to improve the efficiency, accuracy, and accessibility of post-election data dissemination. **ECI's Upgraded Index Card System.**



About Index Card

- The Index Card is a *non-statutory*, post-election statistical reporting format developed as a *suo moto initiative* by the ECI.
- It serves as a constituency-level data tool to record and publish electoral details for public, academic, and research use.
- It provides constituency-level data across multiple dimensions, including *candidate information, vote counts, party performance, gender-based voting patterns, and regional voting variations*.

Why was the System Upgraded?

- Earlier, information was manually filled at the constituency level using various statutory formats on physical Index Cards.
- These *physical Index Cards were later used for data entry into the online system to generate statistical reports*.
- The process was manual and multi-layered, making it time-consuming and resource-intensive.
- It frequently led to delays in data availability and slowed dissemination of post-election statistical information.

Key features of the new technology-driven system

- Automation of data integration and report generation
- Faster access and dissemination of verified election statistics
- Reduced human errors and time delays
- Better support for researchers, academia, journalists, and policymakers

Eurasian Economic Union (EAEU)

News: India is set to commence trade negotiations with the Eurasian Economic Union (EAEU) this year.

About Eurasian Economic Union (EAEU)

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Source – MEA

- It is an international organization for **regional economic integration** in the **former Soviet region**.
- **Founded in:** It is established by the **Treaty on the Eurasian Economic Union** signed on 29 May 2014 and came into force on **1 January 2015**.
- **Aim:** It provides for **free movement** of goods, services, capital and labor, pursues coordinated, harmonized and **single policy in the sectors** determined by the Treaty and international agreements within the Union.
- **Members:** The Eurasian Economic Union consists of five member states: Russia, Belarus, Kazakhstan, Kyrgyzstan, and Armenia.
- **Structure**
 - **Eurasian Economic Commission (EEC):** It is the **permanent regulatory body** of the EAEU.
 - The **main purpose** is ensuring the functioning and development of the EAEU, and developing proposals for the further development of integration.
 - Its headquarters is in **Moscow**.
 - **Presidency:** Each year, a member state is elected chairman to head the Union.
 - **Court of the Eurasian Economic Union:** It was **formed** by replacing the Court of the Eurasian Economic Community (EurAsEC Court) in **2015**.
 - It is in charge of **dispute resolution and the interpretation of the legal order** within the EAEU.
 - Its headquarters is in **Minsk**.
 - **Customs Union of the Eurasian Economic Union:** It is a customs union of the member states of the EAEU which initially became effective on January 1, **2010**.
- **Drawbacks**
 - The Commission's **power is limited**.
 - Member states **disagreeing** with its judgements can **appeal to other bodies**, and the Commission has **no power to bring a member state before the Court** in a case of non-compliance.
 - Disputes are **often resolved bilaterally** rather than via EEU institutions.
 - Unlike the European Union (EU), the EAEU **does not share a common**

Clean Plant Programme (CPP)

News: The Union Agriculture Minister launched the “Clean Plant Programme” to establish nine horticultural facilities across the country during India’s first Agri Hackathon in Pune.

About Clean Plant Programme (CPP)



Figure 8. Source – PIB

- It is designed to **address critical issues in horticulture** by providing access to **high-quality, virus-free planting material**.

- **Aim:** It aims to **enhance the quality and productivity of fruit crops** across the nation.

- **Nodal Ministry:** Ministry of Agriculture and Farmers Welfare

- **Implementing Agency:** National Horticulture Board in collaboration with the Indian Council of Agricultural Research (ICAR).

- **Core Components of the CPP**

- **Clean Plant Centers (CPCs):** Nine world-class CPCs will be set up across India.

- These centers will have advanced labs for diagnostics, therapy, and tissue culture.

- **Locations:** The CPCs will be located in regions suited for specific fruit crops, such as Grapes (Pune), Temperate Fruits like Apple, Almond, and Walnut (Srinagar & Mukteshwar), Citrus Fruits (Nagpur & Bikaner), Mango, Guava, Avocado (Bangalore), Mango, Guava, Litchi

(Lucknow), Pomegranate (Sholapur) and Tropical/Sub-Tropical Fruits in Eastern India.

- **Certification and Legal Framework:** A strong certification system will be put in place to ensure that planting materials are produced and sold with full accountability. This system will be supported by regulations under the **Seeds Act of 1966**.

- **Enhanced Infrastructure:** Large nurseries will receive support to develop the necessary infrastructure for multiplying clean planting materials efficiently.

- **Importance of the CPP**

- **Sustainability:** The programme aligns with initiatives like **Mission LiFE and One Health**, promoting eco-friendly farming practices.

- **Self-reliance:** It **reduces the need for importing** planting materials, making India more self-sufficient.

- **Global leadership:** CPP will help position India as a **leading exporter of high-quality** fruits, driving transformative changes in the horticulture sector.

EnviStats India 2025

News: The Ministry of Statistics and Programme Implementation (MoSPI), Government of India has released the 8th issue of the publication titled “EnviStats India 2025: Environment Statistics”.

About EnviStats India 2025

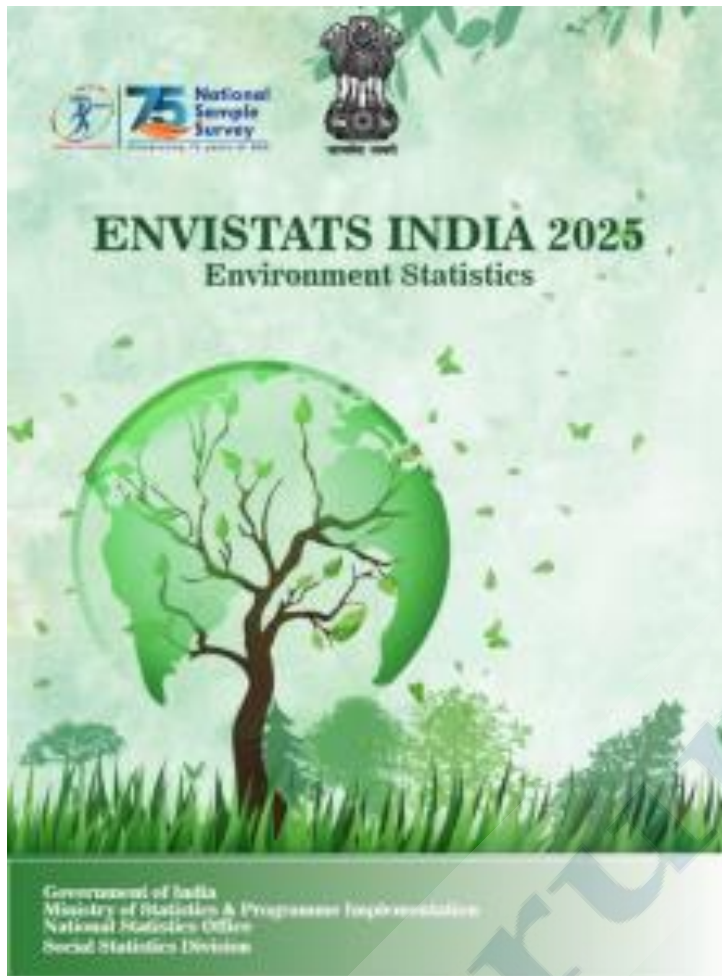


Figure 9. Source – MoSPI

- **Released by:** Ministry of Statistics and Programme Implementation (MoSPI)

- It is the **8th issue of the publication** titled “EnviStats India 2025: Environment Statistics” during the **National Workshop** on Using Alternate Data Sources and Frontier Technologies for Policy Making.

- **Published by:** The **National Statistics Office (NSO)** since 2018 in alignment with the Framework for the Development of Environment Statistics (FDES) 2013.

- The data presented in the publication are **organized into six components**, each corresponding to the components of FDES 2013.

Key highlights of the publication

- **Thermal power generation** has **increased** from 7,92,053 GWh to 13,26,549 GWh and **Electricity generation** from **renewable energy** sources has increased from 65520 GWh to 2,25,835 GWh during 2013-14 to 2023-24.

- The **annual mean temperature** **increased** from 25.05°C in 2001 to 25.74°C in 2024. Similarly, the **annual minimum and maximum temperature** **rose** from 19.32°C to 20.24°C and 30.78°C to 31.25°C respectively, during the same period.

- The **annual rainfall data** from 2001 to 2024 highlights significant year-to-year variability influenced by monsoon patterns.

- Despite this variability, the data does not indicate any clear long-term upward or downward trend in total annual rainfall.

- **Inland fish production** has **increased** from 61.36 lakh tonnes in 2013-14 to 139.07 lakh tonnes in 2023-24, possibly indicating inland aquaculture and freshwater fisheries.
- The **Environment Sustainability Sector** shows the **highest expenditure** share as Rs. 2433.24 crore in 2021-22.

Significance

- It is a **key resource for policymakers, researchers, and stakeholders**, offering a comprehensive overview of the country's environmental landscape.
- Through the analysis of **key environmental indicators**, the publication highlights emerging environmental trends, identifies pressing challenges.
- It supports the development of **evidence-based policies** aimed at achieving environmental sustainability and resilience.

Greater Flamingo

News: Tamil Nadu has officially declared the establishment of the Greater Flamingo Sanctuary at Dhanushkodi, aiming to preserve a critical stopover point along the Central Asian Flyway for thousands of migratory wetland birds. **Greater Flamingo**

About Greater Flamingo



Figure 10. Source: Animilia

- It is the **largest among flamingo species**.
- They are commonly found in warm, aquatic habitats across multiple continents, including the **coastal areas of India and Pakistan in Asia**, as well as regions in **Central and South America**, the **Caribbean**, and **Southern Europe**.
- **Features:**
 - While this species exhibits significant dispersal ability during the non-breeding season, it **shows strong philopatry**—tending to return to or stay near the same site.
 - It is known for its pinkish-white feathers, long pink legs, and a curved pink bill with a black tip. Its color comes from carotenoid-rich food like shrimps and algae.
- **The Kachchh Desert Wildlife Sanctuary**, located in the Great Rann of Kachchh (GRK) in Gujarat, stands out as a unique Protected Area. It hosts **South Asia's only known breeding site for the Greater Flamingo**, which has earned it international recognition as the "**Flamingo City**."
- **Conservation Status:** Classified as '**Least Concern**' by IUCN.

Kalvarayan Hills

News: In a first, girl from tribal community in Kalvarayan Hills earns her seat in IIT.

About Kalvarayan Hills



Figure 11. Source – ResearchGate

- **Location:** They are a major range of hills situated in the **Eastern Ghats** of the southern Indian state of **Tamil Nadu**.

- **Acting as a watershed:** Along with the **Pachaimalai, Javadi, and Shevaroy** hills, they **separate the Kaveri River basin to the south** from the **Palar River basin to the north**.

- **Height and spread:** The hills range in height from **2000 feet to 3000 feet** and extend over an area of **1095 square kilometers**.

- **Divisions:** The Kalrayans are divided into **two sections** —

- The northern section, referred to as the **Chinna** ("little") Kalrayans, having an average height of 2700 feet.

- The southern section, called the **Periya** ("big") Kalrayans having an average height of 4000 feet.

- **Vegetation:** Scrubs (up to 400 metres), deciduous forests (between above 800 metres), Sholas (on isolated plateaus)

- **Waterfalls:** Megam Falls and Periyar falls

- **Dam:** Gomukhi dam

- **Tribes:** The primary tribal community inhabiting the Kalrayan Hills is the **Malayali (Malaiyali) tribe**.

Pandyan Dynasty

News: An 800-year-old Shiva temple of the **later Pandya period** has been unearthed at Udampatti, a village in Melur taluk, Madurai district, Tamil Nadu.

About Pandyan Dynasty



Figure 12. Source – The Hindu

the **thirteenth century**.

- **Illustrious rulers:** The illustrious ruler of the second Pandya kingdom was **Sadaiyavarman Sundarapandyan (1251-1268)**, who not only brought the entire Tamil Nadu under his rule but also exercised his authority up to Nellore in Andhra.
 - After Sundarapandyan, **Maravarman Kulasekharan** ruled successfully for a period of **40 years**, giving the country peace and prosperity.
- **Decline:** It was **Malik Kafur's invasion** that finally led to the division and downfall of the Pandya empire.

Administration

- The territory of Pandyas is called **Pandymandalam, Thenmandalam or Pandynadu**, which lay in the rocky, hilly regions and mountain ranges **except** the areas fed by the rivers **Vaigai and Tamiraparni**.
- **Capital:** Pandya kings preferred **Madurai** as their capital.
- **Political division:** Pandya Mandalam or Pandya Nadu consisted of many **valanadus**, which, in turn, were divided into many **nadus and kurrams** (meaning **group of villages**).
- Kings and local chiefs created **Brahmin settlements called Mangalam or Chaturvedimangalam** with irrigation facilities.
 - These settlements were **given royal names and names of the deities**.
- **Royal officials were called by different names:**
 - The **prime minister** was called **Uttaramantri**
 - The **royal secretariat** was known as **Eluttu Mandapam**
 - The titles of **military commanders** were **Palli Velan, Parantakan Pallivelan, Maran Adittan and Tennavan Tamizhavel**.
- **Port:** The **busiest port town** under the Pandyas was **Kayalpattinam** (now in **Thoothukudi** district).

Social and Political Aspects

- **Royal palaces** were called **Tirumaligai and Manaparanan Tirumaligai** during the Pandya reign and the **royal couches** they used were named after the local chiefs, which attested to the legitimacy of the overlordship of the kings

- It was one of the **three main lineages (Muvendars)** from the southern part of the country (along with Cheras and Cholas), developed during the **Sangam Age**.

○ The term **Muvendar** refers to a Tamil word meaning **three chiefs**, used for the heads of three ruling families, the **Cholas, Cheras, and Pandyas**.

Origin (Early Pandyan Dynasty)

- The Pandyas established their dynastic rule in southern Tamil Nadu by the **end of the sixth century CE** after **Kalabhras**.

● **Decline:** **Chola king Parantaka I** defeated the Pandya King **Rajasimha II** and that led to the decline of the Pandya empire.

The Re-Rise of Pandyas (Later Pandyan Dynasty)

- After the decline of the Cholas, the Pandya kingdom became the leading Tamil dynasty in

- The political division of land was as follows:
 - The land assigned to **Brahmins** was **Salabogam**
 - The land assigned to **Ironsmiths** was called **Tattarkani**
 - The land assigned to **Carpenters** was known as **Taccu-maniyam**
 - The land donated to the **Brahmin group for imparting education** was called **Bhattavriutti**

About findings:

- The **inscriptions** on the **culvert of the Shiva temple** are significant as they reveal that the temple had been **financially independent**.
- **Dating:** It can be dated to **1217-1218 CE**, during the reign of **Maravarman Sundara Pandya**.
- The inscriptions say the name of the **village was Attur** and the temple was called **Thennavanisvaram**
 - **Thennavan** is actually a **title used by the Pandyas**.
- These inscriptions reveal the ancient name of **Udampatti**, which was then called **Attur**, and also the **socio-economic dynamics** that were at play during the later Pandya period.

RBI's Monetary Policy Instruments

News: RBI has slashed the repo rate by a larger-than-expected 50 basis points to 5.50 per cent, marking the third consecutive reduction since February 2025. **RBI's Monetary Policy Instruments.**

About RBI's Monetary Policy Instruments and key takeaways from the latest monetary policy

Monetary Policy Instruments



Figure 13. Source – RBI

- **Repo Rate and Reverse Repo Rate:** The interest rate that the RBI charges when commercial banks borrow money from it is called the **repo rate**.
 - The interest rate the central bank pays commercial banks when they park their excess cash is called the **reverse repo rate**.
- **Standing Deposit Facility (SDF) Rate:** It is the rate at which the RBI, on an **overnight** basis, **accepts uncollateralised deposits from all liquidity adjustment facility (LAF) participants**.
 - The SDF is also a **financial stability tool** in addition to its role in **liquidity management**.
- It was introduced in **2022** to replace the **fixed rate reverse repo (FRRR)** as the floor of the liquidity adjustment facility corridor.
- **Marginal Standing Facility (MSF) Rate:** It is the **rate at which a bank can borrow**, on an **overnight basis**, from the **RBI** in an **emergency situation** when inter-bank liquidity dries up completely.
 - It is typically placed at **25 basis points above the policy repo rate**.

- **Liquidity Adjustment Facility (LAF):** LAF is a facility extended by RBI to the scheduled commercial banks (excluding Regional Rural Banks) and Primary Dealers to avail of liquidity in case of requirement or park excess funds with RBI in case of excess **liquidity on an overnight basis against the collateral of G-Secs** including State Development Loans (SDLs).
- **Main Liquidity Management Tool:** To manage the **frictional liquidity requirements**, a **14-day term repo/reverse repo auction operation** at a variable rate is conducted to coincide with the cash reserve ratio (CRR) maintenance cycle.
- **Bank Rate:** In case of **shortfalls** in meeting the reserve requirements (cash reserve ratio and statutory liquidity ratio) by the banks, the Reserve Bank **provides to buy or rediscount bills of exchange or other commercial papers at a rate which is called Bank rate**.
- **Cash Reserve Ratio (CRR):** It is the **percentage of a bank's net demand and time liabilities (NDTL)** that is required to be **maintained in liquid cash with the RBI as a reserve**.
 - The RBI determines the CRR percentage from time to time.
- **Statutory Liquidity Ratio (SLR):** Every bank is required to maintain in **Indian assets**, the value of which shall **not be less than such percentage of the total of its demand and time liabilities** in India as on the last Friday of the second preceding fortnight, in the form of **liquid cash, gold, government and state government securities**.
- **Open Market Operations (OMOs):** These include outright **purchase or sale of government securities by the Reserve Bank** for injection or absorption of durable liquidity in the banking system.

Recent Decisions by the RBI Monetary Policy Committee

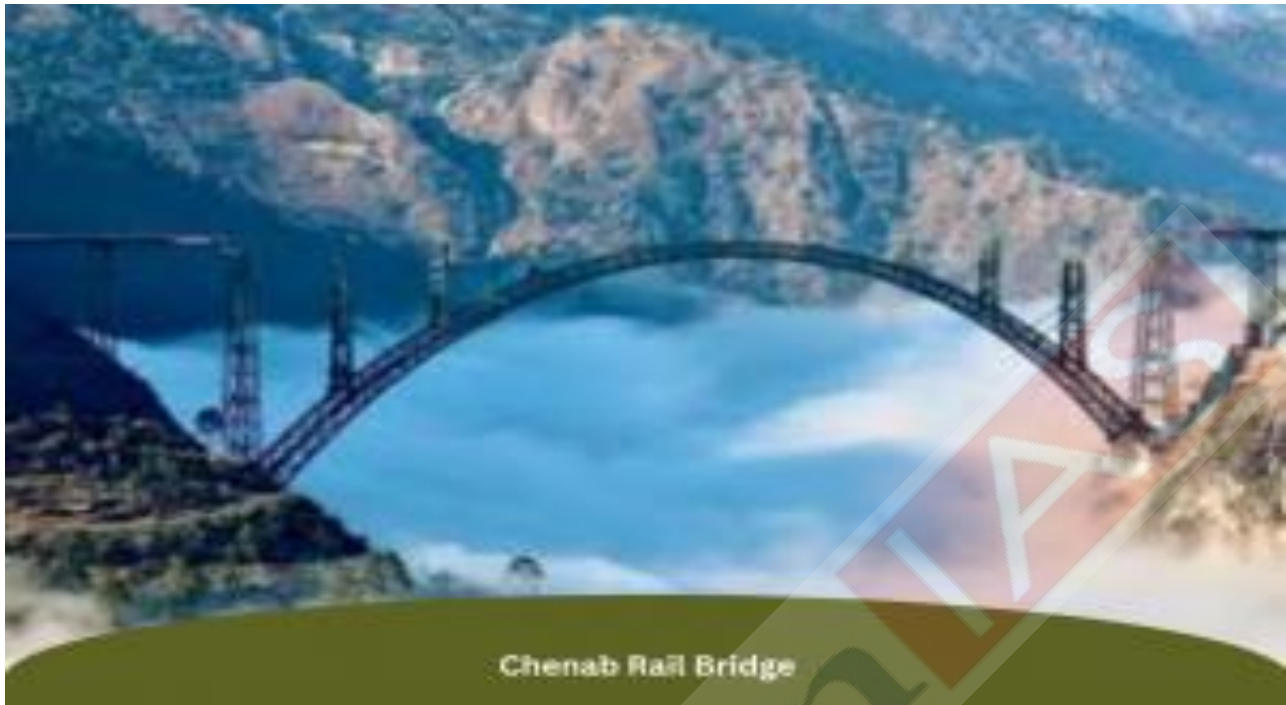
- The Reserve Bank of India's six-member Monetary Policy Committee (MPC) has **slashed the repo rate by a bigger-than-expected 50 basis points to 5.50 per cent**, marking the third consecutive reduction since February 2025.
- The central bank **also cut the cash reserve ratio of banks by 100 basis points to 3 per cent**, releasing **Rs 2.5 lakh crore of lendable resources** to the banking system.

Impacts of Monetary Policy Instruments by the RBI

- **Impact of reducing repo rate:** When the RBI **wants to encourage economic activity** in the economy, it reduces the repo rate.
 - Doing this enables commercial banks to bring down the interest rates they charge (on their loans) as well as the interest rate they pay on deposits, incentivising people to spend money, and businesses to take new loans a little less cost.
- **Impact of increasing repo rate:** When the RBI **wants to control inflation**, it increases the repo rate.
 - Banks thus have to pay **more interest to borrow** from the RBI, which means they will charge more interest to their borrowers, disincentivising people from borrowing money.

Chenab Rail Bridge

News: Prime Minister Narendra Modi inaugurated the Chenab Railway Bridge on Friday, celebrating a historic milestone in India's infrastructure development. The bridge holds the distinction of being the world's highest railway bridge. **Chenab Rail Bridge.**



About Chenab Rail Bridge

- The Chenab Rail Bridge stands at a height of **359 metres above the riverbed**, making it **35 metres taller than the Eiffel Tower**.
- It is constructed across the **Chenab River** in the **Reasi district** of **Jammu & Kashmir**.
- Both the **Chenab Bridge** and the **Anji Bridge** are integral components of the **Udhampur-Srinagar-Baramulla Rail Link (USBRL)** project, which provides **all-weather rail connectivity** to the Kashmir Valley.
- It is designed to withstand high wind speeds and seismic activity, showcasing India's engineering and infrastructure capabilities.
- The bridge plays a vital role in **connecting Kashmir to the rest of India**, promoting **regional development and integration**.

