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# RAMSAR SITES

Recently, the **Nanjarayan Bird Sanctuary and Kazhuveli Bird Sanctuary in Tamil Nadu**, along with the **Tawa Reservoir in Madhya Pradesh**, have been recognized under the Ramsar Convention, bringing the total number to 85

*Wetlands are areas where water is the dominant factor influencing the environment and the types of plants and animals that live there.*



## Natural vs. Artificial Wetlands

- **Natural Wetlands** form naturally through ecological processes, such as the flooding of rivers or the accumulation of rainwater.
- **Artificial Wetlands** are created by human activities, like constructed ponds or water treatment facilities designed to mimic natural wetlands.

## Permanent vs. Temporary Wetlands

- **Permanent Wetlands** are always covered with water, such as large lakes or swamps.
- **Temporary Wetlands** appear seasonally, such as floodplains that may be submerged during rainy seasons and dry out at other times.

## Static vs. Flowing Water

- **Static Water Wetlands** have still or slow-moving water, such as ponds and marshes.
- **Flowing Water Wetlands** include areas with continuously moving water, such as river floodplains.

## Fresh, Brackish, or Salty Water

- **Freshwater Wetlands** have low salinity, like rivers and lakes.
- **Brackish Wetlands** have a mix of freshwater and saltwater, often found in estuaries.
- **Saline Wetlands** are influenced by seawater, such as salt marshes

## Significance of Wetlands

- **Climate Regulation:** Wetlands act as carbon sinks, trapping carbon dioxide from the atmosphere in plant material and peat. This helps mitigate climate change by reducing greenhouse gas levels.
- **Productivity:** They are among the world's most productive ecosystems, supporting a wide range of plant and animal species. Their productivity is comparable to rainforests and coral reefs.
- **Biodiversity:** Wetlands support a diverse array of life, including migratory birds, fish, amphibians, and plants. They provide essential habitats for breeding, feeding, and shelter.
- **Water Regulation:** Wetlands play a key role in filtering water by trapping sediments and pollutants from runoff. They also regulate water flow, which helps prevent flooding by storing excess rainwater
- **Economic and Cultural Value:** Wetlands support livelihoods through fishing, agriculture, and tourism. They also hold cultural significance for many communities, providing traditional resources and serving as sites for cultural practices.



## Wetlands in India

In India, wetlands cover approximately 1,52,600 square kilometers, which is about 4.63% of the total geographical area.

They are classified into:

- **Inland-Natural Wetlands (43.4%):** Include natural lakes, rivers, and floodplains located within the land area of the country.
- **Coastal-Natural Wetlands (24.3%):** Include estuaries, salt marshes, and mangrove forests along the coastlines.

### Conservation Efforts in India:

- National Wetland Conservation Programme (1986): Focuses on protecting and managing wetlands across the country.
- National Plan for Conservation of Aquatic Wetlands (2015): A strategic approach to wetland conservation, emphasizing the need for coordinated efforts and stakeholder involvement.
- Identification of Wetlands: The Ministry of Environment, Forest and Climate Change has identified over 2,200 wetlands for conservation schemes, highlighting their importance for biodiversity and ecosystem services

## New Ramsar sites

### Nanjarayan Bird Sanctuary

- Nestled in northeastern Uthukuli Taluk, within the Tiruppur District of Tamil Nadu.
- The sanctuary's origins trace back to efforts by King Nanjarayan, who played a pivotal role in restoring and maintaining the wetland centuries ago.

#### Hydrological Features

- o The lake relies on rainfall sourced from the Nallar drainage system.
- o Besides supporting local biodiversity, the lake's water helps in groundwater recharge and aids in agricultural activities by providing a crucial water source.

#### Biodiversity and Ecological Significance

- Bird Species: The sanctuary is home to approximately 191 bird species. Noteworthy examples include:
  - Bar-headed Goose: Known for its migratory patterns and high-altitude flight.
  - Northern Shoveler: Recognizable by its distinctive spatula-shaped bill.
  - Spot-billed Pelican: Known for its large size and fishing habits.

#### Ecological Role

- Serves as a critical habitat for both resident and migratory birds, supporting their nesting and feeding needs.
- Acts as a crucial stopover for migratory birds, offering essential resources during their journeys.

#### Management and Protection:

- Recognized as Tamil Nadu's 17th bird sanctuary, reflecting its importance in bird conservation.
- Actively protected by the local community in collaboration with the forest department, ensuring its preservation and sustainable use.

### Kazhuveli Bird Sanctuary

- Positioned on the Coromandel Coast in Villupuram District, north of Pondicherry.

#### Ecological Features

Water Types: The sanctuary comprises diverse water features including:

- Estuarine Systems: Areas where freshwater meets saltwater, creating unique brackish environments.
- Creek-Fed Brackish Water: Water bodies influenced by tidal actions.
- Freshwater Basins: Areas of



non-saline water supporting various aquatic species.

- Linked to the Bay of Bengal through the Uppukalli Creek and Edayanthittu Estuary, facilitating ecological exchanges.

**Habitat Characteristics**

- Mangrove Patches: Contains degraded mangrove areas with *Avicennia* species, which are critical for coastal protection and biodiversity.
- Reed Beds: Features extensive areas of reed (*Typha angustata*), which provide habitat for numerous species and contribute to the wetland’s ecological functions.
- Biodiversity and Ecological Importance: Supports a range of species adapted to brackish and freshwater conditions, playing a role in local and migratory ecosystems.

**Tawa Reservoir**

- Located at the confluence of the Tawa and Denwa Rivers near Itarsi Town, Madhya Pradesh.
- Lies within the Satpura Tiger Reserve, adjacent to Satpura National Park and Bori Wildlife Sanctuary.