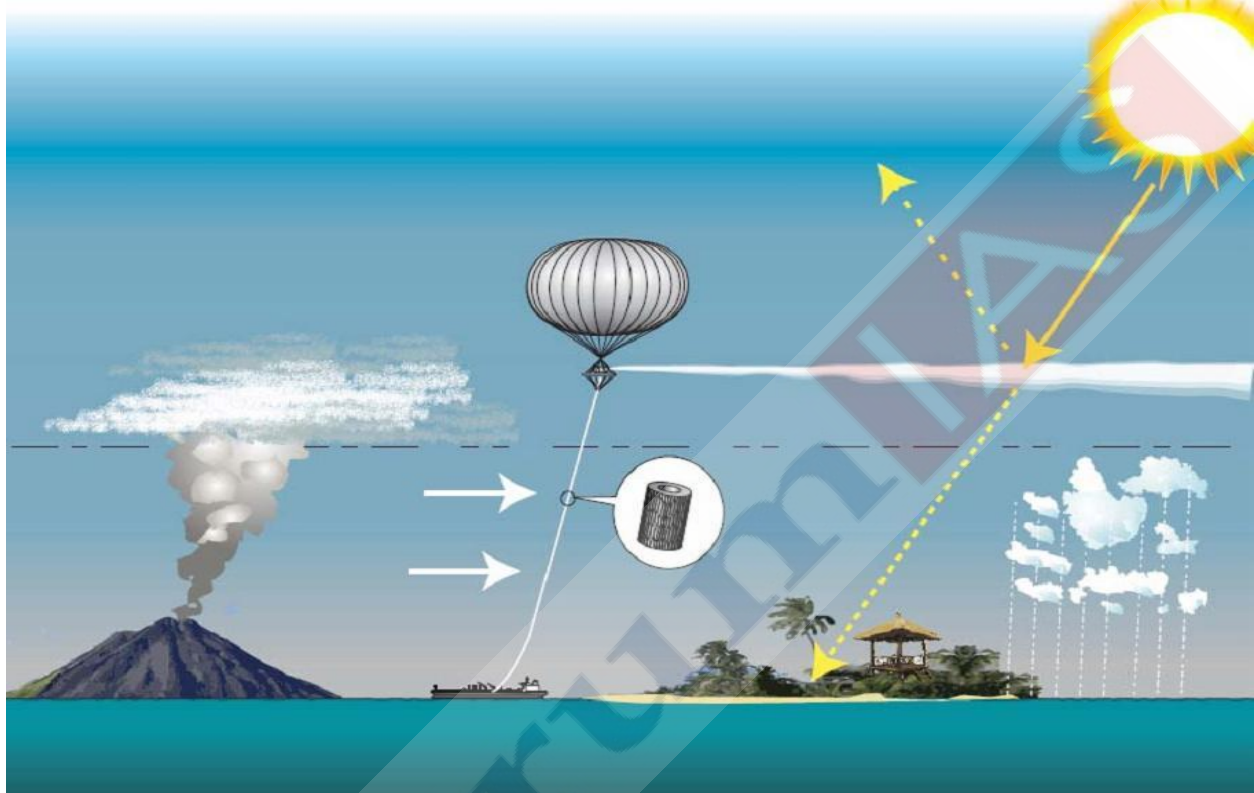
About Chenab River

- It is a significant river of the Indian subcontinent, flowing through **northwestern India** and **northeastern and eastern Pakistan**.
- The Chenab is an important **tributary of the Indus River**.
- The Chenab River originates from the **confluence of two rivers**, the *Chandra* and *Bhaga*, at **Tandi** in the upper Himalayas, located in the **Lahaul and Spiti districts of Himachal Pradesh**.
- In its upper reaches, the river is also referred to as the **Chandrabhaga**.
- From its origin, the river flows westward through the **Union Territory of Jammu and Kashmir**, cutting through steep cliffs between the **Siwalik Range to the south** and the **Lesser Himalayas to the north**.
- It then takes a **southwesterly turn**, entering **Pakistan** and descending from the upland regions into the **broad alluvial plains of Punjab province**.
- In Pakistan, the Chenab receives the waters of the **Jhelum River near Trimmu**, before eventually merging with the **Sutlej River**, which is another tributary of the **Indus River**.
- It is the **largest river in Himachal Pradesh in terms of water volume**.
- The main tributaries of the Chenab River include: **Miyar Nalla, Sohal, Thiroth, Bhut Nalla, Marusudar and Lidrari**.

Stratospheric Aerosol Injection (SAI)

News: A new study has made the controversial concept of Stratospheric Aerosol Injection (SAI) more technically and economically feasible by suggesting the use of modified existing aircraft instead of waiting for expensive high-altitude planes. **Stratospheric Aerosol Injection (SAI).**

About Stratospheric Aerosol Injection (SAI)



Stanford University

- It is a proposed climate engineering technique that involves **spraying tiny reflective particles into the stratosphere** — the upper layer of Earth's atmosphere — to reflect sunlight and cool the planet.
- **Purpose:** The goal is to **reduce global warming by mimicking the cooling effects observed after volcanic eruptions**, which release natural aerosols into the atmosphere. These aerosols scatter incoming solar radiation in the stratosphere, causing less solar energy to be absorbed by the troposphere.
- **Process:** SAI is implemented by spraying large quantities of tiny reflective particles into the stratosphere, thereby cooling the planet by reflecting sunlight back into space.
- **Method:** Reflective particles such as **sulfur dioxide, salt, or calcium carbonate** would be dispersed **from aircraft, rockets, artillery**, or pumped through high-altitude balloons or hoses. These particles form a reflective layer in the stratosphere that bounces sunlight back into space, reducing the Earth's surface temperature.

Indravati National Park

News: Security forces have recovered the bodies of five Maoist cadres during the ongoing anti-Naxal operations in the Indravati National Park area of Bijapur district in Chhattisgarh. **Indravati National Park.**

About Indravati National Park



Source – Chhattisgarh Govt.

- **Location:** It is a national park located in **Bijapur district of Chhattisgarh** state of India.
- **Naming:** The park derives its name from the **Indravati River**, which flows from **east to west** and forms the **northern boundary** of the reserve with the Indian state of **Maharashtra**.
 - **Chitrakote Falls:** A famous waterfall on the Indravati River (outside the park boundary, but part of the river system).
- **Vegetation:** Three major forest types are recognized in Indravati: **Moist Mixed Deciduous Forest** with Teak, **Moist Mixed Deciduous Forest** without Teak, and **Southern Dry Mixed Deciduous Forest**.
- **Flora:** Some **common species** found here are – teak, achar, karra, kullu, shisham, semal, haldu, arjun, bel, and jamun.
- **Fauna:** It is home to one of the **last populations of rare wild buffalo**. Other animals like Royal Bengal Tiger, Leopard, Indian Gaur (Bison), Sloth Bear, Dhole (Wild Dog), Nilgai, Chital, Sambar, Black Buck, Barking Deer are also found.
- **Recognition:** It attained the status of a **national park in 1981** and a **tiger reserve in 1983** under the famous **Project Tiger of India**.
 - It is **one among the two project tiger** sites in Chhattisgarh along with **Udanti-sitanadi**.
- **Tribes:** It is home to indigenous tribal communities such as the **Gond and Muria tribes**.

Asafoetida (Heeng) Cultivation

News: The first flowering and seed set of heeng at Palampur was reported on May 28, 2025, by CSIR, showing heeng can indeed be successfully cultivated in India.

Facts about Asafoetida (Heeng)



Source – PIB

- It is a **herbaceous plant** of the **umbelliferae family**.
- It is a **perennial plant** which produces **oleo-gum resin** from the **roots** after **five years of plantation**.
- **Climatic conditions required:** It thrives in **cold, arid environments**.
 - **Soil:** The plant prefers **sandy, well-drained soil** with **low moisture**.
 - **Rainfall:** Ideally **annual rainfall of 200 mm or less** is good, though it can **tolerate up to 300 mm** in cultivated regions like the Indian Himalaya.
 - **Excessive rainfall or high soil moisture** can hinder growth.
 - **Temperature:** It flourishes in temperatures of **10-20° C**, tolerates highs of up to **40° C**, and withstands winter lows down to **-4° C**.
 - In **extremely dry and cold weather**, heeng plants typically become dormant to survive.
- **Suitability in India:** These requirements make **high-altitude, semi-arid regions like Lahaul-Spiti and Uttarkashi** in India suitable for its cultivation.

Significance

- It is one of the widely used **spices** in Indian cuisine since time immemorial.
- **Benefits:** It has a range of **medicinal properties**, including relief for **digestive, spasmodic and stomach disorders, asthma and bronchitis**.
- It is also commonly used to help with **painful or excessive bleeding during menstruation and premature labour**.

Asafoetida (heeng) cultivation in India

- India is world's **largest consumer** of heeng.
- There is **no production of heeng** in India and currently, it is being **imported** annually from **Afghanistan, Iran and Uzbekistan**.

Government initiative

- The government launched a national effort to promote indigenous cultivation of heeng under the **CSIR-Institute of Himalayan Bioresource Technology (IHBT) in Palampur, Himachal Pradesh**.
- As part of this programme, CSIR-IHBT **procured heeng seeds, initially from Iran, and later from Afghanistan**.

- Import permits were taken from the **ICAR-National Bureau of Plant Genetic Resources (NBPGR) in New Delhi**, the designated nodal agency for plant germplasm import and quarantine.
- Controlled trials were conducted at IHBT Palampur and its **Centre for High Altitude Biology in Ribling in Lahaul & Spiti**.
- To further institutionalise this progress, the **Heeng Germplasm Resource Centre was established** at IHBT Palampur and was formally inaugurated on March 5, 2022.
 - It serves as the national hub for conservation, research, training, seed production, and plant propagation vis-à-vis heeng.

Villages that became early adopters of this initiative were:

- Lahaul & Spiti: Madgran, Salgran, Beeling, Keylong
- Mandi: Janjehli, Majhakhal, Kataru, Ghayan, Karsog
- Kinnaur: Kafnoo, Hango, Maling, Reckong Peo, Kalpa, Moorang, Graming, Katgaon
- Kullu: Bagsaid, Dhaugi-Sainj, Kotla-Banjar
- Chamba: Pangi, Deol, Bharmour, Mahala, Tooh

Tardigrades

News: Among the scientific experiments to be conducted by astronauts onboard the International Space Station (ISS) include the one that will examine the revival, survival, and reproduction of tardigrades in space.

Tardigrades.

About Tardigrades



Figure 14. Source – IE

about **5 mm long** when fully grown, have **four pairs of legs**, with 4-6 claws on each foot. They can only be **seen under a microscope**.

- **Feeding habit:** Tardigrade feed on **plant cells, algae and small invertebrates**.
- **Distribution and habitat:** They can be found almost **everywhere** — from the **highest mountains** to the **deepest oceans**.
 - Their **most common habitat** is the **thin film of water found on mosses and lichens**, which bestows upon these animals the moniker of “**moss piglets**”.

Scientific significance of Tardigrades

- They are also known as “**water bears**” as they are robust **aquatic animals** that have been around for roughly **600 million years**.

- **Naming:** They derive their name from the fact that they look like an **eight-legged bear with a mouth** that can **project out like a tongue**.

- **Discovery:** They were discovered in 1773 by German zoologist Johann August Ephraim Goeze.

- **Shape and size:** They are

- **Resilient:** They are among the **most resilient animals** which can **survive extreme conditions** such as exposure to outer space.
- **Cryptobiosis:** They owe their incredible **resilience to cryptobiosis**.
 - It is a state in which organisms bring their **metabolism to a near-complete standstill** in the face of adverse environmental conditions.
- **Anhydrobiosis:** Tardigrades can **reduce their metabolism to less than 0.01% of normal**, and **drop their water levels by more than 95%**, a state called **anhydrobiosis**.
- **Tun state:** Both **anhydrobiosis and cryptobiosis** result in the emergence of a **durable shrunken state**, called **tun**, in which tardigrades are able to **withstand extreme conditions**.
- **Protein generation:** They **produce unique proteins** such as **cytoplasmic-abundant heat soluble (CAHS) proteins** which are key to their resilience.
 - These proteins form a **gel-like matrix within their cells**, vitrifying and **protecting essential cellular components from destruction**.
- **Potential uses:** A better **understanding of tardigrades' survival mechanisms** can potentially have several **applications**: from helping scientists develop **more resilient crops** to creating **advanced sunscreens** to preserving human tissues and organs for transplantation.

Coalition for Disaster Resilient Infrastructure (CDRI)

News: Recently, the seventh edition of the International Conference on Disaster Resilient Infrastructure (ICDRI) was held on June 6–7 in Nice, France. **Coalition for Disaster Resilient Infrastructure (CDRI)**



About Coalition for Disaster Resilient Infrastructure (CDRI)

- It is a global partnership comprising **46 countries and 8 partner organizations**.
 - CDRI is dedicated to enhancing the resilience of infrastructure systems to climate and disaster risks. It includes national governments, international organizations, and private sector
 - Headquarters: **New Delhi, India.**
 - It was **introduced in 2019** during the **United Nations Climate Action Summit** held in New York.
- It is funded through **voluntary contributions**.
 - Major donors: **India (host), USA, UK, Australia, France, Germany, Japan, Canada, and the World Bank.**
 - It supports international goals such as the [Sendai Framework for Disaster Risk Reduction](#).
 - **Key Focus Areas:** CDRI's ten core initiatives includes Small Island Developing States (SIDS), Urban resilience, Data and early warning systems, Finance and governance, Critical and social infrastructure, Mountain ecosystems, Africa-focused projects, Resilience for major events, Research and innovation and Capacity building and training
 - **Governance Structure:**
 - **Governing Council:** All members; meets annually.

- **Executive Committee:** Oversees programmes; meets twice a year.
- **Secretariat:** Led by Director General; handles daily operations.

Civil Registration System (CRS)

News: A new set of data from the Civil Registration System (CRS) shows that about 86.5 lakh deaths were registered in the country in 2022, substantially lower than the peak of 2021 which had seen a big spike in deaths due to Covid pandemic. **Civil Registration System (CRS)**

About Civil Registration System (CRS)



- It is popularly known as birth and death registration system.
- It is the recording of vital eventse. Birth, Death & Still Birth under the statutory provisions on continuous and permanent basis.
- CRS falls under the Concurrent list of the Constitution of India at No. 30.
- Nodal Ministry:

Ministry of Home Affairs (MHA)

- **Statutory provisions:** The registration of birth and death is done under the provisions of a central Act namely **Registration of Births and Deaths (RBD) Act, 1969 (amended in 2023)**.
 - Under the provisions of RBD Act, 1969, the **registration of birth and death is mandatory**.
 - The events of births, still births and deaths are **registered at the place of occurrence** of the event i.e where the event took place, **within 21 days** from occurrence of event.
- **Registration Functionaries**
 - **Central level:** The **Registrar General of India (RGI)** at the Central level coordinates and unifies the activities of registration **throughout the country**.
 - The **Office of the Registrar General, India, (ORGI)** obtains data on causes of death from the Chief Registrar of Births and Deaths of different States and Union Territories, under the Registration of Births & Deaths Act, 1969 (amended in 2023).
 - **State level:** The **State authority (Chief Registrar)** has been declared as the chief executive authority in the respective State for implementing the provisions of RBD Act.
 - **District level:** The **District Registrar** for each district within the State is responsible for carrying into execution the provision of RBD Act.
 - **Local level:** At lowest level, the **Registrars** are responsible for registering the events occurred in his/her **area of jurisdiction** and **issue certificates of birth and death**.
- **Features**
 - The RBD (Amendment) Act, 2023 makes it **mandatory for all medical institutions** to provide a **certificate** as to the cause of death to the Registrar and a copy of the same to the nearest relative.

- **Certification of Cause of Death (MCCD)** – an integral part of the **Vital Statistics System**, aims at providing a **reliable and temporal database** for generating cause-specific **mortality statistics**.
- **Significance**
 - Vital statistics generated from civil registration significantly contribute to the formulation of **effective and efficient evidence-based policy** across multiple sectors.

Flue gas desulphurisation (FGD)

News: Power Minister says that the Central Pollution Control Board will decide on future of flue gas desulphurisation units. **Flue gas desulphurisation (FGD)**

About Flue Gas Desulphurisation (FGD)

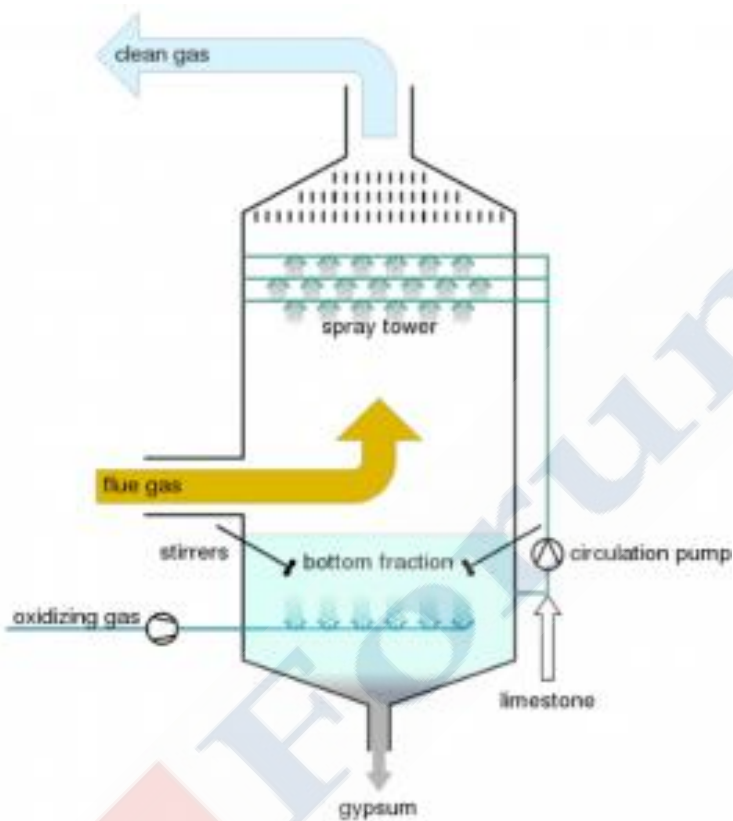


Figure 15. Source – ResearchGate

- Flue-gas desulfurization (FGD) is a **set of technologies** used to **remove sulfur dioxide (SO₂)** from **exhaust flue gases of fossil-fuel power plants** and from the emissions of other sulfur dioxide-emitting processes such as **waste incineration**.

- These are an **additional piece of equipment** required to be retro-fitted in TPPs to cut harmful sulphur dioxide emissions resulting from burning coal.

Flue Gas

- Flue gas (sometimes called **exhaust gas or stack gas**) refers to the **gas that is released from combustion plants**.
- It is a **by-product** of burning fossil fuels.
- Flue gas actually contains a **mixture of gases**, such as carbon monoxide (CO), carbon dioxide (CO₂), water vapor, nitrogen oxides (NO & NO₂), sulfur dioxide (SO₂), other trace pollutants, and often some particulate matter.

Ill effects of Sulphur Dioxide

- Sulphur dioxide emissions can **hover in the atmosphere** and form **aerosols of sulphates** that can temper the **heat** from global warming and exacerbate particulate **matter pollution** and **respiratory** diseases.

Categorization of Thermal Power Plants

- They are categorized into **A, B, and C** based on their **location and proximity to areas** with critical pollution or high population density for the purpose of installing Flue Gas Desulphurization (FGD) systems.
- **Category A plants:** The power plants located in a **10 km radius of the National Capital Region, and cities with a population of over one million**, are required to install FGD units.
 - There are 66 such plants, and only 14 of them have installed FGD units.
 - All these plants are required to comply by 2027.
- **Category B plants:** Those TPPs located in a **10-km radius of 'Critically Polluted Cities' or 'Non-Attainment Cities'**.
 - They would be eligible for **exemption on a "case by case" basis**, upon a **joint review** by the Central Electricity Authority or the CPCB.
 - There are 72 such plants, with only 4 having installed FGD units.
 - These plants have a **deadline of 2028**.
- **Category C plants:** The remaining 462 plants come under Category C.
 - Thirty-two of them have installed FGD units.
 - These plants have a 2029 deadline.
- **Deadline extensions:** So far, the government has granted three extensions since 2017, the latest being in December 2024, for plants **to comply by 2027-2030**.

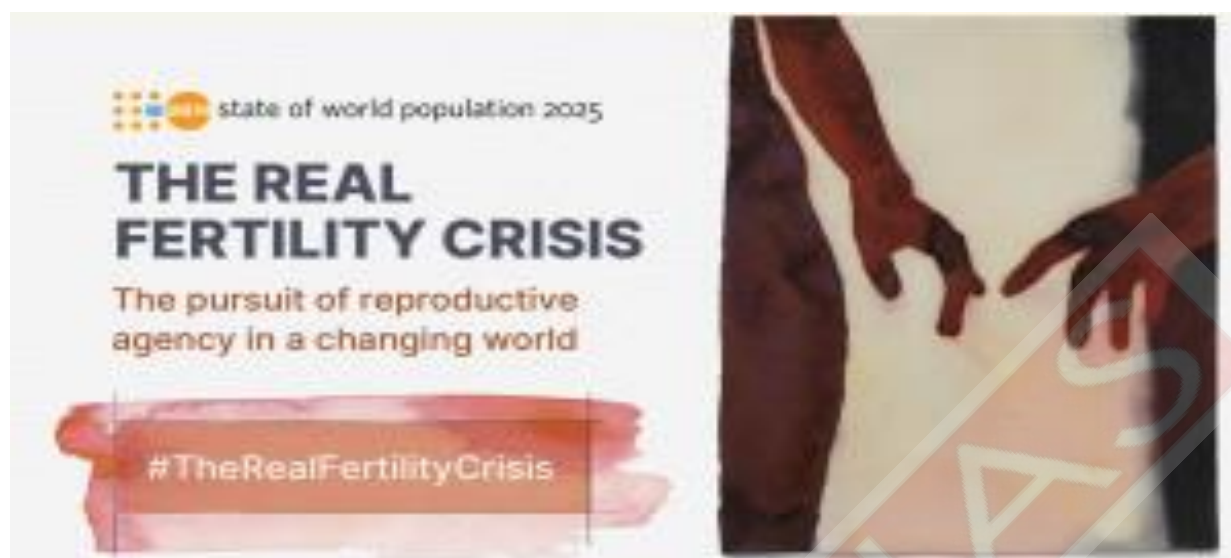
Present Scenario

- **92% of India's 600 TPPs haven't yet installed FGD units.**
- **High installation cost:** It is estimated that the current installation cost of such equipment is about **₹1 crore per megawatt (MW)** of installed power capacity.
- **Note:** The fitment of FGDs in all TPPs in India is **not necessary to comply** with the **NAAQ (National Ambient Air Quality) standards** whose compliance is essential to safeguard public health.

State of the World Population 2025 Report

News: A UN report says that the population is expected to grow to 170 crore before starting to dip in about 40 years. **State of the World Population 2025 Report.**

About State of the World Population 2025 Report



Source – UNFPA

- **Released by:** United Nations Population Fund (UNFPA)

Key Highlights of Report about India

- **Total population:** India's population is estimated to reach **1.46 billion in 2025**, the highest in the world.
- **TFR:** The country's total fertility rate (TFR) has **declined to 1.9**, falling below the replacement level of 2.1.
 - **The TFR** measures the number of children a woman is expected to have throughout their reproductive age.
 - **Replacement level TFR** is the rate needed for each generation to replace the previous generation's population.
- **Future population estimates:** The population is expected to grow to 170 crore before starting to dip in about 40 years.
- **Age cohorts:** India's youth population remains significant –
 - 24% of the population in the age bracket of 0-14
 - 17% in age group of 10-19
 - 26% in the age group of 10-24
- **Elders:** The elderly population (**65 and older**) currently stands at **7%**.
- **Workforce:** The report estimates that **68%** of the population in India is of **working age (15-64 years)**.
- **Life expectancy:** The life expectancy at birth is projected to be **71 years for men** and **74 years for women**.

CROPIC Initiative

News: The Ministry of Agriculture and Farmers Welfare plans to launch CROPIC, a study to gather crop information using field photographs and AI-based models. **CROPIC Initiative**



Figure 16. Source – PMFBY website

About CROPIC Initiative

- CROPIC stands for “Collection of Real Time Observations & Photo of Crops”.
- It is a study to gather crop information using field photographs and AI-based models.
- CROPIC is envisaged to be used in collection of geotagged crowd-sourced photographs from farmers and field coordinators through smartphones.
- Purpose
 - CROPIC is an initiative under Pradhan Mantri Fasal Bima Yojana (PMFBY) with a dual purpose of monitoring crop health and stress and automation of crop loss assessment and payment of claims to affected farmers using computer vision

technology and photo-analytic models.

- It will assist in **creating a rich directory of crop signatures**, and will also lead to **automation of loss assessment and compensation** to eligible farmers under PMFBY.
- This initiative is **part of digital innovations in agriculture** for fostering financial resilience.
- **Coverage**
 - CROPIC will be rolled out **initially in at least 50 districts per season**.
 - These districts will be well distributed in different agro-climatic zones **covering the three major notified crops** (notified crops are those covered under insurance schemes like PMFBY) in each district for each season, initially.
- **Funding**
 - The **Fund for Innovation and Technology (FIAT) under PMFBY** will be used for funding CROPIC.
 - The FIAT has a total outlay of **Rs. 825 crore** for different technology innovations under crop insurance schemes.

ICC Hall of Fame

News: The ICC announced seven new additions to the ICC Hall of Fame with a large group of former greats added as the latest inductees.

About ICC Hall of Fame



Source – ICC

- **Origin:** The ICC Cricket Hall of Fame was launched on **2 January 2009** in association with the **Federation of International Cricketers Associations (FICA)**, as part of the **ICC's centenary year celebrations**.
- The ICC Cricket Hall of Fame **recognises the achievements of the legends** of the game from cricket's long and illustrious history.
- **Eligibility criteria**
 - To be inducted into the ICC Hall of Fame, a player must **have retired from international cricket for at least five years**, and demonstrated **outstanding achievements**, impact on the game, and long-standing contributions to cricket at the global level.
- **Player inductions**
 - The **initial intake of inductees was the 55 players** named in the FICA Hall of Fame, which ran between **1999 and 2003**.
 - This was **supplemented by a select group of inductions each year**, which **started in 2009**.
- **Ceremony**
 - Induction ceremonies **take place throughout the cricket calendar** where the inductees are presented with a **commemorative ICC Cricket Hall of Fame cap**.
- **ICC Hall of Fame 2025 list**
 - **Seven former players** to have been inducted by the ICC – M S Dhoni, Australia's Matthew Hayden, former South Africa captain Graeme Smith, former New Zealand skipper Daniel Vettori, South African Hashim Amla, former Pakistan captain Sana Mir and England's Sarah Taylor.
- **Indians in ICC Hall of Fame list**
 - **Dhoni is the 11th Indian** to be inducted into the ICC Hall of Fame after Sunil Gavaskar, Sachin Tendulkar, Virender Sehwag, **Diana Edulji (women cricket)**, Anil Kumble, Bishan Singh Bedi, Kapil Dev, Rahul Dravid, Vinoo Mankad and **Neetu David (women cricket)**.

Exercise Khaan Quest

News: The Indian Army contingent reached Ulaanbaatar, Mongolia for the Multinational Military Exercise KHAAN QUEST, scheduled to be conducted from 14th to 28th June 2025.

About Exercise Khaan Quest



Figure 17. Source – PIB

- It is an **annual multinational military peacekeeping** exercise event.
- The exercise brings together **military forces from around the world** to collaborate and enhance their peacekeeping capabilities.
- **2025 Edition:** It is scheduled to be conducted from 14th to 28th June 2025 in Ulaanbaatar, Mongolia.
- **2024 edition:** It was conducted in **Mongolia** from 27th July to 9th August 2024.
- **History:** The exercise **first started** as a **bilateral** event between **USA and Mongolian** Armed Forces in the year

2003.

- Subsequently, from the **year 2006 onwards** the exercise graduated to a **Multinational Peacekeeping Exercise** with **current year being the 22nd iteration**.
- **India in 2025 Edition:** The Indian Army contingent comprising 40 personnel is being represented mainly by troops from a Battalion of the **KUMAON REGIMENT** along with personnel from other Arms and Services.
- **Aim:** The aim of Exercise is to **prepare Indian Armed Forces for peacekeeping missions** while operating **in a multinational environment**, thereby increasing interoperability and military readiness in peace support operations under **Chapter VII of United Nations Charter**.
- **Significance:** The Exercise will enable the participating countries to **share their best practices** in Tactics, Techniques and Procedures for conduct of joint operations.
 - The exercise will facilitate developing **inter-operability, bonhomie and camaraderie** between soldiers of the participating countries.

Blue NDC Challenge

News: Recently, Brazil and France launched Blue Nationally Determined Contributions (NDC) Challenge initiative at the UN Ocean Conference (UNOC) to dramatically scale up ocean-focused climate action. **Blue NDC Challenge.**



About Blue NDC Challenge

- It is a global initiative launched by **Brazil and France** on **June 9, 2025**, at the **UN Ocean Conference** in **Nice, France**.
- It is aligned with Ocean Breakthroughs under the Marrakech Partnership.
- **Aim:** To place the **ocean at the center of national climate strategies** (Nationally Determined Contributions – NDCs).
- **Institutional Support and Partnerships:** It is being supported by: Ocean Conservancy, World Resources Institute (WRI), Ocean & Climate Platform, Ocean Resilience and Climate Alliance (ORCA) and NDC Partnership
- **Founding countries:** Brazil and France.
- **Eight inaugural participants:** Australia, Fiji, Kenya, Mexico, Palau and Republic of Seychelles

Objectives of the Blue NDC Challenge

- Integrate **ocean-based mitigation and adaptation** in updated NDCs under the **Paris Agreement**.
- Highlight the **climate-regulating role of oceans**.
- Support **resilient, net-zero, and nature-positive development** by 2050.
- Mobilize global cooperation and ambition for **ocean-climate solutions**.

Key Areas of Ocean-Based Climate Action

1. **Marine Ecosystem Restoration and Conservation:** Protecting and restoring mangroves, coral reefs, and seagrasses, and expand Marine Protected Areas to safeguard biodiversity and support carbon sequestration.
2. **Marine Spatial Planning and Coastal Management:** Integrated, climate-smart planning can guide sustainable coastal development and reduce climate risks.
3. **Clean Ocean Energy:** Nations can scale up offshore wind, wave, and tidal energy while phasing out offshore oil and gas production.
4. **Climate-Resilient Fisheries and Aquaculture:** Strengthening sustainability and adaptive practices will help secure ocean health and food security.

5. **Decarbonization of Marine Sectors:** Reducing emissions from shipping and seafood industries is key to achieving ocean-related climate goals.

Gender Gap Index 2025

News: India has ranked 131 out of 148 countries in the World Economic Forum's Global Gender Gap Report 2025, slipping two places from its position last year.

About Global Gender Gap Index



Figure 18. Source – WEF

(119th), Nepal (125th) and Sri Lanka (130th).

- **Economic Participation and Opportunity:** India saw an **improvement** in economic participation and opportunity.
 - The **score rose to 40.7%** (improved by +.9 percentage points), supported by an **increase in estimated earned income from 28.6% to 29.9%**, while **labour-force participation remained steady at 45.9%**.
- **Educational Attainment:** India scored **1%**, reflecting **gains** in female literacy and tertiary education enrolment.
- **Health and survival:** This also **improved** due to a **better sex ratio at birth** and **increased healthy life expectancy**.
- **Political empowerment:** This sub-index **declined**, with women's representation in **parliament dropping from 14.7% to 13.8%**.

Global highlights of the Report

- **Leaders:** **Iceland** leads the rankings for the 16th year running, followed by **Finland, Norway, the United Kingdom and New Zealand**.

- It **annually benchmarks the current state and evolution of gender parity** across **four key dimensions (sub-indexes)**:

- Economic Participation and Opportunity
- Educational Attainment
- Health and Survival
- Political Empowerment.

- **Launched in: 2006**

- **Feature:** It is the **longest-standing index** tracking the **progress of numerous countries' efforts** towards closing these gaps over time.

Global Gender Gap Index, 2025 (19th edition) and India

- India ranked **131st** in global gender parity out of **148 countries**, with a **score of 64.4%**, **down three positions** from the previous year.

- **Comparisons with neighbours:** India is **behind** its neighbours – Bhutan

- The **global gender gap has closed to 68.8%**, marking the strongest annual advancement since the COVID-19 pandemic.
- The **progress made** in this edition was **driven primarily** by significant strides in **political empowerment and economic participation** while **educational attainment and health and survival** maintained near-parity levels above 95%.
- However, despite women representing 41.2% of the **global workforce**, a stark **leadership gap** persists with women **holding only 28.8% of top leadership positions**.

Passage Exercise (PASSEX) 2025

News: The Indian Navy conducted a high-profile Passage Exercise (PASSEX) with the United Kingdom's Carrier Strike Group in the North Arabian Sea on June 9 and 10.

About Passage Exercise (PASSEX), 2025



Figure 19. Source – The Hindu

- **PASSEX** refers to **joint naval drills** conducted between friendly navies when they cross each other during deployments.
- The PASSEX 2025 between **India and U.K.** was held in the **North Arabian Sea**.
- **Contingents involved:** The Indian Navy deployed **INS Tabar, a submarine, and a P-8I maritime patrol aircraft**, which operated alongside the **UK's Carrier Strike Group** led by **HMS Prince of Wales** and accompanied by **HMS Richmond**.
 - The exercise involved coordinated anti-submarine operations complex tactical manoeuvres, integrated helicopter operations and a professional exchange of naval officers.
- **Significance**
 - It enhances **interoperability, communication, and strategic cooperation** at sea.
 - It demonstrates the **deepening cooperation** between the Indian Navy and the Royal Navy, showcasing a shared commitment to maritime security and robust bilateral ties.

Black Box

News: Authorities have recovered one of two black boxes of the London-bound Air India flight that crashed in a crowded area near Meghaninagar in Ahmedabad.

About Black Box

Black Box

A black box in aviation refers to a pair of flight recorders that capture key flight information. They are critical for investigations following an aircraft crash

NEWS 18
creative
Source: News Sources



Figure 20. Source – News18

- a underwater locator beacon
- a “crash survivable memory unit” to withstand a force equivalent to 3,400 times the force of gravity
- a recording chip on a circuit board.
- **Naming as ‘Black’ box**
 - This equipment had sensors that would optically project around 10 parameters onto a photographic film.
 - This film ran continuously in a box that was constructed to prevent any light from entering it. **Hence, it was called a “black box”.**
- **Surviving the crash**
 - It is made of strong substances such as **steel or titanium** and is **insulated** from factors such as extreme heat and cold.
 - It is purposely **placed towards the tail end** of the aircraft, where the impact of a crash is usually the least.
 - To make black boxes discoverable in situations where they are **underwater**, they are equipped with a **beacon** that sends out ultrasound **signals for 30 days**.

- It is a **small machine** that **records information** about an aircraft **during its flight**.

- It is basically a **flight recorder**.

- This **bright orange or yellow rectangular box (not of black colour)** is crafted to **withstand explosions, fire, water pressure, and high-speed crashes**.

- **Invented by:** It was invented by **Australian scientist David Ronald de Mey Warren** in early 1950s.

- **Black boxes in an aircraft:** Every commercial aircraft carries **two such recorders** – the **cockpit voice recorder (CVR)** and the **flight data recorder (FDR)**.

- **FDR:** It logs critical **technical parameters** including altitude, speed, engine thrust, and flight path data.

- **CVR:** It captures all **cockpit audio** – pilot conversations, radio transmissions, warning alarms, and ambient mechanical sounds.

- **Inside a black box:** A black box consists of **four main parts** which are-

- an interface to facilitate recording and playback

International Association of Marine Aids to Navigation and Lighthouse Authorities

News: India actively participated as the Vice President of the International Organization for Marine Aids to Navigation (IALA) in the 2nd Session of the IALA Council, held in Nice, France. **International Association of Marine Aids to Navigation and Lighthouse Authorities.**



About the International Association of Marine Aids to Navigation and Lighthouse Authorities

- It was established in 1957 as a **Non-Governmental Organisation (NGO)** ensuring safe and efficient navigation across the world's seas and waterways.
- **Formation:** On **August 22, 2024**, it officially became an **Intergovernmental Organisation (IGO)** after **30 countries** agreed to or approved (ratified or acceded to) the convention. As of now, there are 39 ratifications/acceptances/accessions of the Convention
- **Aim:**
 - To ensure safe, efficient, and sustainable navigation by developing globally harmonised standards for Marine Aids to Navigation.
 - To promote innovation, technical excellence, and capacity-building through credible, practical, and non-commercial guidance.
 - To foster international cooperation and knowledge-sharing among maritime stakeholders to support global maritime obligations.
- **Mandate:** To harmonise global maritime navigation systems, enhance maritime safety, and collaborate with member states, international bodies, and industry on emerging safety and environmental challenges.
- **Membership:** IALA has 200 members, including 80 national authorities and 60 commercial firms. India has been a member since 1957.
- **Headquarters:** Saint-Germain-en-Laye, France.
- The 1st General Assembly of the International Organisation for Marine Aids to Navigation (IALA) was held in **Singapore**.

AviList: First-ever unified global checklist of bird species

News: AviList, the first-ever unified global checklist of bird species, became live on June 12, 2025, after four years of work by the Working Group on Avian Checklists. **AviList: First-ever unified global checklist of bird species.**

About AviList: First-ever unified global checklist of bird species



Figure 21. Source – Cornell Lab

- It is the first-ever unified global checklist of bird species.
- **Launched by:** It is launched under the **Working Group on Avian Checklists**, which includes experts from **BirdLife International**, the **Cornell Lab of Ornithology**, the **American Ornithologists' Society**, the **International Ornithologists' Union**, and **Avibase**.
- It will replace the **International Ornithological Committee (IOC)** and **Clements lists** and will be updated annually.
- **Aim:** It aims to **eliminate confusion** caused by **multiple lists** and to help the global community “speak the same language” for bird conservation and research.
- **Features**
 - The list contains **11,131 species**, **19,879 subspecies**, **2,376 genera**, **252 families** and **46 orders**.
 - It has brought together global thinking on **what constitutes a species** and

shakes up **humanity's understanding** of the avian world.

- The new list will especially **help scientists get clarity** on conservation **priorities**.

Lake Natron

News: Climate impact is jeopardising delicate balance of Tanzania's Lake Natron bringing Flamingos under threat.

Lake Natron

About Lake Natron



Source – Daily Mail

- Lake Natron is a **salt or alkaline lake** located in **north Ngorongoro District of Arusha Region in Tanzania** at the border with **Kenya**.
- It is in the **Gregory Rift**, which is the eastern branch of the **East African Rift**.
- It lies at the foot of the **Ol Doinyo Lengai**, an active **volcano**.
- **Expanse:** It is 57 km long and 22 km wide.
- **Water resources:** It is fed principally by the southern **Ewaso Ng'iro River**, which rises in central **Kenya**, and by **mineral-rich hot springs**.
- **Temperature and alkalinity:** Temperatures at the lake are frequently **above 40 °C**.
 - **High levels of evaporation** have left behind **natron (sodium carbonate decahydrate)** and **trona (sodium sesquicarbonate dihydrate)**.
 - The **alkalinity** of the lake can reach a **pH of greater than 12**, responsible for its **striking red coloration**.
- **Importance:** It is a **Ramsar site** and has a unique composition of **warm waters and salt, caustic soda, and magnesite** deposits that provide ideal conditions for **flamingos** to thrive.
- **Threat:** Agriculture, pollution, and climate change pose significant threats to this unique ecosystem.

Zero-Coupon Bond

News: State-owned PFC has withdrawn its planned issuance of zero-coupon bonds for the second time in over a month, as investors demanded higher yields. **Zero-Coupon Bond.**

About Zero-Coupon Bond



Source – Business Standard

- A zero-coupon bond is a **type of debt instrument** that **does not pay periodic interest**.
- It is also known as the **discount bond**.
- Instead, it is **issued at a deep discount** and **redeemed at its full face value** upon maturity, with the **profit** being the **difference** between the purchase price and the maturity value.
- **Types:** There are **two types** of Zero Coupon Bonds, which are **corporate Zero Coupon bonds** and **Government Zero Coupon bonds**.
- **Suitable tenure for Zero Bond Coupon**
 - The **time and the maturity value** of Zero Coupon bonds share a **negative correlation**.
 - The **longer** until the maturity date, the **less the investors have to pay** for it.
 - Therefore, the Zero Coupon bonds generally come with a **time horizon of 10 to 15 years**.
 - On the other hand, these **bonds with a time period of less than one** can be a short-term investment option.
- **Taxability**
 - Taxability of zero-coupon bonds **depends on the issuer organisation**.
 - Maturity and premature withdrawal of certain types of zero-coupon bonds are **subject to tax under "Capital gain"**.
 - Otherwise, only the interest part is taxable on its maturity under **"Income From Other Sources"**.

Rudrastra UAV

News: India successfully conducted a test of the Rudrastra Hybrid VTOL UAV, demonstrating its capabilities in precision strikes, long endurance, and autonomous return. **Rudrastra UAV**

About Rudrastra UAV



Economic Times

- Rudrastra is an unmanned aerial vehicle (UAV) developed by **Solar Defence and Aerospace Limited (SDAL)**.
- It is a **VTOL drone**, which means it can take off and land vertically like a helicopter.
- It is designed for both **surveillance** and **precision strike** missions in defence.

Key Features

- **Vertical Take-Off and Landing (VTOL):** It helps to operate in tough terrains.
- **Mission Range:** It flies over **50 km** for active missions.
- **Total Range:** It covers over **170 km** including loitering (hovering near the target).
- **Flight Time:** It stays in air for around **1.5 hours**.
- **Live Video Feed:** It provides **real-time, clear visuals** to ground operators.
- The system possesses a precision strike capability and is equipped with a precision-guided warhead.
- It executed a low-height airburst, effectively dispersing damage across a wide area. This feature makes it ideal for **neutralizing enemy camps** or concealed targets.
- It supports **Atmanirbhar Bharat** (self-reliant India) in defence and reduces the need to import foreign weapons

DNA Identification

News: Authorities are using DNA analysis to identify the remains of those killed in the Air India Boeing 787 Dreamliner crash in Ahmedabad. **DNA Identification**

About DNA Identification



Source – Genome Project

- DNA identification is a scientific method used **to identify an individual based on their unique genetic makeup** by comparing their DNA with DNA found in biological samples such as blood, hair, or tissue, to determine if they are the source of the sample.
- Every person has a **unique DNA** that is present in nearly every cell of their body, with the **exception of identical twins**.
- **Use:** DNA identification is the gold standard for **identifying human remains**, especially after mass fatality events in which bodies might not be easy to identify otherwise.

Collecting and Storing Samples

- DNA **survives much better in cold and dry conditions**, than when it is hot and humid.
- This is why samples have to be **collected as soon as possible**, and once collected, should ideally be **frozen at minus 20 degrees Celsius**, or, in the case of **soft tissues** (skin, muscles, etc.), they may be stored in **95% ethanol**.
 - DNA from **soft tissues degrades much faster** than that from hard tissues (bones and teeth).
- To identify who the collected DNA belongs to, **reference samples** are collected from **biological relatives**.
 - Parents and children of the victim are ideal candidates for providing these samples, given that they share 50% of each other's DNA.

Methods of Analysis

- **Short tandem repeat (STR) analysis:** The method evaluates short tandem repeats, which are essentially **short repeating sequences of DNA**.
 - STRs are used for DNA identification as they widely **vary between individuals**.
 - The STRs are typically found on nuclear DNA which is located within the **nucleus of a cell**.
- **Mitochondrial DNA (mtDNA) analysis:** This method is used when **nuclear DNA is degraded or unavailable**.
 - Mitochondrial DNA is **found** within the cell's energy-producing organelles known as **mitochondria**.
 - As mtDNA is present in multiple copies within the cell, it is **easier to recover** from human remains that are not well preserved.
 - This is used for identification because **mtDNA is passed down by the mother, unchanged, to all her children**.

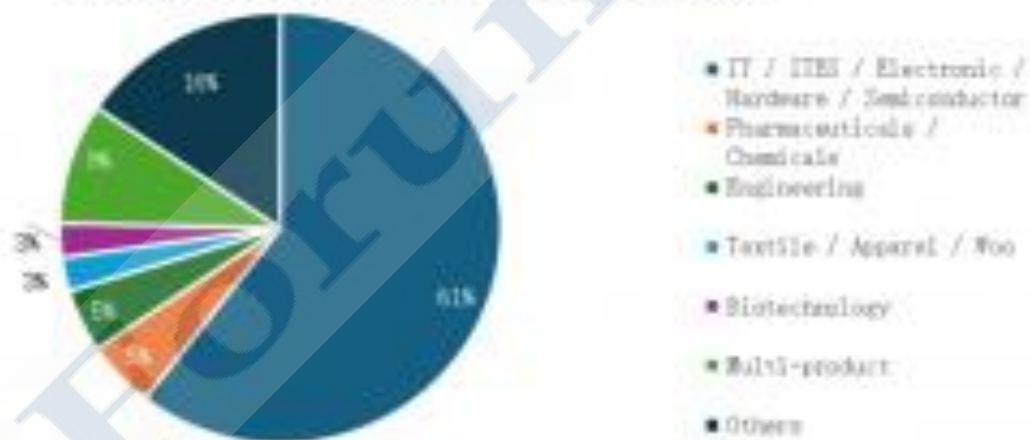
- **Y chromosome analysis:** Humans have **two types of sex chromosomes, X and Y:**
 - Biological **males** typically have **one X and one Y** chromosome, and biological **females** typically have **two X**
 - In this method, a panel of **STR on Y chromosomes**, passed on from father to son, is examined to match the remains of the victim **with their male relatives**.
- **Single nucleotide polymorphisms (SNPs) analysis:** The method is typically used when the DNA to be analysed is **highly degraded**.
 - A SNP is a **variation in the DNA sequence** where a single base — **A, C, G, or T** — at a specific location differs among people.
 - Given that SNPs are **unique to each person**, they can be used for identification purposes with the **help of reference samples** taken from, e.g. victim's **personal belongings** such as a toothbrush and hairbrush.
 - This method is **not as effective as STR analysis**.