**Hydrological and Functional Aspects:**

- Originally constructed for irrigation purposes to support local agriculture.
- Now also supports power generation and aquaculture, contributing to regional economic activities.

**Geographical Features:**

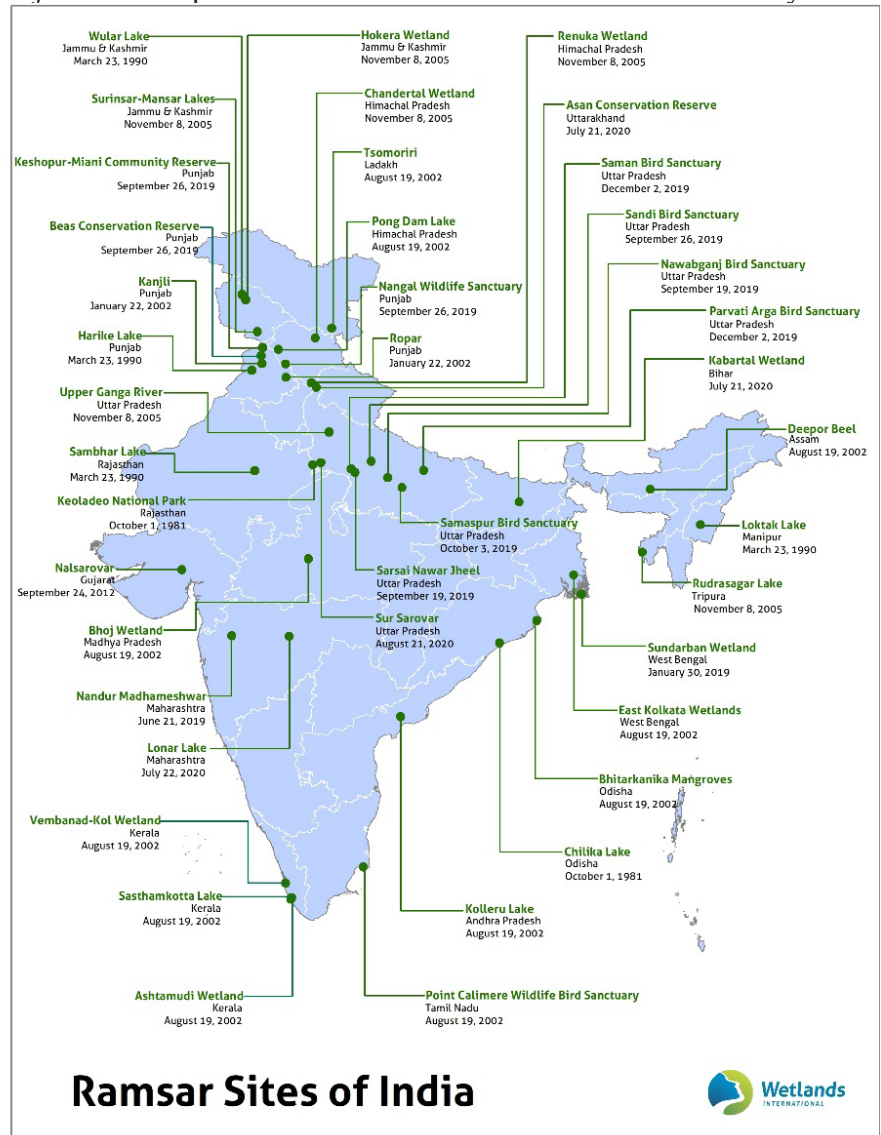
- Major tributaries include the River Malani, Sonbhadra, and Nagdwari, which feed into the reservoir.
- The Tawa River originates in the Mahadeo Hills of Chhindwara District, flows through Betul District, and joins the Narmada River in Narmadapuram District. It is noted as the longest tributary of the Narmada River.
- The reservoir provides habitat for species such as Spotted Deer and Painted Stork, contributing to the biodiversity of the Satpura region.

**Ramsar Convention**

- Established in 1971 in Ramsar, Iran: The Ramsar Convention is an international treaty aimed at conserving wetlands of international importance.
- It focuses on the sustainable use and maintenance of the ecological character of wetlands.
- The primary goals are to conserve wetlands, promote their sustainable use, and ensure that their ecological character is maintained.

**Criteria for Ramsar Sites**

- Ecological Importance: Wetlands are designated as Ramsar sites if they support significant plant and animal species, provide critical habitats, or have substantial ecological functions.
- Examples: Sites may include wetlands that support migratory birds, serve as breeding grounds for species, or provide important ecological services.
- Signatory Countries: The convention has 172 member countries, each responsible for protecting and managing Ramsar sites within their borders.
- Supporting Organizations: International Union for Conservation of Nature (IUCN), World-Wide Fund for Nature (WWF), and other environmental agencies support the treaty’s goals.





# BioE3 Policy (Biotechnology for Economy, Environment, and Employment)

The Union Cabinet has approved the BioE3 Policy to accelerate biotechnology-based manufacturing. The policy leverages biomanufacturing—using advanced biotech processes to create a diverse range of products, including pharmaceuticals, sustainable materials, and agricultural solutions, aligning with India's economic and environmental goals.

The BioE3 Policy targets six strategic sectors:

- High-value bio-based chemicals, biopolymers & enzymes
- Smart proteins & functional foods
- Precision biotherapeutics
- Climate-resilient agriculture
- Carbon capture and utilization
- Marine and space research



## India's Bioeconomy Landscape

India ranks among the top 12 global biotechnology destinations and holds the 3rd spot in the Asia Pacific region. The country's bioeconomy, estimated at \$130 billion in 2024, is expected to reach \$300 billion by 2030.