Special Economic Zones (SEZs)

News: The government has relaxed key rules related to Special Economic Zones (SEZs) to encourage the domestic manufacture of semiconductors and electronics.

About Special Economic Zones (SEZs)

Sector-wise Distribution of SEZs in India



Source – Ministry of Commerce

- A special economic zone is a **geographical area** in which the **trade and tax laws are relaxed** and **different from that in the rest of the country** so as to be more **conducive to industries**.
- **Aim:** The aim of a SEZ is to **increase investment (FDI), exports and employment**.
- India had setup the **first SEZ in Asia in 1965 at Kandla** (based on **Export Processing Zone (EPZ)** model).
- **SEZ policy:** The SEZ policy was announced by the government in **2000** which was strengthened through **SEZ Act 2005** which was passed by Parliament in May, 2005 which came into effect on 10th February, **2006**.
- **SEZ Rules:** The **SEZ Rules** provide for **different minimum land requirement** for different **class of SEZs**.
 - Every **SEZ is divided into a processing area** where alone the SEZ units would come up and the **non-processing area** where the **supporting infrastructure** is to be created.

Recent changes in the SEZ Rules

- The **Ministry of Commerce and Industry** has notified several **modifications to the Special Economic Zones (SEZ) Rules, 2006** to enhance the **domestic manufacture of semiconductors**.
- **Rule 5 – Size of the SEZ:** The minimum contiguous land area required for the manufacture of semiconductors or electronic components has been reduced to 10 hectares from 50 hectares earlier.
- **Rule 7:** It now **allows the Board of Approval for SEZs to relax the condition** that had required SEZ land to be **“encumbrance-free”**.
 - Land is deemed to be **encumbrance-free** if it **does not have any legal claims, liens, or charges against it**, and when **clear title of ownership** and **transfer** can be established.
- **Rule 18:** It now allows SEZ units in semiconductor and electronics component manufacturing **to supply domestically**, after paying the applicable duties.
 - Conventionally, SEZs are exclusively export-oriented.

Servants of India Society (SIS)

News: Tensions have flared between the Pune-based Gokhale Institute of Politics and Economics (GIPE) and parent Servants of India Society (SIS) over control of a key bank account.

About Servants of India Society (SIS)



Figure 22. Source – SIS

young Indian nationalists including **S. Srinivas Shastri, Hriday Nath Kunzru, and A.V. Thakkar** enrolled as members.

- Later **M. K. Gandhi** also became a member of Society under guidance of Gokhale.
- **Headquarter:** The organization has its **headquarters in Pune (Poona)** and **branches** in Chennai (Madras), Mumbai (Bombay), Allahabad, Nagpur among other places.
- **Presidents:** **G. K. Gokhale** remained its president from **1905-1915**, followed by **V. S. Srinivas Shastri (1915-1927)** and **Gopal Krishna Devdhar (1928-1936)**.
- The Society began publishing ***the Hitavada***, its **english-language journal** from Nagpur, in **1911**.
- In **1930**, the society established the **Gokhale Institute of Politics and Economics, Pune**.
- **Post-Independence work**
 - The SIS **continues to be an active** organization today, more than a century after its establishment.

- **Founders:** The Servants of India Society (SIS) was founded by **Gopal Krishna Gokhale**, along with **K. Devadhar, A.V. Patwardhan, and N.A. Dravid**, in **Pune, India**, on **June 12, 1905**.

- **Objectives:** Its objectives were to **train individuals** who were willing to devote their lives to the **country's cause in a religious spirit, for political education and agitation**, and to promote the **national interest** of the Indian people **through constitutional means**.

- The members of the Society were considered as **young missionaries** of Indian nationalism.

- **Prominent members:** Several

- While some of its activities have evolved and changed over time, the SIS remains **committed** to its **original mission of promoting education, social reform, and political freedom** in India.

Key Facts about Cyprus

News: Prime Minister Narendra Modi recently visited Cyprus marking the first stop of his three-nation tour. **Key Facts about Cyprus.**



About Cyprus

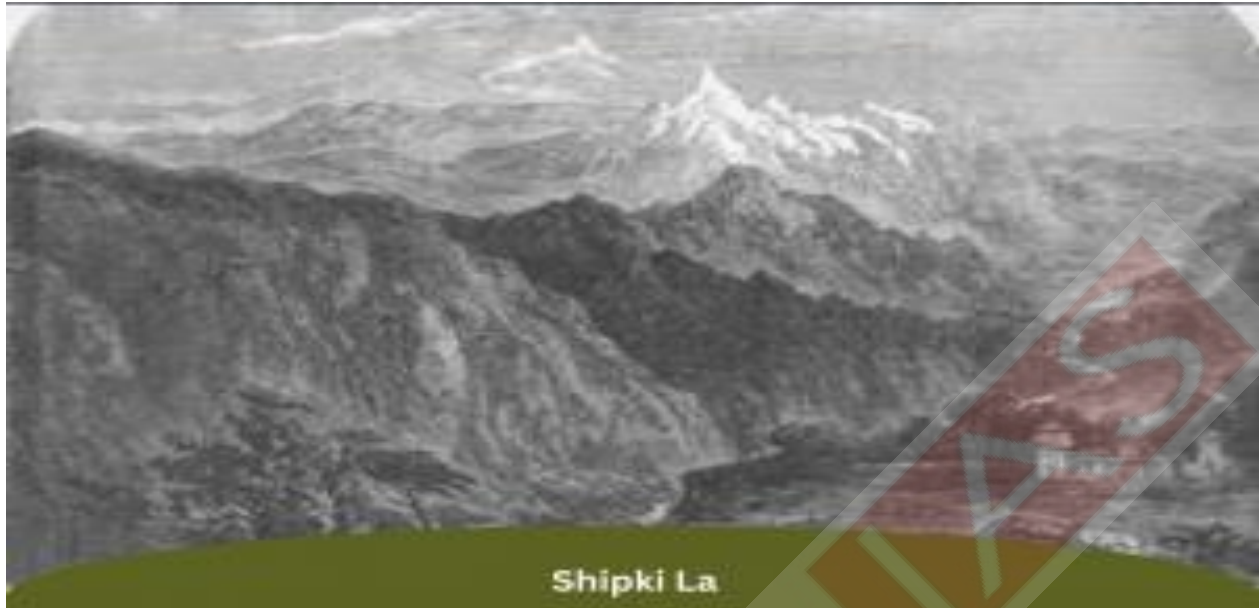
- **Location:** Cyprus is an island nation in the **eastern Mediterranean Sea**, located about 65 km south of Turkey and 100 km west of Syria.
- It is the **third-largest island in the Mediterranean, after Sicily and Sardinia**, with a total area of 9,251 square kilometers.
- **The capital of Cyprus is Nicosia**, which is also the only divided capital city in the world.
- The terrain includes the Kyrenia

Mountains in the north, the Troodos Mountains in the south, and the Mesaoria Plain in between. Mount Olympus (Troodos), at 1,951 meters, is the highest point on the island.

- **Climate:** Cyprus has a typical Mediterranean climate with hot, dry summers and mild, wet winters.
- **History:** Cyprus **gained independence from British colonial rule in 1960** and became the Republic of Cyprus.
- The island is now divided between the internationally recognized Republic of Cyprus in the south and the Turkish Republic of Northern Cyprus in the north, recognized only by Turkey.
- A United Nations peacekeeping force patrols the **"Green Line"**, which separates the two parts of the island.
- **Official language:** Greek and Turkish, and English is widely spoken.
- **Agriculture:** Major crops include **citrus fruits, potatoes, grapes, and olives**.
- **Economy:** The Cyprus economy is dominated by **services, particularly tourism, finance, and shipping**. It has **historically been known for its copper, with mining** dating back to 2500 BCE.
- The country is a **major producer of solar energy**, but imports all its petroleum.
- Major historic and UNESCO sites include **Petra tou Romiou, ancient Paphos, Choirokotia, and the painted churches of the Troodos**.

Shipki La

News: Recently, Himachal Pradesh has opened the Shipki La Pass for domestic tourists. **Shipki La**



About Shipki La

- Shipki La is a motorable mountain pass located in **Kinnaur district, Himachal Pradesh**, near the **India-Tibet (China) border**.
- It sits at an altitude of **3,930 metres above sea level**.
- The Sutlej River, known as **Langqên Zangbo** in Tibet, **enters India from the Tibetan plateau near the Shipki La Pass**.
- The Shipki La Pass lies on the **India-China border**, connecting **Kinnaur district in Himachal Pradesh** with **Ngari Prefecture in Tibet**.
- It is one of India's **designated border trading points with Tibet**, alongside **Nathu La in Sikkim** and **Lipulekh in Uttarakhand**. The pass is located near the **town of Khab**.
- In earlier times, Shipki La was known as **Pema La**, meaning "Shared Gate" or "Shared Pass", reflecting its role in facilitating cultural and commercial exchanges.
- Following the **1962 Sino-Indian War**, it was designated as part of the **Line of Actual Control (LAC)**.

Bonn Climate Change Conference

News: The annual Bonn Climate Change Conference began as more than 5,000 government delegates and stakeholders gathered in Bonn, Germany. **Bonn Climate Change Conference**

About Bonn Climate Change Conference



Source – UNFCCC

- It is an **annual mid-year meeting** that takes place under the **United Nations Framework Convention on Climate Change (UNFCCC)** — an international agreement, signed in **1992**, that has provided a **basis for climate negotiations**.
 - Along with the **annual Conference of the Parties (COP)**, it is the **only other regular climate summit** hosted by the UNFCCC.
- **Formal name:** The conference is formally known as the **Sessions of the UNFCCC Subsidiary Bodies (SBs)**.
- **Objective:** The conference takes place to discuss **technical and scientific aspects of climate negotiations**, and set the **agenda for COP**, which usually takes place in November.
- **Attendants:** It is attended by the **members of SBs** — essentially **committees** that assist UNFCCC's governing bodies in implementing and reviewing climate change agreements.
 - The meeting is also attended by **Indigenous representatives, international organisations, scientists, and civil society representatives**.
- **Importance: Recommendations** made at the SBs frequently appear in **final decisions** acted upon by parties at the **COP**.
 - Here, **implementation of agreements** set at the previous COP is also discussed.
- **Key players**
 - There are **two permanent SBs** of the UNFCCC – the **Subsidiary Body for Implementation (SBI)** and the **Subsidiary Body for Scientific and Technological Advice (SBSTA)**.
 - **SBI** assists UNFCCC governing bodies in the **assessment and review of the implementation of their decisions**, along with discussions on **financial and technical support to developing countries** which are party to the UNFCCC.
 - **SBSTA** advises governing bodies on **scientific knowledge** related to climate change, serving as the **“link”** between scientific advisors at the IPCC and policymakers serving in party delegations at the COPs.
- **Agenda for 2025**
 - One of the key agenda is the **Global Goal on Adaptation (GGA)**, established in the Paris Agreement in 2015, which is an attempt to **identify a common global goal on adaptation**.

Portulaca bharat – New flowering plant species discovered in Aravali hills

News: A new flowering plant species with unusual morphological characteristics has been discovered in the rocky and semi-arid landscape of Aravali hills near Jaipur. **Portulaca bharat – New flowering plant species discovered in Aravali hills**

About Portulaca bharat

Source – The Hindu

- The new species belongs to the subgenus **Portulaca** section **Neossia**.



- It is currently only known from a **single location in the Galtaji hills (Aravali near Jaipur)** with only **10 individuals** of this species were found in the wild.
- **Features:** It has **opposite** and slightly **conclave leaves** and pale-yellow flowers becoming **creamish-white towards apex**, with the presence of **glandular hairs** on stamen filaments and **thick roots**.
- **Naming:** The naming of the plant **after the country** serves as a symbolic reminder of India's rich and still-unfolding natural heritage.
- **IUCN status:** With no other populations currently known, it has been provisionally assessed as **"data deficient"** under the IUCN Red List guidelines.

About Portulaca genus

- The genus Portulaca currently comprises about 153 species worldwide, primarily found in **tropical and subtropical regions**.
- These **succulent plants** are known for their toughness, **water-storing tissues**, and adaptation to extreme environments.
- In **India, 11 species** are currently known, including **four endemics**, mostly distributed in **dry and semi-arid habitats**.

UNESCO Creative Cities Network (UCCN)

News: Lucknow has officially submitted its nominations for inclusion in the UNESCO Creative Cities Network (UCCN) to be titled "City of Gastronomy". **UNESCO Creative Cities Network (UCCN)**

About UNESCO Creative Cities Network (UCCN)

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Source – UNESCO

- The UNESCO Creative Cities Network (UCCN) is a project of the **United Nations Educational, Scientific and Cultural Organization (UNESCO)**.
- **Launch and Objective:** It was **launched in 2004** to promote **cooperation among cities** which recognized creativity as a major factor in their urban development.
- **List:** Currently, **350 cities** are part of this network which aims towards a common objective of placing creativity and cultural industries at the heart of their development plans.
- Creative fields covered: The network covers **seven creative fields** namely –
 - crafts and folk arts
 - media arts
 - film
 - design
 - gastronomy
 - literature
 - music
- By joining the Network, **cities commit to sharing their best practices** and developing partnerships involving the public and private sectors as well as civil society.

Indian cities in the UCCN

- There are **eight Indian cities** as a part of the network. These are-
 - Kozhikode (Literature)
 - Gwalior (Music)
 - Jaipur (Crafts and Folk Arts)
 - Varanasi (Music)
 - Chennai (Music)
 - Mumbai (Film)
 - **Hyderabad (Gastronomy)**
 - Srinagar (Crafts and Folk Arts)

Gödel Prize

News: A researcher of Indian origin, Eshan Chattopadhyay, has been awarded the 2025 Gödel Prize, one of the most prestigious prizes in theoretical computer science. **Gödel Prize**

About Gödel Prize



Source – University of Texas

- The Gödel Prize is given **annually** for **outstanding papers in the area of theoretical computer science**.
- It has been awarded **since 1993**.
- **Sponsors:** It is sponsored **jointly** by the European Association for Theoretical Computer Science (EATCS) and the Special Interest Group on Algorithms and Computation Theory of the Association for Computing Machinery (ACM SIGACT).
- **Naming:** The Prize is named in honor of **Kurt Gödel** in recognition of his major **contributions to mathematical logic**, which has become the famous “**P versus NP**” question.
- **Award ceremony:** This award is presented with the presentation **taking place alternately** at the EATCS International Colloquium on Automata, Languages, and Programming (ICALP) and the ACM Symposium on Theory of Computing (STOC).
- **Prize money:** The Prize includes an **award of \$5000 (US)**.
- **Eligibility:** The research work nominated for the award should be in the **area of theoretical computer science**. Any research paper or series of papers by a single author or by a team of authors is deemed **eligible if**:
 - The main results were **not published** (in either preliminary or final form) in a journal or conference proceedings before January 1st, 2012.
 - The paper was **published** in a recognized refereed journal no later than December 31, 2024.

Gödel Prize, 2025

- **Winners:** **Eshan Chattopadhyay (of Indian origin)** and David Zuckerman
- **Paper title:** “Explicit two-source extractors and resilient functions”
 - The work created a **method – a two source randomness extractor** – that can convert two imperfect sources of random data into a strong random output, even if both sources are weak.
 - This solved a key problem that had remained open for nearly 30 years.

Exercise SHAKTI

News: The Indian Army contingent departed to participate in 8th edition of the biennial India-French Joint Military Exercise SHAKTI.

About Exercise SHAKTI



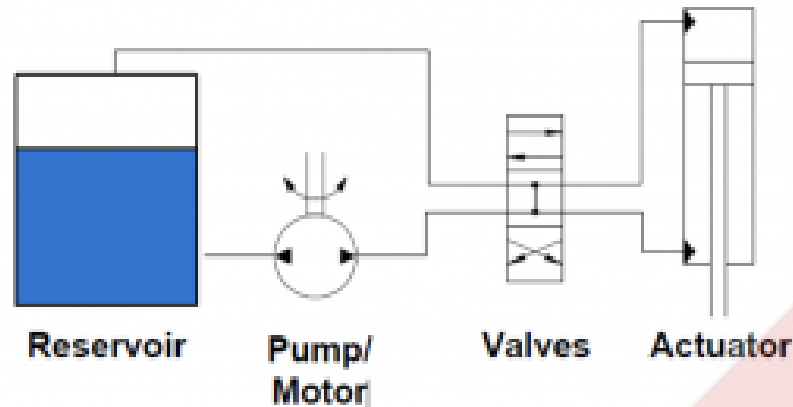
Source – DD News

- It is a **biennial** training event conducted alternatively between **Indian and French armies**.
- **Aim:** It is aimed at enhancing interoperability, operational coordination, and military to military connect.
- **2025 edition:** The exercise will be conducted at **Camp Larzac, La Cavalerie, France** from 18th June 2025 to 1st July 2025.
 - The **last edition** was conducted in **France in November 2021**.
- **Focus:** This edition will focus on **joint operations in a sub-conventional environment** under Chapter VII of the United Nations Charter, with training being conducted in **semi-urban terrain**.
- **Contingents involved:** The Indian contingent comprising of 90 personnel is being represented primarily by a **Battalion of the Jammu and Kashmir Rifles** besides personnel from other arms and services.
 - The **French contingent** comprising of 90 personnel will be represented by personnel from the **13th Foreign Legion Half- Brigade (13th DBLE)**.
- **Significance:** It underscores the growing **defence cooperation** between India and France and will strengthen **strategic ties** between the two friendly nations.

Hydraulic systems & its applications

News: India's hydraulic systems sector is experiencing significant growth, driven by expanding industrial automation, infrastructure development, and increasing demand. **Hydraulic systems & its applications.**

About Hydraulic Systems



Source – Research Gate

- **Principle:** A hydraulics system is based on the simple principle of **Pascal's law**, named for the 17th century French scientist Blaise Pascal.
 - i. The **law states** that when **pressure is applied** to an **incompressible fluid**, it is **transmitted equally** in all directions throughout the fluid.
 - ii. **Pressure** is the amount of **force per unit area**.
- In a hydraulic system, pressure is created by applying **force to a fluid** and it is subsequently **transmitted equally in all directions**, a small force applied over a small area can create a much larger force over a larger area.
- **Parts of a hydraulic system:** There are six general components in every hydraulic system.
 - i. **Pumps:** Used to convert the input mechanical energy into pressure and generate a flow.
 - There are **different types of pumps**, including **gear type, axial piston type, variable delivery type**, and so on.
 - ii. **Pipes:** Used to carry the oil to the end points of the application and return to the tank.
 - iii. **Valves:** Used to control the flow and direction of the pressurised oil.
 - Valves are **classified** broadly based on their actions on the oil: **flow control, direction control, and pressure control**.
 - iv. **Linear actuators or rotary actuators:** Used to deliver the work at the output end.
 - The most common one in use is the **linear actuator**, also known as a **hydraulic cylinder**.
 - In a **rotary actuator** (also known as a hydraulic motor) the output is rotating rather than linear.
 - v. **Tank (with filters):** Used to hold the hydraulic oil.
 - vi. **Sensors or switches:** Used whenever needed from an operational or safety perspective.

Applications and Advantages

- **Application:** Hydraulic systems have a **broad base of applications** today, from **agriculture to waste management, from automation to wind turbines**.
 - They can be used for both **mobile equipment** — cranes, excavators, etc. which move on wheels or tracks — and **static applications** such as a hydraulic press, moulding machines, windmills, etc. wherein the main equipment is static.
- **Advantages:** Hydraulics have many advantages **over mechanical methods** of transmitting energy.
 - The principal ones are **smooth movements, high power to weight ratio, better heat dissipation, smooth controls, and higher precision**.

Rinderpest

News: India has joined an exclusive global network for containing the Rinderpest virus, with the *ICAR-National Institute of High Security Animal Diseases (NIHSAD)*, Bhopal, designated as a Category A Rinderpest Holding Facility. **Rinderpest**



About Rinderpest Holding Facility

- This facility has been recognized by the *World Organisation for Animal Health (WOAH)* and the *Food and Agriculture Organization (FAO)* of the United Nations.
- **Significance for India:** This recognition places India *among only six facilities worldwide* entrusted with the critical responsibility of securely storing rinderpest virus material. The other five are located in the United Kingdom, United States, France, Japan, and Ethiopia.

About Rinderpest (also known as Cattle Plague):

- Rinderpest is a *highly contagious viral disease affecting cloven-hoofed animals*, primarily cattle and buffalo.
- **Cause:** It is caused by a virus belonging to the *Paramyxoviridae* family, genus *Morbillivirus*.
- **Transmission:** The disease spreads through close contact but does not infect humans. It can be fatal for affected animals. Those that recover develop lifelong immunity.
- Rinderpest is notable for being the *second infectious disease to be eradicated globally, after smallpox*.

Performance Grading Index (PGI) 2.0 Report

News: The Education Ministry's Performance Grade Index 2.0 report for 2023-24 shows improvements by 24 States/UTs, and declines by 12.

About Performance Grading Index (PGI) 2.0 Report

- It is an **assessment of school education** across States and Union Territories (UTs) on a scale of **1,000 points**.
- It measures the performance based on **73 indicators from 2 Categories containing 6 Domains as shown in the table below-**

Factly Compilation June 2025

- The PGI was introduced in **2017**, and the ministry revamped it as **PGI 2.0 in 2021**.
- **Aim:** It aims to enable **data-driven policymaking**, promote evidence-based interventions, and encourage States/UTs to improve learning environments and outcomes in schools.
- **Domains:** It is constructed based on **73 indicators from 2 Categories containing 6 Domains:**

Categories	Domain	Indicators	Total Weight
1. Outcomes	Learning Outcomes and Quality (LO)	12	240
	Access (A)	7	80
	Infrastructure & Facilities (IF)	15	190
	Equity (E)	16	260
2. Governance Management (GM)	Governance Processes (GP)	15	130
	Teacher Education & Training (TE&T)	8	100
Total		73	1000

Source -

Ministry of Education

- **Aligned with:** It is completely aligned with Unified District Information System for Education Plus (UDISE +), National Achievement Survey (NAS), **PM POSHAN portal**, **PRABAND portal** and **Vidyanjali Portal**.