### Key sectors include

- **Biopharmaceuticals:** India is a leader in low-cost drugs and vaccines, with the highest number of approved biosimilars in the domestic market.
- **Bio-Agriculture:** With 55% of its land in agriculture, India is one of the world's largest producers of Bt-cotton and ranks 5th in organic agriculture.
- **Bio-Industrial Applications:** Biotechnology is transforming manufacturing processes, including waste management.
- **Bio IT & Services:** India's robust infrastructure supports contract manufacturing, research, and clinical trials, with the highest number of USFDA-approved plants outside the US.

### Key Objectives of the BioE3 Policy

1. **Technological Development & Commercialization:** Specialized hubs for biomanufacturing and Bio-AI, including Biofoundries, will promote innovation, streamline processes, and expedite product creation.

2. **Regenerative Bioeconomy Models:** Emphasizing sustainable and circular bioeconomy models, the policy supports green growth and eco-friendly technologies to minimize environmental impact.

3. **Workforce Development & Job Creation:** BioE3 aims to bridge skill gaps, generating employment opportunities across biotechnology sectors and strengthening the economy.

4. **Alignment with Government Initiatives:** By supporting 'Net Zero' and 'Lifestyle for Environment' initiatives, BioE3 will contribute to India's climate and sustainability goals.

5. **Sustainable Innovation:** The policy promotes biotechnological solutions to global challenges like climate resilience, carbon capture, and precision therapeutics, positioning India as a key player in addressing critical global issues.

6. **Vision for Viksit Bharat (Developed India):** BioE3 will drive biotechnology's role in economic and environmental progress, steering India towards a more advanced and resilient bioeconomy.

### Addressing the Need for BioE3 Policy

- **Multidisciplinary Solutions:** With applications in health, agriculture, and energy, biotechnology offers holistic solutions to societal challenges.
- **Leveraging a Skilled Workforce:** India's large pool of skilled professionals will support the growth of a competitive biotechnology workforce.
- **Capitalizing on Global Trends:** As the global biotechnology market expands at 7.4% annually, India's strong IT infrastructure can foster further growth and innovation.
- **Focus on Biofuels:** The policy's emphasis on biofuels aligns with strategic energy goals, enhancing energy security and promoting renewable sources.
- **Meeting Rising Health Needs:** With population growth and lifestyle changes, the demand for biotech solutions in health is surging, and BioE3 will help meet this demand.



## Challenges in India's Biotechnology Sector

- **Educational Gaps:** Biotechnology curricula need to better align with industry requirements to equip students with relevant skills.
- **Research Facilities:** Improved R&D infrastructure, including advanced labs, is essential for fostering innovation.
- **Funding Shortages:** Limited venture capital funding, low clinical trial activity, and inadequate investment in research and development hinder sector growth.
- **Private Sector Investment:** Government-funded R&D predominates in India, contrasting with countries where private sector investment drives research efforts.

## Government Initiatives to Promote Biotechnology

- **Biotech Parks and Bio-Incubators:** Supported by the Department of Biotechnology (DBT) and Biotechnology Industry Research Assistance Council (BIRAC), these centers foster biotech innovation and growth.
- **National Biopharma Mission:** Engages over 150 organizations and 30 MSMEs to advance biopharmaceutical development.
- **National Biotechnology Development Strategy 2020-25:** Focuses on skill-building, resource allocation, and innovation to create a robust ecosystem.
- **BIRAC Programs:** Funding initiatives like the Biotechnology Ignition Grant (BIG) and the Small Business Innovation Research Initiative (SBIRI) support biotech startups and SMEs.
- **Biotech KISAN Program:** Promotes biotechnology in agriculture to enhance crop productivity and resilience. The BioE3 Policy thus represents a transformative vision for India, promoting biotechnology as a driver of economic growth, environmental resilience, and sustainable employment across multiple sectors.



## Restatement of Values of Judicial Life

*The recent visit of the Prime Minister of India to Chief Justice of India (CJI) residence has sparked controversy, particularly in the context of the “Restatement of Values of Judicial Life” adopted by the Supreme Court in 1997.*

- The ‘Restatement of Values of Judicial Life’ is a code of judicial ethics adopted by the Supreme Court, serving as a guide for an independent and fair judiciary, ensuring the impartial administration of justice.
- Justice must not merely be done but it must also be seen to be done. Judges must avoid any actions that erode public confidence in impartiality of the judiciary.
- Accordingly, any act of a judge of the Supreme Court or a high court, whether in official or personal capacity, which erodes the credibility of this perception, has to be avoided.
- A judge should not contest the election to any office of a club, society or other association, except in a society or association connected with the law.
- Close association with individual members of the bar, particularly those who practise in the same court, shall be avoided.
- A judge should not allow any member of their immediate family or a close relative who is a member of the Bar to appear before them or be involved in a case that they are handling.
- No member of a judge’s family who is a member of the Bar shall be permitted to use the judge’s residence or other facilities for professional work.
- A judge should practise a degree of aloofness (being distant) consistent with the dignity of his office.
- A judge shall not hear and decide a matter in which a member of his family, a close relation or a friend is concerned.
- A judge shall not engage in public debate or express political views on matters pending or likely to arise for judicial determination.
- A judge should let his judgments speak for themselves and not give media interviews.

A judge shall not hear and decide a matter in which a company in which he holds shares is concerned unless he has disclosed his interest and no objection to his hearing and deciding the matter is raised.

- A judge shall not speculate in shares, stocks or the like.
- Judges should not engage in trade or business, directly or indirectly, but publishing legal work or hobby activities are exceptions.
- A judge should not solicit, accept, or associate with fundraising for any purpose.
- A judge should not seek any financial benefit in the form of a perquisite or privilege attached to his office unless it is clearly available.
- Any doubt on this behalf must be resolved and clarified through the Chief Justice.
- Judges must always be aware they are under public scrutiny and avoid any act or omission unbecoming of their high office.

## Ayushman Bharat Pradhan Mantri Jan Arogya Yojana

*The Union Cabinet has approved health coverage for all senior citizens aged 70 and above under the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY)*

• Health Cover for Senior Citizens under AB PM-JAY:

- All senior citizens aged 70 and above, regardless of income.
- Beneficiaries Approximately 6 crore senior citizens.
- Family-based cover of Rs 5 lakh annually.

- An additional top-up of Rs 5 lakh annually for those already covered by AB PM-JAY.
- Eligible seniors will receive a distinct AB PM-JAY card.

- Groups Senior citizens under private health insurance or Employees' State Insurance schemes.

• AB PM-JAY Scheme:

- Ministry of Health & Family Welfare
- Centrally Sponsored Scheme under Ayushman Bharat Mission
- Target 12 crore families (approximately 55 crore beneficiaries)
- Purpose To achieve Universal Health Coverage (UHC)
- Health cover of Rs 5 lakh/family/year for secondary and tertiary care
- Covers up to 3 days pre-hospitalization and 15 days post-hospitalization expenses.



## Ayushman Bharat Pradhan Mantri Jan Arogya Yojana

## 'Aparajita' Bill

*The West Bengal Assembly has unanimously passed the 'Aparajita Woman and Child Bill (West Bengal Criminal Laws and Amendment) 2024'*

- With this move, West Bengal becomes the first state to amend central laws dealing with rape, gang-rape, and sexual crimes against children.
- The 'Aparajita' bill is named in tribute to a 31-year-old trainee doctor who was raped and murdered at RG Kar Medical Centre and Hospital last month.



- The bill's key provisions include:
- **Death Penalty:** Imposed for rape if the victim dies or suffers severe brain damage.
- **Life Sentence:** Without parole for those convicted of rape.
- **Aparajita Task Force:** To ensure punishment within 21 days of the preliminary report.
- **Enhanced Safety Measures:** Installation of CCTV cameras and increased security on routes used by female healthcare workers, with an allocation of Rs 120 crores.
- **'Ratri Saathi' Provision:** Extends the duty hours for female workers, ensuring their safety during night shifts.

## Sukanya Samriddhi Yojana

The government recently made changes to the rules of the Sukanya Samriddhi Yojana, which are planned to come into force from the 1st of October 2024.

### New Rules:

- In case of accounts opened under the guardianship of grandparents (who are other than legal guardians), the guardianship shall be transferred to a person entitled under the law in force, that is, to the natural guardian (alive parents) or Legal Guardian. If it is not done, the account will be closed and this will be a permanent closure.
- Families with more than two SSY accounts will face closures of excess accounts, deemed to be in violation of scheme rules.
- **Sukanya Samriddhi Yojana :**
- It is a savings scheme launched in 2015 under the Government of India's "Beti Bachao Beti Padhao" campaign, which aimed to promote the education of girl children.
- SSY is a small-deposit scheme tailored specifically for the girl child.
- This scheme enables guardians to open a savings account for their girl child with an authorised commercial bank or India Post branch.
- The girl must be an Indian resident.
- The account can be initiated by the parent or legal guardian of the girl child.
- The girl child must be below the age of 10 at the time of opening the account.
- Only one SSY account is allowed per girl child.
- A family is limited to opening a maximum of two SSY scheme accounts.
- NRIs are not eligible to open these accounts.
- The girl must operate the account once she attains the age of 18 years.
- The minimum and maximum deposits that can be made in an account in a financial year are 250 and Rs.1.5 lakh, respectively. The deposits can be made in multiples of 100.



## NEW FLAG AND INSIGNIA OF THE SC

The President of India recently unveiled the new flag and insignia of the Supreme Court at the two-day National Conference of District Judiciary in New Delhi.

- The newly unveiled flag features symbols central to India's legal and cultural heritage: the Ashoka Chakra, the Supreme Court building, and the Constitution of India.
- The new Supreme Court flag is blue in colour.
- The insignia has 'Supreme Court of India' and 'Yato Dharmastato Jayah' (in Devanagari script) inscribed on it.
- The phrase "Yato Dharmastato Jayah" is a Sanskrit expression that translates to "Where there is Dharma, there is victory" or "Victory lies where Dharma (righteousness) prevails."
- This phrase encapsulates the essence of justice and righteousness that the Supreme Court strives to uphold.
- The new flag and insignia were conceptualized and designed by the National Institute of Fashion Technology (NIFT), Delhi.
- The flag will be available in various designs, including cross table flat, single table flag, pole flag, and wooden frame, ensuring its presence in diverse settings



# Review Petition

*A group of medical students recently filed a review petition challenging the Supreme Court's decision to dismiss their writ petition, which sought to cancel the NEET UG 2024 examination.*

Review Petition:

- When a judgment is passed by a court, the doctrine of *functus officio* applies to it.
- This Latin doctrine means that if the judgment in a case has been pronounced or an order has been made following due process of law, in such circumstances, the case cannot be reopened.
- The right to file a review petition is an exception to this doctrine.
- The word “review” means to examine again.
- Article 137 of the Constitution gives the Supreme Court the power to review any of its judgments or orders.
- The court has the power to review its rulings to correct a “patent error” and not “minor mistakes of inconsequential import”.
- Similarly, High Courts have also been given the power to review their judgments under Article 226 of the Constitution.
- However, it can only be invoked when there is a breach of law or violation of the Constitution.
  - In a 2013 ruling, the Supreme Court itself laid down three grounds for seeking a review of a verdict it has delivered.
  - The discovery of new and important matter or evidence which was not within the knowledge of the petitioner or could not be produced by him; mistake or error apparent on the face of the record; or any other sufficient reason, which means a reason that is analogous to the other two grounds.