Groupings based on rankings

- The states and UTs were grouped into **different performance bands**. E.g. States ranging from **951-1,000 points** are termed **level 1** or '**daksh**' or **401-460 points** is termed **level 10** or '**akanshi-3**', which is the **lowest**.

Scores (% of total points)	Score range	Grade
91% to 100%	941-1000	Daksh
81% to 90%	881-940	Utkarsh
71% to 80%	821-880	Atti-Uttam
61% to 70%	761-820	Uttam
51% to 60%	701-760	Prachesta -1
41% to 50%	641-700	Prachesta -2
31% to 40%	581-640	Prachesta -3
21% to 30%	521-580	Akanshi-1
11% to 20%	461-520	Akanshi-2
Up to 10%	401-460	Akanshi-3

Source - Ministry of

Education
Standings

Grades attained by States/UTs – 2023-24

Scores (% of total points)	Score range	Grade	Names of States/ UTs attaining the respective Grades	Total number of States/UTs
91% to 100%	941-1000	Daksh	None	NIL
81% to 90%	883-940	Utkarsh	None	NIL
71% to 80%	823-880	Ari-Uttam	None	NIL
61% to 70%	763-820	Uttam	None	NIL
51% to 60%	701-760	Pracheta -1	Chandigarh	1
41% to 50%	641-700	Pracheta -2	None	NIL
31% to 40%	581-640	Pracheta -3	Punjab, Delhi, Gujarat, Odisha, Kerala, DNI&DD, Haryana, Goa, Maharashtra & Rajasthan	10
21% to 30%	521-580	Akanshi-1	Puducherry, Himachal Pradesh, A&N Islands, Andhra Pradesh, Tamil Nadu, Karnataka, Lakshadweep, West Bengal, Madhya Pradesh, Sikkim, Uttar Pradesh, Jammu & Kashmir, Uttarakhand & Ladakh	14
11% to 20%	461-520	Akanshi-2	Telangana, Assam, Jharkhand, Tripura, Manipur, Chhattisgarh, Bihar, Nagaland, Mizoram & Arunachal Pradesh	10
Up to 10%	401-460	Akanshi-3	Meghalaya	1

Source – Ministry of Education

- **No state/UT** has scored in the **higher ranges of 761 and above**.
- **Top performers**
 - **Chandigarh** achieved a score of **703**, and is the **sole State to reach Grade Pracheta-1**, for scores between **701 to 760**.
 - **Ten States and Union Territories** — Punjab, Delhi, Gujarat, Odisha, Kerala, Dadra Nagar Haveli and Daman Diu, Haryana, Goa, Maharashtra, and Rajasthan — have scored between **581 and 640**, called Grade **Pracheta-3**.
- **Bottom rankings**
 - **Meghalaya (417.9)** scored the **lowest**, falling into the category of scorers between **401 and 460**, labelled as **Akanshi-3**.
 - **Telangana, Assam, Jharkhand, Tripura, Manipur, Chhattisgarh, Bihar, Nagaland, Mizoram, and Arunachal Pradesh**, who have been put in the **Akanshi-2 category**, as they have scored between **461 and 520**.
- **Middle rankings:**
 - **Puducherry, Himachal Pradesh, Andaman and Nicobar Islands, Tamil Nadu, Karnataka, Lakshadweep, West Bengal, Madhya Pradesh, Sikkim, Uttar Pradesh, Jammu & Kashmir, Uttarakhand, and Ladakh** — which scored between **521 and 580**, labelled **Akanshi-1**.
- **Best improvers across domains**
 - **Bihar and Telangana** have made the highest improvement in the domain of – “**providing access to school education**”.
 - **Delhi, J&K, Telangana** have made highest progress in the “**infrastructure**” domain.

Scoring methodology

- The score of each indicator is calculated by **multiplying the proportionate score of the indicator with its weightage**.

- **For example**, for the indicator of proficiency in Mathematics in Grade 5, the weightage is 20. Thus, if a State has 50% students of Grade 5 who achieved minimum proficiency in Mathematics, its score for this indicator would be 20 times 0.5, which equals 10.

India marks 50 years of its Crocodile Conservation Project in 2025

News: India began its Crocodile Conservation programme in 1975, and this year marks 50 years of this successful initiative.

About Crocodile Conservation Project (CCP)



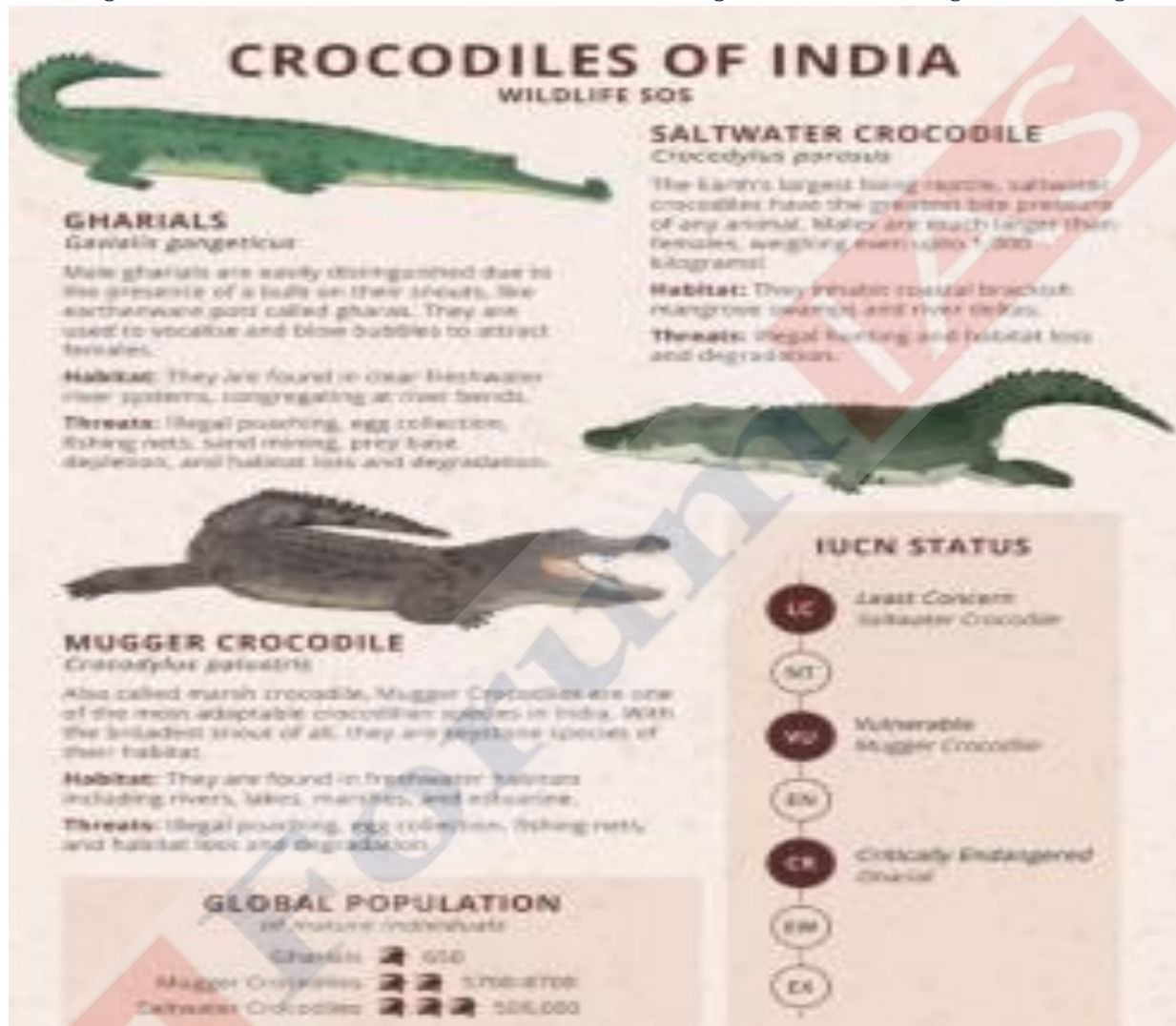
Source – TNIE

- The project was launched in **1975** with the support of the **United Nations Development Programme (UNDP)** and the **Food and Agriculture Organization (FAO)**, initially focusing on **Bhitarkanika National Park** in Odisha.
- The project was **later expanded** to cover Uttaranchal, Rajasthan, West Bengal, Tamil Nadu, Andhra Pradesh, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Andamans, Assam, Bihar and Nagaland where special **rearing stations** were constructed.
- **Aim:** The project aims to **conserve all three crocodile species** found in India:
 - saltwater crocodiles (*Crocodylus porosus*)
 - mugger crocodiles (*Crocodylus palustris*)
 - gharials (*Gavialis gangeticus*).
- **Objectives of CCP**
 - To ensure that the **breeding of species remain captive**.
 - Assortment of **eggs** from regular haunt, ensuing **crosshatching** and nurturing of crocodiles in captivity to lessen mortality because of the natural predators and lastly released into the wild.
- **Outcomes:** Over five decades, these initiatives have become **one of India's most successful wildlife conservation programmes**.
 - **Population recovery:** The project successfully brought crocodilian species back from the brink of extinction.
 - For example, **Bhitarkanika** now hosts 1,826 **saltwater crocodiles**, **Satkosia** gorge is home to 16 **gharials**, and around 300 **muggers** live in Odisha's rivers.

- India now harbors 80% of the world's wild gharial population.

Crocodiles in India

- India is home to three main kinds of crocodile species – the **gharial (critically endangered)**, the **salt water crocodile or salties (least concern)**, and the **muggers (vulnerable)**.
- **Threats:** These species face increasing threats from **habitat loss, poachers**, pollution, riparian agriculture, artificial embankments, construction of barrages and dams, and illegal sand-mining.



Source – Wildlife SOS

Note – World Crocodile Day is celebrated on June 17th every year.

Key Facts about Croatia

News: PM Modi hopes India and Croatia to make long term plans for defence cooperation, after a trip to Croatia.

Key Facts about Croatia



Source – Britannica

- **Location:** It is a small, crescent-shaped country located in the **northwestern part** of the **Balkan Peninsula** in the southeastern Europe, on the coast of the **Adriatic Sea**.
- **Borders:** It borders Slovenia, Hungary, Serbia, Bosnia and Herzegovina, Montenegro and shares a maritime border with Italy to the west.
- **Capital:** Zagreb
- **Topography:** **Karst topography** makes up about half of Croatia and is especially prominent in the **Dinaric Alps**.
- **Climate:** It experiences the **Mediterranean and continental climate**, but **continental climate remains dominant** with hot summers and cold winters in the hinterlands while mild winters, dry summers persist along coast.
- **Rivers:** The major rivers of Croatia are the **Danube, Sava, Drava**, Mura, and Kupa, which primarily drain into the Black Sea basin, while important rivers flowing to the Adriatic Sea include the Neretva, Cetina, Krka, and Zrmanja.
- **Governance:** Croatia is a parliamentary republic with a prime minister who is the head of government and a president who is the head of state.
- **International co-operation:** It is a member of the **European Union (since 2013)**, the **Schengen Area**, and the **Eurozone (since 2023)**.
- **Economy:** The economy is **service-based**, with **tourism** playing a major role, especially along the Adriatic coast.
 - Tourism, shipbuilding, food processing, and chemical engineering are key industries, while agriculture plays a smaller role.
- **Ports:** The country's **major ports**—Rijeka, Split, and Ploče—are integral components of the European Union's core **TEN-T network**, supporting trans-European transport infrastructure.
- **Historically**, Croatia was part of **Yugoslavia** until its **independence in 1991**, after which it underwent significant reconstruction and democratic reforms.

Strait of Hormuz

News: The Strait of Hormuz has been in the news recently due to escalating tensions and intense military clashes between Iran and Israel in West Asia.

About Strait of Hormuz

- **Location:** The **Strait of Hormuz** is a narrow waterway located **between Iran and Oman**.
- It connects the **Persian Gulf** (north) with the **Gulf of Oman** and the **Arabian Sea** (south).
- The strait is the only sea passage that allows the Persian Gulf waters to reach open waters (Indian Ocean).
- **Importance:** It is widely regarded as **one of the world's most strategically vital maritime choke points**.
 - It is located near the Arabian Peninsula, which holds the **largest reserves of oil and gas globally**.
 - Roughly **30% of the world's liquefied natural gas and 25% of its crude oil are transported through the Strait**
 - Around **21 million barrels of oil per day** passed through it in 2022 — that's about **one-fifth of the world's oil trade**.
 - Major oil-exporting countries like **Saudi Arabia, Iran, UAE, Kuwait, and Iraq** rely on this route.
 - It is often called the **"oil artery of the world"** because of its vital role in global energy supply.
- **Regulation:** According to **UN maritime laws**, each country controls up to **12 nautical miles (approx. 22 km)** from its coast. At its narrowest, the Strait falls entirely within the **territorial waters of Iran and Oman**.
 - However, **international law** requires that all ships must be allowed **free passage**, even in such waters.

Revised Green India Mission (GIM)

News: The Central Government has released a revised roadmap for the National Mission for Green India, also known as the Green India Mission (GIM) on June 17.

About Green India Mission (GIM)



Figure 23. Source – MoEFCC

- It was rolled out in **2014** as one of the **eight missions** under **India's National Action Plan on Climate Change (NAPCC)**.
- **Nodal Ministry:** Ministry of Environment, Forest and Climate Change (MoEF&CC)
- **Aim:** Its core aim is to **combat climate change** by increasing **forest and tree cover**, and the **ecological restoration** of degraded ecosystems and forests.

- It also aims to **improve the livelihoods of communities** dependent on forest produce.

- **Objective:** Its objective was to **increase forest and tree cover on 5 million hectares** and improve the **quality of forest cover on another 5 million**

Revised Green India Mission (GIM)

- It will take '**micro-ecosystem**' approach in area and **landscape-specific restoration activities** in three important mountain ranges – the **Aravallis, the Western Ghats, and the Indian Himalayas**, along with the **mangrove ecosystems**.
 - The original GIM was criticised for taking a **plantation-centred approach**.
- **Syncing of different projects:** GIM interventions will be synced with the Centre's other environmental projects such as, recently launched **Aravalli Green Wall project**, aimed at combating the degradation and desertification in the mountain ranges.
- **Restoration** will be carried out through the **recovery of open forests, agroforestry, and plantation** on degraded lands.

Commitments and Projections of revised plan

- **Commitments**
 - According to the **ISRO's Desertification and Land Degradation Atlas**, around a **third of India's** geographical area – 97.85 million hectares – underwent **land degradation** during 2018-19.
 - India aims to create an **additional carbon sink of 2.5 to 3 billion tonnes** of carbon dioxide through **additional forest and tree cover** by 2030, according to its national commitments to **UNFCCC**.
 - India has also made an ambitious commitment to **restore 26 million hectares of degraded land** by 2030.
- **Projections**
 - According to the FSI, this approach alone has the **potential to sequester 1.89 billion tonnes of CO2** over approximately 15 million hectares.
 - It estimates that **by aligning ongoing schemes and intensifying afforestation** efforts, GIM can help India **expand its forest and tree cover up to 24.7 million hectares**.
 - This would be enough to **achieve a carbon sink of 3.39 billion tonnes** of CO2 equivalent by 2030.

Operation Sindhu

News: India has launched Operation Sindhu to evacuate its nationals from Iran in view of the deteriorating situation due to the ongoing conflict between Iran and Israel.

About Operation Sindhu



Source – DD News

- It is a **large-scale evacuation mission** launched by the India in **June 2025** to **rescue Indian nationals** stranded in **Iran and Israel** amid escalating hostilities between the two countries.
- **Objective:** To ensure the **safety and evacuation of Indian citizens**, especially students and professionals, from conflict-affected zones in Iran and Israel.
- **First Phase:**
 - The initial phase is **focused on evacuating Indian students from northern Iran**.
 - **Coordination:** The Indian Embassies in **Tehran and Yerevan**, along with the Ministry of External Affairs (MEA) in New Delhi, coordinated the operation, providing helplines and real-time assistance to those in need.
- **Second phase**
 - This phase intends to evacuate Indian **citizens from Israel**.
- **Co-ordination:** The MEA set up **24/7 control rooms in New Delhi** and provided emergency helplines for Indian nationals in Iran and Israel.

Evacuation Operations conducted by India in the past

Operations	Year	Location	Reason
Operation Airlift	1990	Kuwait	Iraqi invasion of Kuwait
Operation Sukoon	2006	Lebanon	Israel-Lebanon conflict
Operation Safe Homecoming	2011	Libya	Civil conflicts inside Libya
Operation Raahat	2015	Yemen	Conflict between the Yemeni government and Houthi rebels

Factly Compilation June 2025

Operation Maitri	2015	Nepal	After the Nepal earthquake
Operation Sankat Mochan	2016	South Sudan	Civil conflicts inside South Sudan
Operation Samudra Setu	2020	From around the world	During Covid-19 pandemic
Vande Bharat Mission	2020	From around the world	During Covid-19 pandemic
Operation Devi Shakti	2021	Afghanistan	After the Taliban takeover
Operation Ganga	2022	Ukraine	Conflict between Russia and Ukraine
Operation Kaveri	2023	Sudan	During armed conflict in Sudan
Operation Ajay	2023	Israel	During the Israel-Palestine conflict
Operation Sindhu	2025	Israel and Iran	Conflict between Israel and Iran

INS Arnala

News: Indian Navy has officially commissioned INS Arnala, its first Anti-Submarine Warfare Shallow Water Craft, at the Naval Dockyard in Visakhapatnam.

About INS Arnala



Source – PIB

- It is the **first of the sixteen** Anti-Submarine Warfare Shallow Water Crafts (**ASW SWCs**) delivered to the Indian Navy.
- **Manufactured by:** It has been **designed and constructed** by **Garden Reach Shipbuilders & Engineers (GRSE), Kolkata**, under a Public-Private Partnership (PPP) with **L&T Shipbuilders**.
- **Naming:** The warship has been named after the historic **Arnala Fort off Vasai in Maharashtra**.
- It is a **77-meter-long** warship, with a gross tonnage of over **1490 tonnes**.
- It is the **largest** Indian Naval warship to be propelled by a **Diesel Engine-Waterjet combination**.
- **Capabilities:** It is designed for a broad range of **Anti-Submarine operations** such as –
 - Sub-Surface Surveillance and Interdiction
 - Search and Rescue Missions
 - Low-Intensity Maritime Operations (LIMO)
- **Equipments:** The ship is **equipped** with **advanced underwater sensors** such as –
 - Hull-Mounted Sonar **Abhay**
 - Underwater Acoustic Communication System (**UWACS**)
 - Low-Frequency Variable Depth Sonar (**LFVDS**) – making them capable of comprehensive **underwater surveillance**.
- **The need for ASW SWCs**
 - The Indian Navy plans to **deploy all 16 ASW-SWC vessels** to safeguard India's **sixteen major ports**, establishing a robust **anti-submarine shield** along the coastline.
 - These ASW vessels will **replace the ageing Abhay-class corvettes** that entered service with the Indian Navy in **1989**.
- **Importance**
 - The commissioning of INS Arnala not only reinforces India's **defence capability** but also highlights the triumph of indigenous design, engineering, and manufacturing, realising the vision of **Aatmanirbhar Bharat**.

Mount Lewotobi Laki-laki

News: A recent volcanic eruption at Mount Lewotobi Laki-laki in Indonesia released an ash cloud soaring up to an astounding 11 kilometers into the sky.

About Mount Lewotobi Laki-laki



Source.volcanodiscovery

- Mount Lewotobi Laki-laki is located on **Flores Island** in **East Nusa Tenggara province, Indonesia**.
- It lies along the tectonically active **Pacific Ring of Fire**, a zone known for frequent volcanic and seismic activity.
- Mount Lewotobi is a **twin stratovolcano** system with two distinct peaks: **Lewotobi Laki-laki** and **Lewotobi Perempuan**.
- **Lewotobi Laki-laki** is **more frequently active**, with **numerous eruptions** recorded in the **19th and 20th centuries**.
- In contrast, **Lewotobi Perempuan** has had **only two known eruptions** in recorded history.
- **Small lava domes** have formed within the summit craters of both peaks during the **20th century**.
- A notable flank cone named **Iliwokar** is located on the **eastern side of Lewotobi Perempuan**.

India's Coastline Grows by 3,500 km

News: India's coastline is now far longer than it used to be, almost 50% more than the previous length.

India's Coastline Grows by 3,500 km

Length of India's coastline along states	
State/UT	Coastline length (in km)
Gujarat	2,340.62
Maharashtra	877.97
Goa	193.95
Karnataka	343.3
Kerala	600.15
Tamil Nadu	1,068.69
Andhra Pradesh	1,053.07
Odisha	574.71
West Bengal	721.02
Daman and Diu	54.38
Pondicherry	42.65
Lakshadweep	144.8
Andaman and Nicobar	3,083.50

Source: Ministry of Ports, Shipping and Waterways

Source – Indian Express

- **Some post reassessment data:** Earlier, the length of India's coastline used to be **7,516 km**. Now this coastline has been measured to be **11,098 km**.
- The **number of islands** in India has **increased slightly**.

Reasons for the increase in India's coastline length

- **New Measurement Techniques:** The **earlier measurement** was based on data that were of the scale of **1:4,500,000 (one to forty-five lakh)**, or smaller.
 - The **recent exercise** calculated the length of the coastline using data that had a scale of **1:250,000 (one to 2.5 lakh)**.
- **Higher resolution data** can capture the coastline, its bends and curves, in more intricate details.
 - In **low-resolution data**, these details get smoothened out, and appear as straight lines. The loss of bends and curves would shorten the length.
- The previous estimation was a result of more **conventional and manual calculations**.
- **Inclusion of coastlines** of many **off-shore islands** that had been left out of previous calculations.

The coastline paradox

- It is a **mathematical phenomenon** where the measured length of a **coastline increases indefinitely** as the measurement **scale becomes finer**, preventing a single, well-defined length.
- This occurs due to the **fractal nature** of coastlines, where smaller-scale features (e.g., bays, inlets, rocks) reveal increasing complexity.

- The coastline paradox **extends to many other similar natural features** such as **river networks and mountain ranges**.
- Reassessment of coastlines **becomes necessary** also on account of natural processes such as coastal erosion and human interventions like land reclamation.

Increase in numbers of islands

- **Related ambiguities:** There are specific kinds of ambiguities in accounting the numbers of islands.
 - For example, a location might be an island during high tide but connected to the land during low tide.
 - In 2016, the Office of the **Surveyor General of India listed 1,382 offshore** islands in India while a count by state governments, and agencies like the Coast Guard and Indian Navy had yielded a **lesser number of 1,334**.
- **Post reassessment data on Islands:** A subsequent data reconciliation exercise has arrived at a new number of **offshore islands** in the **country – 1,298**.
 - This exercise also listed **91 inshore islands**. The **total number of islands is 1,389**.
 - These **do not include** the large number of **river islands** in states such as **Assam and West Bengal**.