# Law Commission of India

*The President of India recently sanctioned the formation of the 23rd Law Commission for a three-year term.*

- Law Commission of India is a non-statutory body and is constituted by a notification of the Government of India, Ministry of Law & Justice.
- It is constituted with definite terms of reference to carry out research in the field of law, and the Commission makes recommendations to the Government (in the form of Reports) as per its terms of reference.
- It functions to the Ministry of Law and Justice as an advisory body.
- A law commission is created when the Union government passes a resolution for the formation a new commission after the expiry of the last one.
- After the resolution is passed, and the President gives assent to it, the government has the liberty to choose the chairperson for the new commission.



Law Commission of India

# Parliamentary Committee on Official Language

*Recently, the Union Home Minister was unanimously re-elected the Chairperson of the Parliamentary Committee on Official Language.*

- The Parliamentary Committee on Official Language was constituted under the provisions of Section 4 of the Official Languages Act, 1963, in the year 1976.
- Section 4 of the Act says “There shall be constituted a Committee on Official language, on a resolution to that effect being moved in either House of Parliament with the previous sanction of the President and passed by both Houses”.
- The Committee is chaired by the Union Home Minister, and has, in accordance with the provisions of the 1963 Act.
- Under the provisions of the 1963 Act, the panel submits its report to the President, who “shall [then] cause the report to be laid before each House of Parliament, and sent to all the State Governments”.
- Purpose of the committee is to review the progress made in the use of Hindi for official purposes, and to make recommendations to increase the use of Hindi in official communications.
- It comprises 30 members of Parliament, of which 20 are from the Lok Sabha and 10 from the Rajya Sabha.

# Inquiry Wing of Lokpal

*The Lokpal has constituted an inquiry wing to conduct a preliminary probe into graft-related offences committed by public servants.*

- Section 11 of the Lokpal and Lokayuktas Act, 2013, mandates the Lokpal to establish an inquiry wing.
- This wing is responsible for conducting preliminary inquiries into offences under the Prevention of Corruption Act, 1988, allegedly committed by specified public servants and functionaries.
- There will be a Director of Inquiry under the Lokpal chairperson.
- The director will be assisted by three Superintendents of Police (SPs) SP (general), SP (economic and banking) and SP (cyber).
- Each SP will be further assisted by inquiry officers and other staff.
- The Inquiry Wing must finalize its preliminary inquiry and submit a report to the Lokpal within 60 days.
- This report should include feedback from both the public servant and the designated competent authority for each category of public servant.

## Sugamya Bharat App

- Sugamya Bharat App is an initiative of the Department of Empowerment of Persons with Disabilities (DE-PwD), Ministry of Social Justice and Empowerment.
- Designed to aid people with disabilities and the elderly, the Sugamya Bharat app allows users to report accessibility problems in public infrastructure, transportation and buildings.
- Identification of issues/complaints from the public related to accessibility at public places (Need to capture location of the place through Google Maps).
- Uploading geo tagged pictures: To understand and identify which type of public place is having issues related to accessibility for disabled people.
- Any person facing difficulty or issue related to accessibility in India can raise their concerns/grievances on the App.
- Only accessibility-related issues pertaining to Buildings, Transportation Systems and ICT (websites and TV viewing) can be registered at the App.
- Complaints are filed by uploading photos, which are then forwarded to relevant authorities.
- To enhance the app's features, the government plans to redesign it with AI capabilities.
- The upgraded version will include an AI-powered chat bot and multilingual interface, improving its overall functionality.
- A partnership has been established with the NGO Mission Accessibility and the research institute I-STEM to develop the AI-enabled app.



# Anti-Dumping Duty

*The Union Ministry of Commerce and Industry recently recommended imposing an anti-dumping duty on aluminium foil imported from China.*

- Anti-Dumping Duty is a protectionist tariff that a domestic government imposes on foreign imports that it believes are priced below fair market value.
- Dumping is a process wherein a company exports a product at a price that is significantly lower than the price it normally charges in its home (or its domestic) market.
- The duty is priced in an amount that equals the difference between the normal costs of the products in the importing country and the market value of similar goods in the exporting country or other countries that produce similar products.
- It is imposed to protect local businesses and markets from unfair competition by foreign imports.
- Thus, the purpose of anti-dumping duty is to rectify the trade distortive effect of dumping and re-establish fair trade.
- The use of anti-dumping measures as an instrument of fair competition is permitted by the World Trade Organization (WTO).
- The WTO allows the government of the affected country to take legal action against the dumping country as long as there is evidence of genuine material injury to industries in the domestic market.
- In India, the Ministry of Finance makes the final decision on whether to impose anti-dumping duties.

## INDIAsize Initiative

*The government will soon roll out the much-awaited 'INDIAsize' initiative, the Union Textiles Minister said recently.*

- INDIAsize Initiative is an initiative of the Ministry of Textiles which aims to establish standardized measurements designed to better suit Indian body types.
- Presently, international and domestic brands available in India use measurements from the US or the UK for garments, having 'small', 'medium' and 'large' sizes.
- However, Western body types differ from Indians in terms of height, weight, or specific measurements of body parts. It fails to account for the diversity in Indian body types, leading to frequent fitting issues and consumer dissatisfaction.
- The Ministry of Textiles sanctioned the INDIAsize project to develop standard body sizes for the Indian apparel sector to address the prevailing disparities and inconsistencies in provided fits.
- The project entails gathering anthropometric data pan India from more than 25000 male and female persons between the age group of 15 years and 65 years using human safe 3D whole body scanning technology.
- The created body size chart will help national and international retailers and manufacturers to produce goods which are best suited for Indian body types and create a balance between demand and supply of well fitted garments.

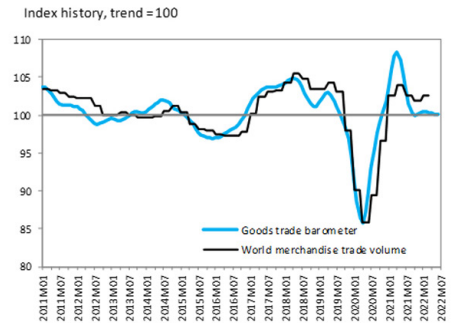


# Goods Trade Barometer

Indian merchandise exports could likely improve in the second half of the year, as the World Trade Organization (WTO) Goods Trade Barometer indicated an upturn in global trade volume.

- Goods Trade Barometer was formerly known as the World Trade Outlook Indicator.
- It is developed by the World Trade Organization and provides “real-time” information on trends in world trade.
- It is a leading indicator that signals changes in world trade growth two to three months ahead of merchandise trade volume statistics.
- It combines a variety of trade-related component indices into a single composite index that highlights turning points in world merchandise trade and provides an indication of its likely trajectory in the near future.
- A reading of 100 indicates trade expansion in line with recent trends. Readings greater than 100 suggest above-trend growth while readings below 100 indicate below-trend growth.
- This Barometer is updated on a quarterly basis.
- The current value of the WTO Goods Trade Barometer, an early indicator of the trajectory of merchandise trade volume, stands at 103—above both the quarterly trade volume index and the baseline value of 100.
- This suggests that merchandise trade has been picking up in the third quarter of 2024.

Goods trade barometer  
Index value, June 2022 = 100.0



## Vertical Fiscal Imbalance

There is the problem of Vertical Fiscal Imbalance (VFI) in Indian fiscal federalism, where expenditure decentralization overwhelms the revenue-raising powers of the States.

- Vertical Fiscal Imbalance (VFI) is defined as the share of sub-national governments’ own spending not financed through their own revenues.
- A VFI describes a situation in which revenues do not match expenditures for different levels of government.
- VFI is the fiscal gap in the sub-national governments due to improper decentralization of public revenue and expenditure.
- This asymmetry in revenue and expenditure decentralization is called Vertical Fiscal Asymmetry (VFA).
- It is a structural issue that can be resolved if revenue and expenditure responsibilities can be reassigned.
- It can be corrected through the financial transfers from the Union to the state governments.
- The simple difference between horizontal and vertical fiscal imbalances lies in who they affect.
- With a horizontal fiscal imbalance, revenues and spending are mismatched for different regions of the country.
- In a VFI, revenue and spending are not balanced for different government levels.

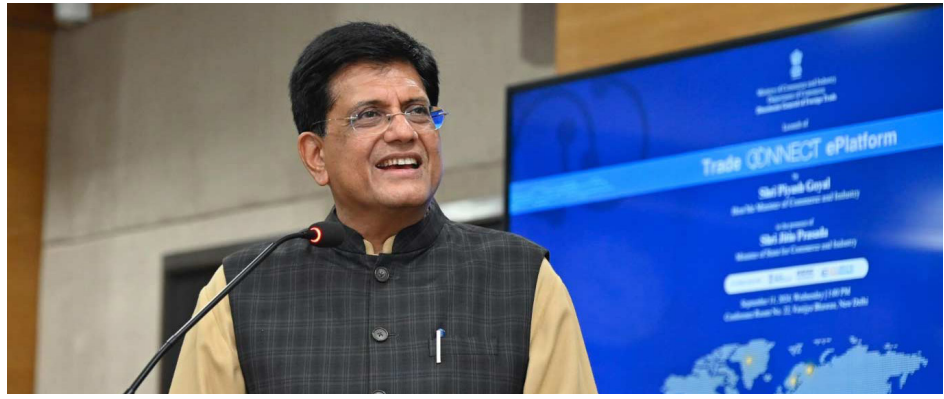
## Trade Connect e-Platform

The Union Minister for Commerce and Industry launched the Trade Connect e-platform.

- Trade Connect e-Platform is a new digital initiative aimed at transforming the landscape of international trade for Indian exporters, especially MSMEs (Medium, Small and Medium Enterprises).
- It will connect Indian Exporters, MSMEs and Entrepreneurs with various stakeholders including Indian Missions Abroad, Export Promotion Councils, and other Partner Government Agencies.

- The platform will provide information on trade events taking place in different parts of the world, benefits available due to India's Free Trade Agreements (FTAs) and other international trade-related information and data.

- The platform, developed in collaboration with key partners including the Ministry of MSME, EXIM Bank, Department of Financial Services (DFS) and the Ministry of External Affairs (MEA).



- This initiative aligns with the government's broader vision of promoting a Digital India, fostering greater transparency, and empowering businesses by providing them with seamless access to crucial trade information.