Offshore and inshore islands in states

State/UT	Offshore islands	Inshore islands	Total
Gujarat	108	36	144
Maharashtra	105	15	120
Goa	39	2	41
Karnataka	88	12	100
Kerala	7	—	7
Tamil Nadu	26	2	28
Andhra Pradesh	20	12	32
Odisha	13	3	16
West Bengal	14	9	23
Daman and Diu	9	—	9
Lakshadweep	33	—	33
Andaman and Nicobar Islands	836	—	836
Total	1,298	91	1,389

Source: Office of Surveyor General of India

Source – Indian Express

Implications

- All the changes in length of coastline or number of islands are largely **academic in nature**, but these are **not irrelevant**
- The new numbers result in a **better understanding of India's territory and terrain**.
- There are **administrative, developmental and security implications** with some certain **operational significance** as well.

Gender Budgeting Knowledge Hub

News: The Central government on Thursday launched the Gender Budgeting Knowledge Hub, a dedicated digital platform aimed at strengthening gender-responsive planning across India.

About Gender Budgeting Knowledge Hub



Figure 24. Source – PIB

- It is a dedicated **digital platform** aimed at strengthening **gender-responsive planning** across India.
- **Aim:** Its aim is to empower policymakers, researchers, and other stakeholders with a centralised repository of tools to support the **integration of a gender lens into all stages of planning and budgeting**, both at the **Central and state**

- **Objective:** It targets to **deliberate on the measures** to strengthen the gender budgeting processes across all sectors; and share initiatives and good practices on gender budgeting by the Central Ministries/Departments and States under their specific schemes.

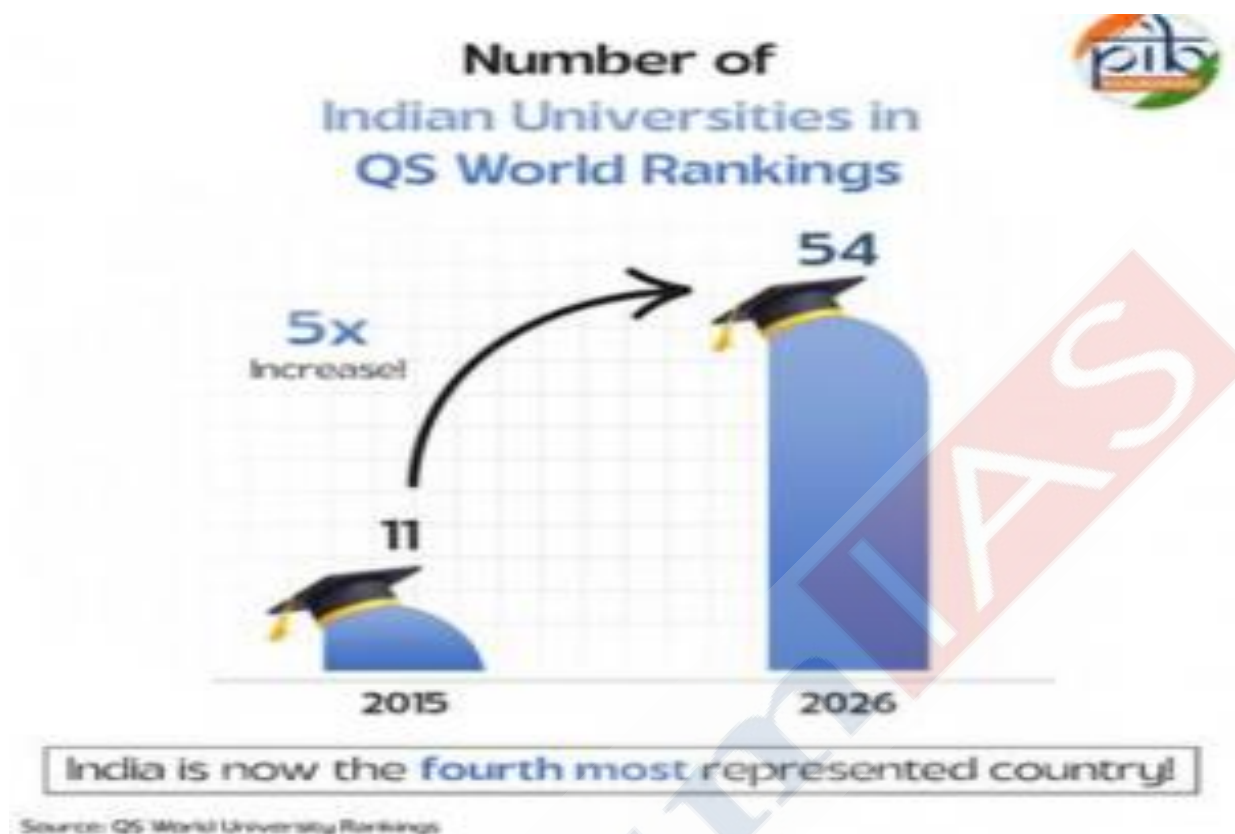
Gender budgeting in India

- Gender Budgeting has been a core element of India's development strategy **since 2005-06**.
- It was initially introduced **as a fiscal reporting mechanism**, it has evolved into a key governance instrument for achieving gender equality and women empowerment.
- For the financial **year 2025-26**, the Gender Budget allocation of Rs. 4.49 lakh crore – a **37% increase** over the previous year allocation.
- Over the **past 11 years**, Gender Budget allocations have **increased by four and half times** – from Rs. 0.98 lakh crore in 2014-15 to Rs. 4.49 lakh crore in 2025-26.

QS World University Ranking 2026

News: India has achieved its highest-ever representation in the QS World University Rankings 2026, with 54 institutions making it to the list.

About QS World University Rankings



Source – PIB

- The QS World University Rankings is an **annual global ranking of universities** published by **Quacquarelli Symonds (QS)**, a leading higher education analytics organization.
- **Aim:** The aim of these rankings is to **help students, academics, and employers compare** the performance of universities worldwide.
- **Methodology**
 - The QS World University Rankings use a **structured approach to assess institutions** across the globe.
 - Each ranking is built on a **set of measurements** that help evaluate different aspects of university performance. These measurements are grouped as follows:
 - **Lens:** A collection of indicators linked by a common theme, such as research or employability.
 - **Indicator:** A specific area of performance, such as Citations per Faculty or Employer Reputation. Institutions are scored and ranked on each indicator, which contributes to their overall rank.
 - **Metric:** A detailed calculation within an indicator, used to generate precise scores.

Key Insights from QS World University Ranking 2026

- India has **54 universities** in the QS World University Rankings 2026, making it the **fourth most represented country**.
 - Only the **United States (192)**, the **United Kingdom (90)**, and **Mainland China (72)** have more universities ranked than India.
- **Eight Indian institutions** have entered the rankings for the **first time**.
 - This is the **highest number of new entrants** from any country this year.

- **Numbers:** The number of Indian universities in the rankings has grown from **11 in 2015 to 54 in 2026**.
 - This marks a **five-fold increase** in just over a decade.
- **48 percent** of India's ranked universities **improved** their positions compared to the previous year.
- **Six** Indian institutions feature in the global **top 250**.
- **Rankings**
 - **IIT Delhi** leads the Indian contingent. It is ranked **123rd globally**, rising from 150th in 2025.
 - **IIT Madras** recorded one of the **biggest jumps**, rising 47 places from 227 in 2025 to **180** in 2026.
- A total of **12 Indian Institutes of Technology (IITs)** feature in the list, highlighting their strong presence in global academia.
- **Five** Indian institutions feature in the global **top 100 for Employer Reputation**.
- **Eight** Indian universities rank among the world's top 100 for **Citations per Faculty**.
 - Their average **score of 43.7** is higher than that of Germany, the United Kingdom and the United States.
- India now has a **diverse mix of public and private institutions** represented, including central universities, deemed-to-be universities, and technical institutes.

Global Highlights

- The **Massachusetts Institute of Technology (MIT)**, United States, holds the **top position** for the **14th straight year**.
- It is **followed** by **Imperial College London** and **Stanford University**, which climbed from sixth to third.
- The **US** remains the **most represented** country overall, with **192 institutions** featured in the list, and most showing improved positions.
- **China** continues its strong presence, with **Peking University at 14th** (92.6), and Tsinghua University rising to 17th with a score of 91.2.

Sharavathi Lion-Tailed Macaque Wildlife Sanctuary

News: The arrest and subsequent bail of farmers accused of entering the Sharavati Lion-Tailed Macaque Wildlife Sanctuary in Sagar taluk with country-made weapons has triggered widespread unrest.

About Sharavathi Lion-Tailed Macaque Wildlife Sanctuary

- **Location:** It is located in the **Sharavathi River Valley** in Sagar Taluk of Shivamogga District, **Karnataka**.
- It was established by **merging the previously existing Sharavathi Valley Wildlife Sanctuary, Aghanashini Lion-Tailed Macaque Conservation Reserve**, and the adjoining reserve forest blocks.
- It shares its **southwestern boundary with the Mookambika Wildlife Sanctuary**.
- It lies within the Western Ghats, which is recognized as a UNESCO World Heritage Site.
- The total area of the sanctuary is **approximately 431.23 square kilometers**, which includes the Linganamakki Reservoir covering about 124 square kilometers.
- **Vegetation:** The sanctuary is predominantly covered with **tropical evergreen and semi-evergreen forests, especially in the valleys**.
- It also features **moist deciduous forests along with patches of grasslands and savanna vegetation**.
- **Flora:** The sanctuary is immensely rich in plant diversity, hosting species such as **Dhoopa (Vateria indica)**, **Gulmavu (Mangifera indica)**, **Surahonne, Mavu, and Nandi**.

- **Fauna:** It is considered a **key habitat for the endangered Lion-Tailed Macaque (*Macaca silenus*)**, which is endemic to the Western Ghats.
- Other prominent mammals found in the sanctuary include **tigers, leopards, wild dogs (dholes), jackals, sloth bears, wild pigs, sambar deer, spotted deer, barking deer, mouse deer, bonnet macaques, common langurs, and the Malabar giant squirrel.**
- Notable bird species such as **minivets, herons, woodpeckers, and hornbills** are found here.
- A wide range of reptiles inhabit the sanctuary, including the **king cobra, Indian python, rat snake, monitor lizard, and crocodiles.**
- Some of the major attractions located within the sanctuary include Jog Falls, one of the highest waterfalls in India; Linganamakki Reservoir, a scenic and vital water body; Honnemaradu Backwaters, popular for eco-tourism and water sports; and Sigandur Backwaters along with the Chowdeshwari Temple, which holds cultural and religious significance.

Quantum Communication Using Satellite

News: As per the Indian Institute of Technology (IIT)-Delhi, India could be technologically capable of quantum communication using satellites in the next half a decade.

About Quantum Communication



Source – The Hindu

- Quantum communication is a field of technology that **uses the principles of quantum mechanics—**especially the behavior of quantum **particles like photons—to transmit information** in a way that is fundamentally secure and resistant to eavesdropping.
- **Key Features**
 - **Quantum Key Distribution (QKD):** The encryption keys are shared using quantum states (such as the polarization of photons).

- Any attempt to intercept or measure these quantum states disturbs them, **revealing the presence** of an eavesdropper.
- **Quantum entanglement:** Information can be transmitted using entangled particles, where the **state of one instantly influences the state of another**, no matter the distance.
- **Unbreakable security:** Because of the laws of quantum physics, quantum communication can provide **theoretically unbreakable encryption**.
- Under **National Quantum Mission (NQM)** of India, a strong **focus is to develop satellite-based long distance quantum communication**.

Quantum Communication Using Satellite

- A **quantum satellite** is a communications satellite leveraging the **principles of quantum physics to secure data transmissions**.
- **Significance**
 - The emergence of quantum computers poses a threat to existing cryptographic systems.
 - Quantum satellites aim to **ensure secure communications** by employing quantum cryptography particularly Quantum Key Distribution (QKD).

Demonstrations from across the globe

- **China:** In 2017 and 2020, researchers of China generated quantum keys involving a satellite (500 km above the ground) and ground stations 1,000 and 1,700-km apart.
- **West:** Since 2005, there have been ground demonstrations in **Europe, Canada, and the United States** of free-space (without cables) QKD greater than 100 km.
- **India:** In 2022, scientists from the Department of Space (DOS) demonstrated quantum entanglement based real time Quantum Key Distribution (QKD) over a **300-metre atmospheric channel**.

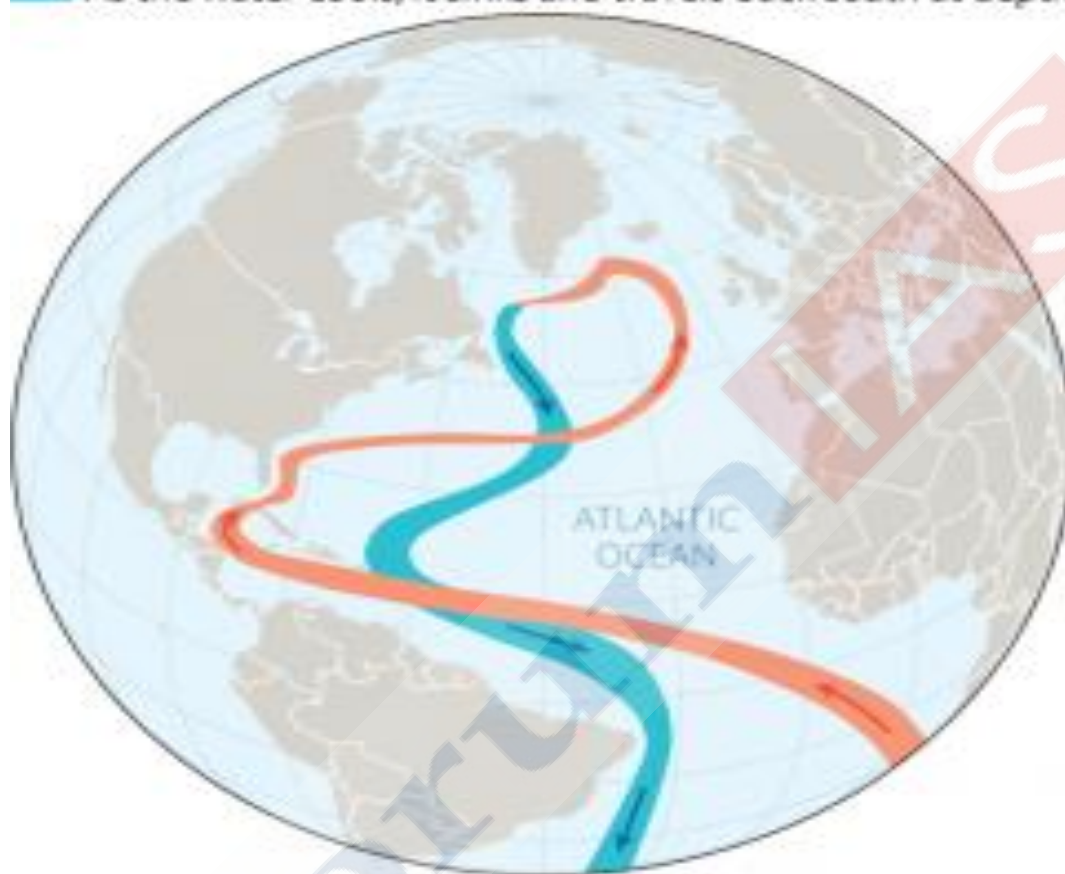
Atlantic Meridional Overturning Circulation (AMOC)

News: A new study finds that the Europe faces deep winter freeze if the Atlantic Meridional Overturning Circulation (AMOC) collapses.

About Atlantic Meridional Overturning Circulation (AMOC)

Atlantic meridional overturning circulation

- Warm water travels northwards close to the surface
- As the water cools, it sinks and travels back south at depth



Source – NOAA

- The AMOC is a **system of ocean currents** that circulates water **within the Atlantic Ocean**, bringing **warm water north and cold water south**.
- **Mechanism:** The circulation process begins as **warm water** near the surface moves **toward the poles** (such as the Gulf Stream in the North Atlantic), where it cools and forms sea ice.
 - As this ice forms, **salt is left behind** in the ocean water. Due to the large amount of salt in the water, it becomes **denser**, sinks down, and is **carried southwards** in the depths below.
 - Eventually, the water gets **pulled back up towards the surface and warms up** in a process called upwelling, **completing the cycle**.

Importance of Atlantic Meridional Overturning Circulation (AMOC)

- AMOC aids in **distributing heat and energy** around the earth (**heat budget**).
- **Western Europe's climate** is less harsh even in winters because of AMOC (Gulf Stream, North Atlantic Drift).

- It acts as a **carbon sink** by absorbing and storing atmospheric carbon.

Weakening of AMOC

- It takes an estimated 1,000 years for a parcel (any given cubic meter) of water to complete its journey along the belt.
- However, climate models suggest that the **AMOC will weaken** over the 21st Century as **greenhouse gases increase**.
 - This is because as the atmosphere warms, the surface ocean beneath it retains more of its heat.
 - Meanwhile increases in rainfall and ice melt mean it gets fresher too.
- All these changes make the ocean **water lighter** and so **reduce the sinking** in the 'conveyor belt', leading to a weaker AMOC.

Any substantial weakening of the AMOC would cause

- further **decrease in marine productivity** in the North Atlantic (less sinking will lead to less mixing of water),
- **more storms** in Northern Europe
- **less Sahelian summer rainfall** and **South Asian summer rainfall**
- a **reduced** number of **tropical cyclones** in the Atlantic
- an **increase in regional sea level** along the northeast coast of North America.

New HIV Prevention Drug Lenacapavir (LEN)

News: The United States Food and Drug Administration (FDA) has approved Lenacapavir (LEN), the most promising HIV prevention medicine to be made so far.

About New HIV Prevention Drug Lenacapavir (LEN)



Source – NBC News

- LEN is an **antiretroviral medicine** that is used for **HIV prevention** as a **pre-exposure prophylaxis or PrEP**.

- PrEP is a **medication** that can **reduce the risk of HIV infection for** individuals who are HIV-negative but are at risk of contracting the virus.
- **Effectiveness:** The studies have shown that it helps **prevent 99.9 %** of all HIV transmission.
- **Doses:** LEN is an **injectable PrEP** that is to be taken **twice yearly**.
 - It will be commercially called as **Yeztugo**.
- **Better alternative:** It offers a more convenient alternative to the **current** standard of care for HIV prevention, a **daily pill called Truvada**.
- **Status in India:** PrEP was **first** approved by the US FDA in **2012**, but the Indian government's **National AIDS Control Organisation is yet to roll it out**.

About HIV (Human Immunodeficiency Virus)

- It is a **virus** that attacks and weakens the body's **immune system**, specifically targeting **CD4 (T) cells** that help fight infections.
- **AIDS:** Without treatment, HIV can gradually destroy the immune system and **progress to AIDS (Acquired Immunodeficiency Syndrome)**, the **most advanced stage** of HIV infection.
- **Transmission:** HIV spreads through **certain body fluids**—blood, semen, vaginal fluids, rectal fluids, and breast milk—most commonly via unprotected sex or sharing needles.
- **Symptoms:** Early symptoms may resemble the flu or be absent; the only way to know if you have HIV is through **testing**.
- **Cure:** There is **no cure**, but **antiretroviral therapy (ART)** can control the virus, enabling people with HIV to live long, healthy lives and significantly reducing the risk of transmission to others.
- **Prevention** includes safe sex practices, not sharing needles, and using preventive medicines like PrEP and PEP.

India Post Payments Bank (IPPB)

News– India Post Payments Bank (IPPB) was recently honored with the Digital Payments Award 2024–25 by the Department of Financial Services (DFS) under the Ministry of Finance.

About India Post Payments Bank (IPPB)

- IPPB is a *100% government-owned bank* set up under the *Department of Posts, Ministry of Communications*.
- It was *launched on September 1, 2018*.
- **Significance–** Its core mission is to bring banking services to the unbanked and under banked, especially in remote areas, by using the vast network of around 1.65 lakh Post Offices across the country.

Functions of IPPB:

- IPPB operates on a smaller scale than traditional banks and *does not provide loans or issue credit cards to reduce risk*.
- It offers services such as deposit acceptance, money transfers, mobile payments and purchases, and access to ATM/debit cards, net banking, and third-party fund transfers.
- It can *accept deposits up to Rs. 2 lakh*.

NAVYA Initiative

News: Government to Launch 'NAVYA' – A Joint Pilot Initiative for Skilling Adolescent Girls Under Viksit Bharat@2047 Vision.

About NAVYA Initiative



Source – PIB

- **Full name:** NAVYA – Nurturing Aspirations through Vocational Training for Young Adolescent Girls
- It is a **pilot initiative** aimed at equipping adolescent **girls aged 16-18 years** with a **minimum qualification of Class 10**, with **vocational training** mainly in non-traditional job roles.
- **Launched by:** Ministry of Women and Child Development (MWCD), in **convergence** with Ministry of Skill Development and Entrepreneurship (MSDE)
- **Launched at:** Sonbhadra, Uttar Pradesh
- **Target regions:** This **pilot initiative** will be implemented in 27 Districts of the country which include **Aspirational districts and districts of North -eastern States** spanning across 19 States.

Integration of e-Rakt Kosh with Rare Donor Registry

News: The Health Ministry is looking at integrating the country's Rare Donor Registry with the national online platform for blood bank management and blood availability information called e-Rakt Kosh.

About e-Rakt Kosh Platform



Figure 25. Source – C-DAC

- It is a **national platform** for information about **Blood Banks and Blood availability** across India.

- **Developed by:** It has been developed by **C-DAC** under the initiative of **Blood Cell, National Health Mission, Ministry of Health and Family Welfare**.

- It is the **official portal** for all blood-related services in India.

- **Aim:** It aims to provide all the information under a **single umbrella** as a **one nation one platform** for blood-related services in India.

- **Key features**

- Citizen-Centric Services containing real-time details from blood banks across India

- Provides an end-to-end IT solution for complete workflow managements in blood banks

- Available via the web, mobile apps on Google Play, iOS etc.

- Integrated with **UMANG**, e-

Hospital, National Health Portal and flagship products of **CDAC e-Sushrut and e-Upkaran**.

About Rare Donor Registry of India (RDRI)

- It is a national database of **rare blood group donors**.
- **Launched by:** ICMR-National Institute of Immunohaematology (NIH)
- It contains a data base of **4,000 carefully screened donors**, tested for over **300 rare blood markers**.
- It helps doctors **find rare** and specially matched blood quickly.

Integration of e-Rakt Kosh with RDRI

- The integration will allow **those with rare blood groups to access a centralized system** developed under the National Health Mission (NHS), providing details on blood banks, blood availability, and blood donation camps across the country.
- Essentially, it will help people **find blood and blood banks**, and **assist blood banks** manage their stock and donors.

INS Tamal

News: The Indian Navy is all set to commission its latest stealth multi-role frigate INS Tamal on 01 Jul 2025 at Kaliningrad, Russia.

About INS Tamal



Source – PIB

- It is the **eighth stealth multi-role frigate** in the series of **Krivak class frigates** inducted from Russia over the past two decades.
- It is the **second ship of the Tushil Class**, which are the **upgraded versions** of their predecessors, **Talwar and Teg classes** having three ships each.
 - India is also building **two similar frigates** called the **Tripud class at Goa Shipyard Limited** with transfer of technology and design assistance from Russia.
- **Motto:** The ship's motto is '**Sarvada Sarvatra Vijaya**' (Victorious Always Everytime).

Features of INS Tamal

- It is a **125 m long, 3900-ton stealth warship**.
- **Built by:** It has been built at **Yantar Shipyard in Kaliningrad, Russia** but has 26% indigenous components.
- **Equipments:** It is upgraded with –
 - Vertically launched surface-to-air missiles including the **BrahMos long-range cruise missile** (both at sea and land)
 - Heavyweight torpedoes
 - Urgent-attack anti-submarine rockets
 - Surface Surveillance Radar complex
 - HUMSA NG Mk II sonar
 - Air Early Warning and Multi Role helicopters, which can operate from the deck of Tamal

- **Naming:** The ship's name symbolizes the **mythical sword** used for **combat by Indra** – the King of the gods.
- **Mascot:** The ship's mascot is inspired by the congruence of the '**Jambavan**' the Immortal Bear King of Indian Mythology and the **Russian National Animal** – the **Eurasian Brown Bear**.
 - The ship's crew collectively takes great pride in calling themselves the '**The Great Bears**'.
- It will join the '**Sword Arm**' of the Indian Navy, the Western Fleet, **under the Western Naval Command**.

Sustainable Development Report (SDR), 2025

News: India has secured a position among the top 100 countries in the Sustainable Development Goals (SDG) Index for the first time.

About Sustainable Development Report (SDR)



Figure 26. Source – SDSN

- It is an **annual assessment** that tracks and ranks the progress of all 193 UN member states toward achieving the **17 Sustainable Development Goals (SDGs)** adopted in 2015.
- **Published by:** It is published by the **N. Sustainable Development Solutions Network (SDSN)**.
- **SDG Index:** The SDR uses a comprehensive set of **indicators and data points** to evaluate each country's performance which is used to provide an **SDG Index score (0–100)**.
- **2025 edition:** It is the **10th edition** of SDR since its inception in 2016 (first edition).
 - The 2025 edition introduced **new indicators** and provided an evaluation of which **countries have made the most progress** on the SDGs since 2015.

Key Highlights of Sustainable Development Report (SDR), 2025

- **India:** India has for the **first time** secured a place among the **top 100** out of 193 countries.
- India ranks **99th** on the 2025 SDG Index with a score of **67**, while China ranks 49th with 74.4 and the US 44th with 75.2 points.
- **India's neighbours:** Bhutan

takes 74th place with 70.5 points, Nepal ranks 85th with 68.6, Bangladesh 114th with 63.9 and Pakistan 140th with 57 points.

- Maldives and Sri Lanka, stood at 53rd and 93rd places, respectively.
- **Global scenario: SDG progress has stalled at the global level, with only 17 per cent of the 17 targets projected to be achieved by 2030.**
 - **Toppers: The Nordic nations** continue to top the SDG Index, with **Finland ranking first, Sweden** second and **Denmark**
 - A total of **19 out of the top 20 countries are in Europe.**
 - **East and South Asia** have **outperformed** all other global regions in **terms of SDG progress** since 2015 largely due to rapid socioeconomic development.
 - Nepal (+11.1), Cambodia (+10), the Philippines (+8.6), Bangladesh (+8.3) and Mongolia (+7.7).
 - **Others:** Benin (+14.5), Peru (+8.7), the United Arab Emirates (+9.9), Uzbekistan (+12.1), Costa Rica (+7) and Saudi Arabia (+8.1).
 - **Among G20 nations**, Brazil (25) ranks highest, while Chile (7) leads among OECD countries.
 - The top three countries most committed to the **UN multilateralism** are Barbados (1), Jamaica (2) and Trinidad and Tobago (3).
 - **Five targets show significant reversals** in progress since 2015 – obesity rate (SDG 2), press freedom (SDG 16), sustainable nitrogen management (SDG 2), the Red List Index (SDG 15) and the Corruption Perceptions Index (SDG 16).

Estimates Committee

News: Lok Sabha Speaker inaugurated the national conference marking the platinum jubilee of the Parliamentary Estimates Committee in Mumbai's Vidhan Bhavan complex.

About Estimates Committee



Source – Maharashtra Vidhan Sabha

- The Committee on Estimates was constituted for the **first time in 1950.**
- **Members:** It is consisting of **30 members**, elected **every year** by the **Lok Sabha** from amongst its Members.

- **Election:** Members are elected according to the **principle of proportional representation** by means of **single transferable vote**.
- **Chairperson:** The Chairperson of the Committee is **appointed by the Speaker** from amongst its members.
- A **Minister** cannot be elected as a member of the Committee and if a member after selection to the Committee is appointed a Minister, the **member ceases to be a Member of the Committee** from the date of such appointment.
- **Term of Office:** The term of office of the Committee is **one year**.
- **Functions:** The functions of the committee as **enshrined in Rule 310 of Rules of Procedure and Conduct of Business in Lok Sabha**. The functions of the Estimates Committee are:
 - to report what economies, improvements in organisation, efficiency or administrative reform, consistent with the policy underlying the estimates may be effected;
 - to suggest alternative policies in order to bring about efficiency and economy in administration;
 - to examine whether the money is well laid out within the limits of the policy implied in the estimates;
 - to suggest the form in which the estimates shall be presented to Parliament.
- **Exceptions:** The Committee **does not exercise its functions** in relation to such **Public Undertakings** as are allotted to the **Committee on Public Undertakings** by the Rules of Procedure and Conduct of Business of Lok Sabha or by the Speaker.

Thirstwaves

News: As per a research, the thirstwaves have increased in severity, with increased frequency in the growing season.

About Thirstwaves

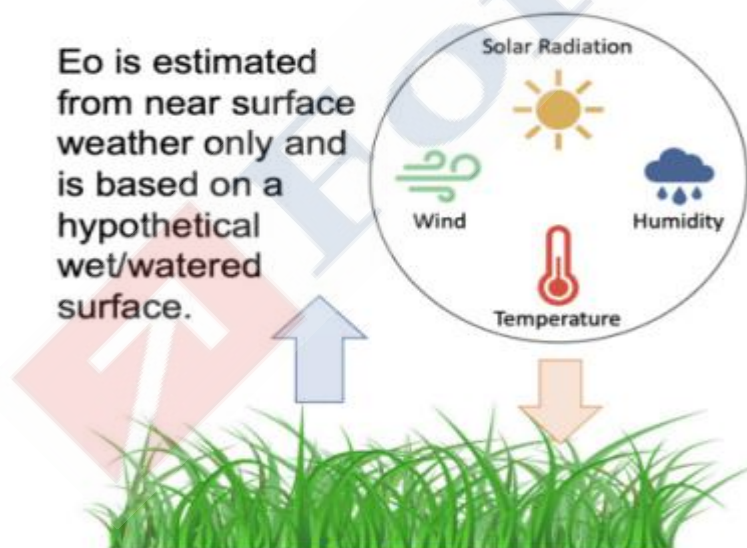


Figure 1. Schematic illustrating the atmospheric drivers of evaporative demand (labeled E_o in the figure) from a well-watered reference surface.

Figure 27. Source – NOAA

- It is defined as a **period of at least three consecutive days** when the atmosphere's **evaporative demand exceeds intensively**.

- The term was introduced by researchers **Meetpal Kukal and Mike Hobbins**.

- They have grown **more intense, are more frequent**, and are **lasting longer**, especially in seasons when crops are grown.

Different from Heat Waves

- While **heat waves** are caused by particular **temperature and wind patterns**, a **thirstwave** is the product of **temperature, humidity, solar radiation, and wind speed**.

- When **temperatures rise**, the consequences include more heat as well as

the mechanics of **water exchange between land and atmosphere**, which in turn alters humidity, wind, and solar radiation.

- **Global warming intensifies** these combined factors, making the air more moisture-demanding.

Evaporative Demand

- It is a measure of **how thirsty the atmosphere** is.
- It determines the **near-maximum of how much water will evaporate from** a given piece of land **if sufficient water is available**.
- **Measurement:** It is measured **using standardised short-crop evapotranspiration** – defined as the **amount of water a grass surface 12 cm high** and which has continuous access to sufficient water and is free of any stress **will use**.
 - **Evapotranspiration** itself refers to the **two processes** by which water moves from land to the atmosphere: **evaporation** from surfaces and **transpiration** from plant leaves.
- **Consequences:** **Higher demand leads to increased moisture loss, leaving crops and soil drier, impacting crop health.**

Organization of Islamic Cooperation (OIC)

News: Recently, the Organisation of Islamic Cooperation (OIC) strongly condemned the recent Israeli strikes on Iran, Syria, and Lebanon, urging the international community to take swift and decisive action.

About Organization of Islamic Cooperation (OIC)

- It was formally established in **May 1971** in **Jeddah, Saudi Arabia**.
- It originated after two key summits: The **1969 Rabat Summit** (in response to the arson attack on Al-Aqsa Mosque) and the **1970 Jeddah meeting** of Muslim foreign ministers.
- **Membership:** **57 member states** across **four continents**, making it the **second-largest intergovernmental organization after the UN**.
- Members include countries such as **Afghanistan, Bangladesh, Egypt, Indonesia, Iran, Malaysia, Pakistan, Saudi Arabia, Turkey**, and the **Palestinian Authority**, among others.
- **Syria** has been **suspended since 2012** due to the civil war. **Egypt** was suspended in 1979 over the **Camp David Accords** but rejoined in 1984.
- The OIC also has permanent delegations to the United Nations and the European Union.
- **Headquarters:** Jeddah, Saudi Arabia.
- **Official Languages:** Arabic, English, and French.

Key Bodies:

- **Islamic Summit Conference (ISC):** Highest authority of OIC, convened every **three years** to set organizational policy.
- **Council of Foreign Ministers (CFM):** Meets **annually** to implement summit decisions and set directions for cooperation.
- **General Secretariat:** **Executive body** responsible for the implementation of decisions and coordination among members.
- **Ministerial Committees:** It was created for cooperation in **political, economic, social, cultural, spiritual, and scientific** fields. Some committees are chaired by heads of member states.

Key Initiatives and Institutions:

- **Islamic Development Bank (IsDB)** – Promotes economic development and social progress.

- **Islamic Solidarity Fund (ISF)** – Provides financial support for humanitarian and developmental activities.
- **International Islamic News Agency (IINA)** – Aims to improve the global image of Islam and Muslims.
- **World Centre for Islamic Education** – Promotes education in Islamic values and sciences.
- Collaborates with **UN agencies, governments, and civil society organizations (CSOs)** to tackle global challenges affecting Muslims and member states.

Tansen

News: The Madhya Pradesh High Court dismissed an appeal seeking permission to perform religious and cultural activities at the tomb of Tansen in Gwalior.

About Tansen



Source – Punjab Kesri

- **Birth:** He was born into a Hindu Gaur Brahmin family in **Gwalior** as **Ramtanu Pandey**.
- **Guru:** He was discipled to **Swami Haridas**, the legendary **composer from Vrindavan** and court musician of the stellar Gwalior court of **Raja Man Singh Tomar**.
- **Career and patronage**
 - He got his **first break** as musician and composer in the court of **Raja Man Singh Tomar of Gwalior**.
 - He spent most of his adult life in the court and patronage of the **Hindu king of Rewa, Raja Ramchandra Singh (1555–1592)**.
 - He joined **Akbar's court** at about the **age of 60 in 1562**.
 - He was among the **Navaratnas (nine jewels)** at the court of Akbar.
 - **Titles:** The title "**Mian**" was bestowed upon him by Mughal Emperor **Akbar**.
 - While "**Tansen**" was his common name, bestowed upon him by **Raja Vikramjit of Gwalior**.
- **Musical contribution**
 - He is remembered for his epic **Dhrupad compositions**, creating several new ragas.
 - He was instrumental in establishing the very **first musical gharana** the "**Gwalior Gharana**" of **Hindustani music**.
 - He was also an instrumentalist who **popularised** and improved the **plucked rabab (of Central Asian origin)**.

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- **Compositions:** Tansen's musical compositions covered many **themes, and employed Dhrupad**.
 - Most of these were derived from the Hindu Puranas, **composed in Braj Bhasha**, and written in **praise of gods and goddesses** such as Ganesha, Saraswati, Surya, Shiva, Vishnu.
- **Death:** Tansen died in **1586 in Delhi**.
 - **Grave:** His remains were buried in the **mausoleum complex of his Sufi master Shaikh Muhammad Ghaus in Gwalior**.
 - The **tomb of Hazrat Sheikh Muhammad Ghaus** was declared a **protected monument of national importance in 1962** under the Ancient Monuments and Archaeological Sites and Remains Act, 1958.

RBI lowers priority sector lending target for Small Finance Banks

News: The Reserve Bank of India (RBI) has relaxed priority sector lending (PSL) norms for small finance banks (SFBs).

About Priority Sector Lending (PSL)



Figure 28. Source – Banknews

- It refers to the **mandatory lending targets** set by the Reserve Bank of India (RBI) for **banks and financial institutions** to ensure that certain sectors of the economy receive adequate credit and financial support.
 - These guidelines are **issued under the Banking Regulation Act, 1949**.
- **Objective:** The objective of priority sector lending is to promote **inclusive growth, reduce regional imbalances,**

and support marginalized sections of society.

- **Sectors included:** The sectors under PSL include:
 - Agriculture
 - Micro, Small and Medium Enterprises (MSMEs)
 - Education
 - Housing
 - Renewable energy
 - Export credit
 - Social infrastructure
- **PSL Targets for Banks**
 - **Domestic commercial and Foreign Banks with 20 branches and above** – The overall PSL target is set at **40 per cent** of their total adjusted net bank credit (ANBC) or Credit Equivalent of Off-Balance Sheet Exposures (CEOBSE).

- **Foreign Banks with less than 20 B branches** – The overall PSL target is set at **40 per cent** of ANBC or CEOBE, whichever is higher.
 - Of this, **up to 32 per cent** can be for **export credit** and not less than **8 per cent** must be for any other priority sector.
- **For regional rural banks** – The total PSL target is **75 per cent** of ANBC or CEOBE whichever is higher.
- **For small finance banks (SFBs)** – The total PSL target is **60 per cent** of ANBC or CEOBE whichever is higher.
- **Primary (Urban) Co-operative Banks (UCBs)** – PSL Target of **60 per cent** of ANBC or CEOBE, whichever is higher.
- **Payment Banks** – Not subject to PSL targets.

- **Adjusted Net Bank Credit (ANBC):** It is computed after taking into account **bill discounting, non-SLR (statutory liquidity ratio) securities** and other **exemptions** via long-term bonds.
 - **Non-SLR securities** are debentures, mutual fund units, preference shares, commercial paper, equity shares, etc., issued by a securitization or reconstruction company.
- **Credit Equivalent of Off-Balance Sheet Exposures (CEOBE):** It include **items** that are not included on a **company's balance sheet** such as letter of guarantee, letter of credit, deferred payment guarantee, etc.

Revised RBI Guidelines for PSL BY SFBs

- **Earlier:** As per the 'Guidelines for Licensing of Small Finance Banks in Private Sector' dated 27 November 2014 a **SFB was required to extend 75%** of its ANBC or CEOBE to the sectors eligible for classification as **priority sector lending (PSL)**.
 - **Allocations:** **40%** of its ANBC or CEOBE should be allocated to **different sub-sectors** under PSL; the SFB can allocate the **balance 35%** to any **one or more sub-sectors** where it has competitive advantage.
- **Present scenario:** Now, from the **financial year 2025-26 onwards**, the **additional component (35%) of PSL shall be reduced to 20%**, thereby making the overall PSL target as **60%** of ANBC or CEOBE, whichever is higher.

About Small Finance Banks (SFBs)

- They are **specialized financial institutions** established with the **primary goal** of fostering **financial inclusion** by offering basic banking services to underserved and unbanked segments of society.
- **Key Features of Small Finance Banks**
 - **Regulated by the RBI:** Operate under the RBI's Banking Regulation Act, 1949, and other relevant regulations.
 - **Basic Banking Services:** Offer savings accounts, current accounts, fixed deposits (FDs), recurring deposits (RDs), and loans.
 - **Scheduled Bank Status:** SFBs receive this status upon meeting specific criteria under the RBI Act, 1934.
 - **Focus on Priority Sectors:** At least **60% (earlier 75%)** of their Adjusted Net Bank Credit (ANBC) is allocated to priority sectors like agriculture and small-scale industries.
 - **Capital Requirements:** Minimum paid-up capital is ₹200 crore, ensuring financial stability.
 - **No Subsidiaries Allowed:** SFBs cannot establish subsidiaries for non-banking financial services.
- **Regulation and Governance of Small Finance Banks:** SFBs are governed by:

- Banking Regulation Act, 1949
- RBI Act, 1934
- FEMA, 1999
- Credit Information Companies (Regulation) Act, 2005

Digital Payment Intelligence Platform (DPIP)

News: RBI ropes in banks to build Digital Payment Intelligence Platform to bolster fraud risk management by facilitating real-time intelligence sharing.

About Digital Payment Intelligence Platform (DPIP)



Figure 29. Source – Sab Paisa

- It is a **forthcoming**, RBI-led **digital public infrastructure (DPI)** designed to strengthen **fraud risk management** in India.
- **Objective:** The platform seeks to **bolster fraud risk management** by facilitating **real-time intelligence sharing and gathering**, thereby preventing fraudulent digital transactions.
- **Background:** RBI had formed a **committee** (June, 2024) chaired by **A.P. Hota** to examine various aspects of establishing this digital public infrastructure.
- **To be built by:** The **Reserve Bank Innovation Hub (RBIH)** has been assigned to build a prototype of DPIP in consultation with 5-10 banks.
- **Working:** It will **collect and**

analyze data from various sources to identify potential threats and prevent fraudulent.

- By enabling **real-time data sharing**, the platform will help **prevent scams** and ensure **secure transactions**.
- **Need:** As per **annual report of the RBI**, there was a significant **surge in bank frauds**, with the amount involved rising nearly **three times** to Rs. 36,014 crores in FY25, compared to Rs. 12,230 crores in the previous year.
 - Frauds occurred predominantly in the **category of digital payments (card/internet)** in terms of the **number** and primarily in the **loan portfolio (advances)** in terms of **value**.

Amended BharatNet Program (ABP)

News- Gujarat became the first state to implement the Amended BharatNet Program (ABP) under a state led model.

About Amended BharatNet Program

Background

- The Government of India initiated the BharatNet project in October 2011 under the *Ministry of Communications*.
- This ambitious initiative seeks to *deliver affordable high-speed internet connectivity to all Gram Panchayats* across the country.
- The Union Cabinet approved the Amended BharatNet Program (ABP) on 4th August 2023, to be *funded by the Digital Bharat Nidhi (DBN)*.
 - DBN is a fund created to enhance the quality and reach of telecommunications services across India. It was introduced by the Government of India as a successor to the *Universal Service Obligation Fund (USOF)*.
- This updated plan aims to provide optical fiber connectivity using MPLS technology to 2.64 lakh Gram Panchayats in a ring topology.
- It will also *extend internet access* to about 3.8 lakh non-GP villages *based on demand*.

Key features of the Program

- IP-MPLS (*Internet Protocol Multi-Protocol Label Switching*) network with routers at Blocks and GPs.
- *Operation and maintenance* for 10 years.
- *Minimum 25 Mbps download speed* for each FTTH subscriber.
- *Last-Mile Network* to be implemented through BharatNet Udyami model.

Weight Loss Drug – Wegovy

News: Danish drugmaker Novo Nordisk has launched its weight loss drug Wegovy as a once-a-week injection in India.

About Weight Loss Drug – Wegovy



Figure 30. Source – ABC News

- It is a **prescription weight loss drug** developed by Danish pharmaceutical company **Novo Nordisk**.

- It contains **semaglutide**, a **GLP-1 receptor agonist** originally developed for **type 2 diabetes** but found to be **highly effective for weight loss**.

- It is **administered as a once-weekly injection** using a convenient **pen device** (FlexiPen or FlexTouch).

- The drug is **approved by Central Drugs Standard Control Organisation, (CDSCO) in India**

strictly for **obesity management** and **not for diabetes**.

Working

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- It is made of **semaglutide**, a GLP 1A receptor agonist, which **mimics** the **naturally occurring hormone GLP-1**, responsible for **regulating blood sugar, reducing appetite and slowing down gastric emptying**.
- It makes a person **feel fuller for longer and eat less**.

Other Weight Loss Drugs

- **Ozempic** is used more for **diabetes management**. The main **difference** between the two is the **dose**.
- **Rybelsus** is an **oral pill** for the same.
- **Mounjaro** is made up of **tirzepatide**, which **mimics** the function of **natural hormones GIP and GLP-1**.
 - It has a **double effect**, of increasing **insulin secretion** in response to food intake and improving **glucose control and weight loss**.

International Potato Centre (CIP)

News: India to set up a regional wing of the Peru-based International Potato Center (CIP) with a focus on the potato and sweet potato.

About International Potato Centre (CIP)



Source – CIP

- It was **founded in 1971** with a **focus** on the **potato, sweet potato and Andean roots and tubers**.
- It primarily works in **South America, Africa and Asia**.
- It commenced its **work in India in 1975**, signing an initial **agreement** with the Indian Council of Agricultural Research (ICAR).
- **Headquarters:** Lima, Peru.
- A **new regional centre** of CIP is going to be set up in **India** – to be known as the CIP-South Asia Regional Center (CSARC).
 - It will come up at **Singna in Agra district** of Uttar Pradesh.
 - It will cater to **farmers in India's potato belt states**, like Uttar Pradesh, Bihar and West Bengal and also to **South Asian countries**.