- It will reduce the costs, lead times and complexities associated with global trade, ultimately ensuring that Indian businesses can thrive in the international marketplace.

## Nidhi Companies

*The Registrar of Companies (RoC) under the corporate affairs ministry has penalised over two dozen Nidhi companies in about a fortnight for alleged violations of Companies Act provisions.*

- A NIDHI Company is recognised under Section 406 of the Companies Act 2013 and typically operates in the Non-Banking Financing Sector of India.

- It is formed to borrow and lend money to its members. It inculcates the habit of saving among its members and works on the principle of mutual benefit.

- It is not required to receive the license from the Reserve Bank of India (RBI), as these are registered with the Companies Act.

- A minimum of seven members is required to start a Nidhi Company out of which three members must be the directors of the company.

- Activities Prohibited in a Nidhi Company

- It can't deal with chit funds, hire-purchase finance, leasing finance, insurance or securities business.

- It is strictly prohibited from accepting deposits from or lending funds to, any other person except members.

- Nidhi companies should not issue preference shares, debentures or any other debt instrument in any manner, name or form.

- Nidhi companies should not open current accounts with their members.

## Dispute Resolution Scheme

*The Central Board of Direct Taxes (CBDT) has introduced the Dispute Resolution Scheme (e-DRS), 2022, as a streamlined and efficient platform for taxpayers to resolve their income tax disputes.*

- Dispute Resolution Scheme aims to reduce litigation and provide a faster and more cost-effective resolution for taxpayers.

- This initiative, established under section 245MA of the Income-tax Act, 1961, will allow taxpayers to resolve disputes electronically through Dispute Resolution Committees (DRCs).

- Taxpayers who meet certain conditions specified in section 245MA can apply for dispute resolution.

- This includes cases where the disputed amount does not exceed 10 lakh and the taxpayer's income for the relevant year is below Rs. 50 lakh.

- The dispute must not involve information from searches or international agreements.

- The DRC, established in all 18 regions across the country, can modify orders, reduce penalties, or waive prosecution. They are required to decide within six months of receiving the application.

## United Nations Security Council

*India should get its 'rightful place' as a permanent member of the United Nations Security Council (UNSC), according to ex-Singaporean diplomat Kishore Mahbubani, a former president of the top UN body.*

- United Nations Security Council (UNSC) is one of the five principal organizations of the United Nations (UN).
- It has primary responsibility for the maintenance of international peace and security.
- Under the Charter of the UN, all Member States are obligated to comply with UNSC decisions.
- The Security Council takes the lead in determining the existence of a threat to peace or an act of aggression.
- It calls upon the parties to a dispute to settle it by peaceful means and recommends methods of adjustment or terms of settlement.
- In some cases, the Security Council can resort to imposing sanctions or even authorising the use of force to maintain or restore international peace and security.
- Powers:
  - Establishment of peacekeeping operations
  - Establishment of international sanctions
  - Authorization of military action through Security Council resolutions
- Members: It has 15 Members, and each Member has one vote.
- 5 permanent members known as P5, including the United Kingdom, China, France, Russia and the United States.

## World Gold Council

*The World Gold Council (WGC) has increased India's gold consumption projection for 2024 to 850 tonnes from 750 tonnes.*

- This revision is due to favourable monsoon conditions and a reduction in gold import duty.
- The rise in demand, mainly driven by jewellery purchases, is expected to continue through Diwali-Dhanteras. Additionally, interest in gold ETFs is growing
- Gold is a significant global commodity. In 2022, Switzerland, the United States, and the United Arab Emirates were the leading exporters of gold. Major importers included Switzerland, China, the United Arab Emirates, the United Kingdom, and India.
- The top producers of gold are China, Australia, and Russia.
- In India, the largest resources of gold ore (primary) are located in Bihar (44%), followed by Rajasthan (25%) and Karnataka (21%).
- India is the world's second-largest consumer of gold, after China, reflecting its substantial demand for this precious metal.
- WGC:
  - The World Gold Council (HQ: London; est. 1987) is an international trade association for the gold industry. It has offices in India, China, Singapore, the UAE and the United States.
  - The organization's members are gold mining companies.

# Voters to Elect Judges at All Levels: Mexico

*Mexico has become the first country in the world to allow voters to elect judges at all levels.*

- The reform was championed by outgoing President Andres Manuel Lopez Obrador, who criticized the existing judicial system as serving the elite.
- The reform, which faced significant protests and opposition, mandates that around 1,600 judges, including Supreme Court justices, will stand for election in 2025 or 2027.
- Critics argue that this system may expose judges to criminal influence, particularly in a country where drug cartels hold significant power.
- Despite warnings from the Supreme Court chief justice, the reforms were passed both in the upper house and the lower house

## FIRST LEGALLY BINDING AI TREATY

*The first legally binding AI treaty, signed by the US, EU, and UK, prioritizes human rights and democracy, adopting a risk-based approach to AI regulation across public and private sectors.*

- The Framework Convention on AI by the Council of Europe aims to mitigate AI threats to human rights, democracy, and the rule of law.
- Unlike the EU AI Act, it ensures AI lifecycle activities align with these principles.
- Key Features of the AI Treaty:
  - Regulates AI systems based on risk levels throughout their lifecycle.
  - Ensures AI systems uphold human rights, democracy, and the rule of law.
  - Covers AI use in both public and private sectors globally.
  - Signatories are responsible for harmful and discriminatory AI outcomes.
  - Victims of AI-related rights violations are guaranteed legal protection.
  - AI systems must not undermine democratic institutions or judicial independence.
  - Involves commitments from nations beyond Europe for a united global AI standard.
  - Relies on monitoring for compliance rather than fines or penalties.