About Potato and Sweet Potato Crops

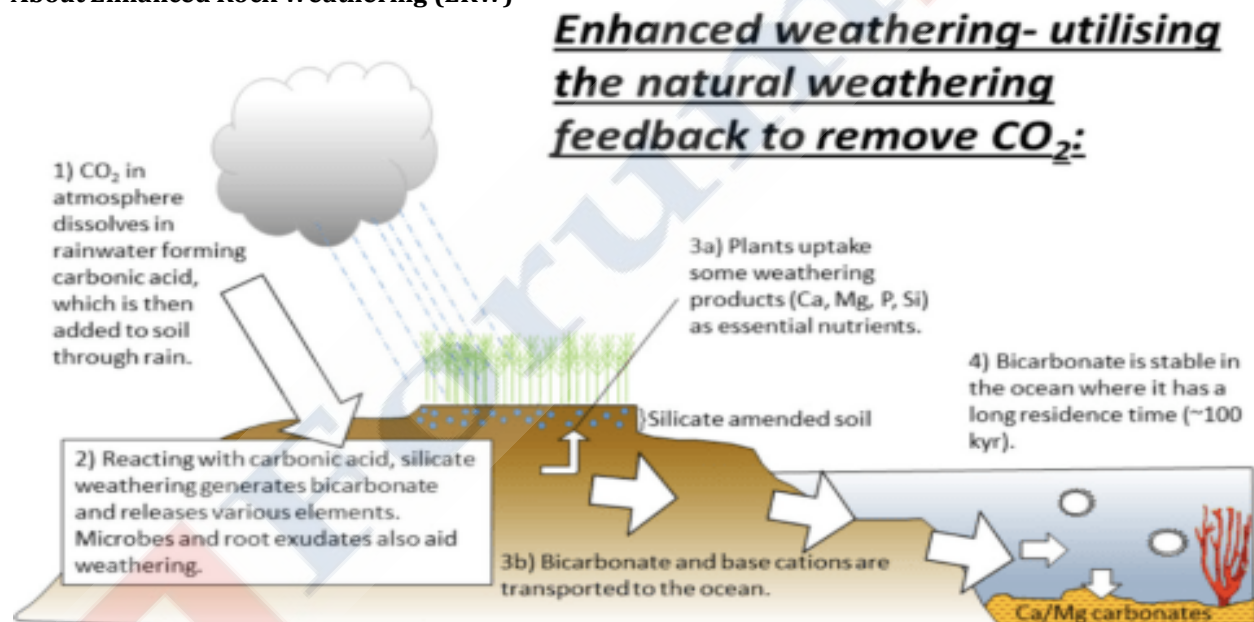
- The potato crop is **native to the Peruvian-Bolivian Andes** in Latin America, spread across the globe by the Spaniards and the Portuguese who colonised the continent.
 - Potatoes **reached India in the 17th century**.
- It is the **third** most available **food crop** in the world, after rice and wheat, while **sweet potato** is in the **6th position** after maize and cassava.
- **Top producers:** India is its **second-largest producer and consumer after China**.

- In **2020**, **China's** production was recorded at **24 mt**, while India produced **51.30 mt**, accounting for over **one-third of the global** potato production (359.07 mt).
- **Indian scenario**
 - **Top producing states:** **Uttar Pradesh** (15 mt), **West Bengal** (15 mt) and **Bihar** (9 mt) were the top three potato producers in **2020-21** with Gujarat, Madhya Pradesh and Punjab also have significant production.
 - **Issue of Low average yield:**
 - **Potato:** India's **average yield** of **potato** crop is **25 tonnes per hectare** — about **half** of its potential of over **50 tonnes per hectare** due to **lack of availability of high-quality seeds**.
 - **Sweet potato:** India's **sweet potato** yield is just **5 tonnes per hectare**, which is much less than the potential of **30 tonnes per hectare**.

Enhanced Rock Weathering (ERW)

News: Tech giants, airlines and fast fashion firms lining up to buy carbon credits from ERW projects to “offset” or cancel out their own emissions.

About Enhanced Rock Weathering (ERW)



Source – SCI Journals

- It is an innovative, **nature-based carbon dioxide removal (CDR) technology** designed to combat climate change by **accelerating** the earth's **natural rock weathering process**.
- ERW **speeds** the process up by using **quick-weathering rocks** like **basalt** that are ground finely to increase their surface area.
- **Aim:** It aims to **turbocharge** a natural geological process called **weathering**.
 - **Weathering** is the **breakdown of rocks by carbonic acid**, which forms when carbon dioxide in the air or soil dissolves into water.
 - **Weathering** occurs **naturally when rain falls on rocks**, and the process can **lock away carbon dioxide** from the air or soil as **bicarbonate**, and eventually **limestone**.

Effectiveness of ERW

- **Debatable:** ERW is still a fairly **new technology** and there are **questions about how much carbon it can remove.**
- **Difficult to measure:** Rates depend on variables including **rock type and size**, how **wet and hot** the climate is, **soil type** and **land management.**
- **Miscalculation:** The most popular technique **measures “cations”**, positively charged ions that are released from the rock during weathering.
 - If there are **stronger acids than carbonic**, then it will react with those, so measurable cations are produced even when **carbon dioxide is not captured.**

Benefits

- The added rock **increases soil alkalinity**, which can boost **crop growth, soil nutrients and soil formation.**
- **Basalt** is both naturally abundant and often available as a **byproduct of quarrying**, lowering the costs of the process.

Cancer Drugs

News: A significant investigation uncovered that several cancer medications distributed to more than 100 countries have not met quality standards. This revelation prompts critical questions about the identity and usage of these drugs.

About Cancer Drugs

Cancer drugs are medications used to destroy or inhibit the growth of cancer cells, playing a crucial role in chemotherapy and targeted cancer therapies.

About Cisplatin

- **Type:** Platinum-based chemotherapy drug
- **How It Works:** Binds to DNA in cancer cells, preventing their replication and division
- **Uses:** Commonly used to treat testicular, ovarian, bladder, and certain lung cancers
- **Benefits:** Has significantly improved survival rates in several cancers, either on its own or combined with other therapies
- **Side Effects:** Nausea and vomiting, Kidney damage, Hearing loss and Bone marrow suppression, leading to reduced immunity

About Oxaliplatin

- **Type:** Platinum-based chemotherapy drug
- **How It Works:** Similar to cisplatin; binds to and damages cancer cell DNA to inhibit growth
- **Uses:** Mainly used for advanced colorectal cancer and post-surgical treatment of colon cancer
- **Side Effects:** Comparable to those of cisplatin, including risk of immune suppression and nausea

About Cyclophosphamide

- **Type:** Alkylating chemotherapy agent
- **How It Works:** Damages DNA in cancer cells, reducing their ability to multiply
- **Uses:** Breast cancer, Leukemia, Sarcoma and Advanced lymphoma
- **Side Effects:** Suppressed white blood cell production, Increased risk of infection and Bladder inflammation, causing painful urination

About Doxorubicin

- **Nickname:** Known as the “red devil” due to its color and potent side effects
- **How It Works:** Disrupts cancer cell DNA and hinders their ability to reproduce
- **Uses:** Breast cancer, Leukemia, Lymphoma and Sarcoma
- **Side Effects:** Potential heart damage, Hair loss, Skin changes and Increased infection risk

About Methotrexate

- **Type:** Antimetabolite chemotherapy drug
- **How It Works:** Inhibits an enzyme needed for DNA synthesis, stopping cancer cell growth
- **Uses:** Leukemia, Lymphoma and Various solid tumors
- **Administration:** Often used in high doses followed by leucovorin to reduce toxicity
- **Side Effects:** It can be toxic to normal cells without supportive care and Liver and kidney function monitoring required

About Leucovorin (Folinic Acid)

- **Type:** Supportive chemotherapy agent (not a direct anti-cancer drug)
- **How It Works:** A form of vitamin B9 used to protect healthy cells during chemotherapy
- **Uses:** It reduces toxic effects of high-dose methotrexate and it enhances effectiveness of certain other chemotherapy drugs (e.g., 5-FU)
- **Side Effects:** Generally mild, since it helps protect healthy tissue

Operation Deep Manifest

News: DRI seizes 39 containers carrying 1,115 metric tonne worth of goods around ₹9 crore of Pakistan-origin under ‘Operation Deep Manifest’.

About Operation Deep Manifest



Figure 31. Source – Asianet

- It is an operation **targeting the illegal import of Pakistani-origin goods** routed through third countries, primarily via Dubai, UAE.

- **Launched by:** Directorate of Revenue Intelligence (DRI) under the **Central Board of Indirect Taxes and Customs (CBIC)**, Ministry of Finance

- **Context of operation:** The Government of India **banned import of Pakistani-origin goods** routed through third countries, primarily via Dubai, UAE, **post Pahalgam terror**

attacks.

- Previously, such goods were subject to **200% customs duty**.

- **Violation of import policy:** Import of Pakistani-origin goods routed through third countries is in blatant violation of import policy conditions and prohibitions on direct or indirect import or transit of such goods.
- **Significance:** The operation **exemplifies DRI's steadfast commitment** to upholding Government's policy, customs and other relevant laws; safeguarding national and economic security of country; and preventing the misuse of trade channels for import of Pakistani-origin goods.

First Maritime NBFC – Sagarmala Finance Corporation Limited

News: The Union Ministry of Ports, Shipping & Waterways (MoPSW) inaugurated Sagarmala Finance Corporation Limited (SMFCL), India's first Non-Banking Financial Company (NBFC) in the maritime sector.

About India's First Maritime NBFC – Sagarmala Finance Corporation Limited



Figure 32. Source – PIB

- It is a **Mini Ratna, Category-I, Central Public Sector Enterprise** which has been formally registered as a **Non-Banking Financial Company (NBFC)** with the Reserve Bank of India (RBI).
 - It was formerly known as **Sagarmala Development Company Ltd.**
- **Nodal Ministry:** Ministry of Ports, Shipping and Waterways
- **Objective:** It will offer tailored financial products including **short, medium, and long-term funding**, to a

diverse range of stakeholders such as

- port authorities
- shipping companies
- MSMEs, startups
- maritime educational institutions
- **Policy alignment:** It **aims** to play a transformative role in India's maritime infrastructure development, in alignment with the **Amrit Kaal Vision 2047**.

Official Language

News: Union Home Minister addressed the 'Golden Jubilee Celebration' of the Department of Official Language in New Delhi as the Chief Guest.

About Official Language



Source – PIB

Constitutional Provisions

- **Part XVII** of the Constitution (**Articles 343-351**) governs language use in the Union, States, Parliament, judiciary, and inter-state communication.
 - So, the **official language policy** of India is enshrined in **Articles 343 to 351 of the Constitution**.
- **Article 343: Hindi in Devanagari script** is the official language of the Union.
- **Article 343(3) & Article 348: English** is to be used for **all official purposes** of the **Union**, including **parliamentary proceedings, judiciary, and communication** between the **Centre and non-Hindi-speaking states**, until otherwise **decided by Parliament**.
- **Article 344: A committee of parliament** is to be constituted to **examine the recommendation** of the **commission** and to report its views on them to the **President**.
 - **Official Languages Act 1963:** Continued use of English without time limit (amended in 1967 – use of English in addition to Hindi, compulsory in certain cases).
 - **Official Commissions:**
 - G. Kher Commission (1955)
 - Parliament committee under G. B. Pant (1957).
- **Article 345: official languages or languages of the state**
 - **State Language Provisions:** The Constitution **does not specify the official language of different states**. In this regard, it makes the following provisions:
 - The **legislature of the state** may adopt any **one or more of the languages** in use in the state **or Hindi** as the official language of the state.
 - Until that is done, **English** is to continue as the official language of that state.
 - States are **not confined to selecting languages listed in the Eighth Schedule** of the Constitution.
- **Article 346:** The official language of Union (i.e., **English**) shall be the **link language** for **communications between the Union and states**.
 - However, **two or more states** have the freedom to **mutually decide to utilize Hindi**, rather than English, for communication among themselves.

- **Article 347: Recognition of Language**
 - When the **President** (on a demand being made) is satisfied that a substantial proportion of the **population of a state** desires the use of any language spoken by them to be recognised by the state, then he may **direct to officially recognize the same** to protect the **linguistic interest of the minority of state**.
- **Article 348: Language of the Judiciary and Legal Texts**
 - **English** shall be used in the **Supreme Court, High Courts**, and for authoritative **texts of laws, bills, acts, ordinances, and orders**.
 - **Special Directives for Linguistic Minorities**
- **Article 350: Language to be used in representations for redress of grievances**
- **Article 350A: Facilities for instruction in mother-tongue at primary stage**
- **Article 350B: Provides for a Special Officer for Linguistic Minorities, appointed by the President, to investigate all matters relating to the safeguards for linguistic minorities.**
- **Article 351: Directive for development of the Hindi language.**
- **Schedule Languages: Eighth Schedule** of the Constitution consists of the following **22 languages**:
 - (1) Assamese, (2) Bengali, (3) Gujarati, (4) Hindi, (5) Kannada, (6) Kashmiri, (7) Konkani, (8) Malayalam, (9) Manipuri, (10) Marathi, (11) Nepali, (12) Oriya, (13) Punjabi, (14) Sanskrit, (15) Sindhi, (16) Tamil, (17) Telugu, (18) Urdu (19) Bodo, (20) Santhali, (21) Maithili and (22) Dogri.

Manasarovar Lake

News: The Kailash-Manasarovar Yatra has officially resumed after a five-year hiatus, with the first group of 36 Indian pilgrims reaching Manasarovar Lake in the Tibet Autonomous Region of China.

About Manasarovar Lake

- **Location:** Manasarovar Lake (also called **Mapam Yum Tso** in Tibetan) is located in the **Tibet Autonomous Region (Xizang)** of China.
- It lies at an altitude of **4,590 metres (15,060 feet)**, near **Mount Kailash (Gang Renpoche)** in the **Ngari Prefecture** of western Tibet.
- It is one of the highest freshwater lakes in the world.
- The lake is situated near the source of major rivers such as the **Indus, Sutlej, Brahmaputra (Yarlung Tsangpo)**, and **Karnali (Ghaghara)**.
- The name “Manasarovar” derives from **Sanskrit words** – *Manas* (mind) and *Sarovar* (lake), meaning “Lake of the Mind”.
- **Route of the Yatra (2025 Resumption):** The **first batch** of pilgrims entered via **Lhasa**, capital of Tibet, under the old traditional route facilitated by the Chinese authorities. The **second batch** is scheduled to travel via the **Nathu La Pass** in Sikkim—a motorable route that was part of the bilateral protocol established before the 2020 suspension.
- **Cultural and Religious Significance (Hinduism):**
 - In **Hinduism**, **Mount Kailash** is revered as the **abode of Lord Shiva**, and Manasarovar is believed to have been created by **Lord Brahma**.
 - Bathing in the lake and performing a **parikrama (circumambulation)** of Mount Kailash is considered to cleanse sins and bring spiritual merit.

- **Buddhist and Jain Beliefs:** Buddhists regard the lake as a place where Queen Maya conceived Lord Buddha. Jains believe that Rishabhdev, their first Tirthankara, attained Nirvana here.
- **Bilateral Significance:** The Yatra is a symbol of India-China cultural diplomacy, governed by agreements allowing Indian pilgrims to visit the sacred sites inside Tibet.

Litchi Cultivation

News: India dispatches its first consignment of rose-scented litchis to Qatar.

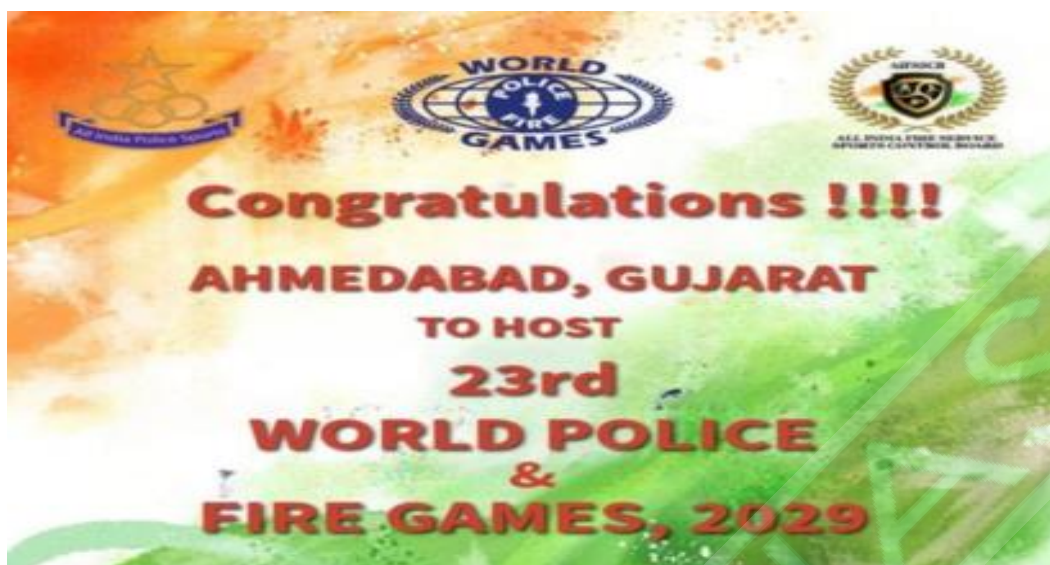
About Litchi Cultivation

- It is a tropical fruit popular for its sweet taste and juicy texture.
- Litchi requires a **moist sub-tropical climate for optimal growth**. The crop is **highly sensitive to winter frost and cannot tolerate dry heat during summer**.
- **Temperature:** The general temperature range for litchi cultivation varies from around 10°C during the winter months (December to February) to as high as 38°C in the summer months (April to June). The optimum temperature for healthy growth and productivity is up to 32°C.
- **Climatic Condition:** While litchi trees require moist conditions during the growing season, they should not be exposed to waterlogging.
- **Soil type:** Deep, well drained loamy soil, rich in organic matter and having pH in the range of 5.0 to 7.0 is ideal for the crop.
- **Production:**
 - **India is the second largest producer of litchi in the World after China.** Other major producing countries are Thailand, Australia, South Africa, Madagascar and Florida in US.
 - It is now widely grown in India, especially in Bihar, West Bengal, Uttar Pradesh, Jharkhand, and Assam.
- **Health benefits.**
 - It is rich in Vitamin C, which helps boost immunity and fight infections. The fruit is also high in antioxidants, aiding in skin rejuvenation and anti-ageing.
 - Its dietary fiber supports digestion, while its low calorie and fat content make it ideal for weight management. The B-complex vitamins in litchi help reduce stress and improve energy levels.

World Police and Fire Games (WPFG) 2025

News: India to host the prestigious World Police and Fire Games (WPFG) in 2029, a monumental achievement sparked by the visionary leadership of Rashtriya Raksha University (RRU).

About World Police and Fire Games (WPFG)



Source – DD News

- The WPFG are an **Olympic-style competition** with thousands of athletes representing **First Responders from different countries across the world**.
- This includes **law enforcement, firefighters, & officers from corrections, probation, border protection, immigration, & customs**.
- The Games are held **biennially**.
- The **first** WPFG were held in **1985 in San Jose, California**.
- The Games typically have **60+ sports** in the Official Games program.
- **Governed by:** The Games are governed by the **California Police Athletic Federation (CPAF)**, the **Host City**, and the **WPFG Board of Directors**.
- **Aim:** The Games aim to offer the **same variety of sports, & the same high caliber of venues, officials, & athletic achievement** as the original California Police Games, but on a global scale.

World Police & Fire Games 2025

- The Games are going to be held in Birmingham, Alabama (U.S.A.) from June 27 to July 6, 2025.

World Police & Fire Games 2029

- **India** is set to **host** the World Police and Fire Games (WPFG) for the **first time in 2029**.
 - India has become the first South Asian country to win the bid to host these games.
 - The Games are set to be held **Ahmedabad, Gandhinagar, and Ekta Nagar in Gujarat**.
- Representatives from **more than 70 countries** are expected to join this international event in India.

Registered Unrecognised Political Parties (RUPPs)

News: The ECI has initiated steps to de-list 345 Registered Unrecognised Political Parties (RUPPs) that have not contested elections in the last six years.

About Registered Unrecognised Political Parties (RUPPs)



Source – ET

- RUPPs are political parties registered with the Election Commission of India (ECI) **under Section 29A of the Representation of the People Act, 1951** but have **not yet qualified as State or National Parties**.
- **Features**
 - These are **either newly-registered parties or**
 - These are parties which **have not secured enough percentage of votes in the Assembly or general election** to become a State party or
 - Those parties that have **never contested elections** after being registered.
- **Symbol: Common symbols** are provided to RUPPs based upon an **undertaking** that they would put up **“at least 5% of total candidates with regard to said Legislative Assembly election of a State”**.
 - The symbols are provided under Provisions of **Para 10B of the Election Symbols (Reservation & Allotment) Order, 1968**.
- **Conditions for RUPPS**
 - They are required to maintain the **details of individual donors** who have donated **above ₹20,000 in a financial year** and submit these details to the **ECI every year**.
 - As per **Section 29C of the RP Act**, failure to furnish these details will result in **losing income tax exemption**.
 - The RUPPs are **required to accept donations in excess of ₹2000 only** through **cheque or bank transfers**.
 - RUPPs are required to **furnish audited accounts for the last three fiscal years**.
 - They are mandated to **submit expenditure reports** for the **two preceding elections**.
- **Benefits:** The RUPPs enjoy the following **benefits** –
 - **tax exemption** for donations received under Section 13A of the Income Tax Act, 1961
 - a **common symbol** for contesting general elections to the Lok Sabha/State Assemblies
 - 20 ‘**star campaigners**’ during election campaigns
- **De-listing of RUPPS by ECI**
 - ‘**Letter pad parties**’: As per ECI notification, there are **more than 2,800 RUPPs** in India as of May 2025.
 - However, **only around 750** of them contested the 2024 general elections.

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- **Issue:** The **RP Act** does not confer explicit powers on the **ECI** to **de-register** any political party if it fails to contest elections, conduct inner-party elections or lodge requisite returns.
- The **Supreme Court** in **Indian National Congress versus Institute of Social Welfare & Ors (2002)** had held that the **ECI** does not have the power to de-register any political party under the RP Act.
 - It may **de-register only under exceptional circumstances** such as the registration being obtained by **fraud** or the political party **ceasing to have allegiance** to the Indian Constitution or if it is declared **unlawful** by the Government.

Axiom-4 mission: Myogenesis Experiment

News: Indian member of Axiom-4 mission, Shubhanshu Shukla takes up experiment on skeletal muscle degradation (myogenesis) at ISS.

About Axiom-4 mission



Source – The Hindu

- It is a private spaceflight to the International Space Station (ISS).
- The mission aims to continue Axiom Space's pioneering efforts to establish a sustainable human presence in Low Earth Orbit (LEO).
- To know all about the Axiom-4 mission, please click [here](#).

About Myogenesis Experiment

- **Myogenesis** is the biological process **through which skeletal muscle tissue develops**, primarily during **embryonic development**.
- The human skeletal muscle cells **deterioration is very common** in space due to various reasons.
- **Aim of experiment:** It aims to uncover the **biological pathways behind skeletal muscle degradation** in space which has been a major **challenge for astronauts**.
 - Under this experiment, research explores how blood circulates in the brain under microgravity conditions, using ultrasound technology.
- **Benefits**

- By identifying these mechanisms, researchers hope to **develop targeted therapies** that to **protect space travelers** and aid people suffering from **muscle-degenerative diseases** on Earth.
- It could improve our **understanding of cardiovascular adaptation** in space and inform medical diagnostics and treatments for conditions like stroke and hypertension on Earth.