# WHO Global Framework For Pathogen Origins

*WHO Launches First Global Framework For Understanding the Origins Of New Or Re-Emerging Pathogens*

- It is Developed by SAGO (Scientific Advisory Group for the Origins of Novel Pathogens)
- Established by WHO in 2021; consists of global independent experts
- Key Principles is to Aligns with International Health Regulations (IHR) and One Health approach
- IHR is a legally binding framework for global health responses
- One Health integrates human, animal, and ecosystem health

## Paris Zinc Roofers

*The French Culture Ministry nominated the zinc roofing profession in Paris for UNESCO's Intangible Cultural Heritage (ICH) list, highlighting the craftsmanship.*

- Zinc roofs have been integral to Paris's skyline for nearly 200 years, with 21.4 million square metres of zinc-covered roofs.
- While zinc roofs contribute to Paris's iconic look, they face criticism for overheating buildings due to poor insulation; zinc roofs exacerbate heat absorption, leading to higher indoor temperatures.
- The UNESCO ICH list includes knowledge and skills that are passed down through generations, such as: Oral traditions, Performing arts, Social practices, Rituals, Festive events, Traditional crafts, and Contemporary rural and urban practices.
- India has a total of 15 elements inscribed on the UNESCO ICH list.

# United Nations Relief And Works Agency

*An Israeli strike on a UNRWA school-turned-shelter has killed at least 18 people and injured over a dozen others in Nuseirat, Gaza.*

- United Nations Relief and Works Agency for Palestinian Refugees in the Near East (UNRWA) is a subsidiary agency created by the United Nations (UN) General Assembly in 1949.
- Objective is to provide relief, health and education services for Palestinians who lost both their homes and their means of livelihood during the Arab-Israeli wars following the establishment of the State of Israel in 1948.
- Beginning operations in 1950, UNRWA was originally headquartered in Beirut but was moved to Vienna in 1978.
- Following the conclusion of the Oslo Accords in the early 1990s, the General Assembly moved the agency to the Gaza Strip in 1996 to demonstrate the General Assembly's commitment to the Arab-Israeli peace process.
- In the absence of a solution to the Palestine refugee problem, the General Assembly has repeatedly renewed UNRWA's mandate, most recently extending it until 30 June 2026.
- The agency's services encompass education, health care, relief and social services, camp infrastructure and improvement, microfinance, and emergency assistance, including in times of armed conflict.
- It provides services in its five fields of operations: Jordan, Lebanon, Syria, the Gaza Strip, and the West Bank, including the East of Jerusalem.
- It supports more than five million registered Palestinian refugees, and their patrilineal descendants, who fled or were expelled from their homes during the 1948 Palestine War, as well as those who fled or were expelled during and following the 1967 Six-Day War.
- It is funded almost entirely by voluntary contributions from UN Member States.
- UNRWA also receives some funding from the Regular Budget of the UN, which is used mostly for international staffing costs.

## Forum On China-Africa Cooperation

*China is hosting the ninth Forum on China-Africa Cooperation (FOCAC) Summit, a diplomatic event aimed at strengthening ties with African nations.*

- Forum on China-Africa Cooperation was established in 2000 to formalise the strategic partnership between China and African nations.
- A summit is conducted every three years, with the host alternating between China and an African member.
- The FOCAC counts 53 African nations as its members – the entire continent except Eswatini, which has diplomatic ties with Taiwan against Beijing's "One China" Policy.
- The African Union Commission, the continental bloc tasked with ensuring cooperation and economic integration across its member countries, is also a member.
- The theme this year is "Joining Hands to Advance Modernization and Build a High-Level China-Africa Community with a Shared Future."
- The current summit is expected to address state governance, industrialisation, agricultural upgradation and improved cooperation over China's infrastructure financing via the Belt and Road Initiative (BRI).

## Colombo Security Conclave

*Member states of the Colombo Security Conclave (CSC) recently signed the Charter and the MoU for the establishment of the CSC Secretariat in Colombo.*

- Colombo Security Conclave (CSC) is a regional security grouping comprising India, Bangladesh, Sri Lanka, Maldives, and Mauritius.
- The CSC's core objective is to promote regional security by addressing transnational threats and challenges of common concern to the Member States.
- The CSC, initially known as the Trilateral for Maritime Security Cooperation, evolved out of trilateral meetings between National Security Advisors (NSAs) and Deputy NSAs from India, Maldives, and Sri Lanka, starting in 2011.
- It came to a standstill after 2014 due to rising tensions between India and the Maldives.
- Since its revival and re-branding as the CSC in 2020, Mauritius and more recently, Bangladesh were added as members of the grouping.
- Current members of CSC include India, Bangladesh, Maldives, Mauritius and Sri Lanka, while the Seychelles is an observer nation.
- CSC brings together NSAs and Deputy NSAs of the member countries.

# Law on Deceased Personalities' Likeness

California's AB 1836, passed on August 31, 2024, regulates the commercial use of deceased personalities' likenesses, including their voice and image. The law aims to protect against unauthorized AI-generated replicas by requiring consent from the deceased's heirs for such uses.

- Using a deceased personality's likeness without consent from their heirs is prohibited.
- Fines range from \$750 to \$10,000, plus potential damages.
- Covers digital replicas and excludes uses in artistic, political, or newsworthy works.
- Likeness rights can be transferred through contracts and passed to the deceased's family or are terminated if no heirs are present.
- The law respects the autonomy of deceased individuals by requiring consent from their heirs before using their likenesses.
- It protects the privacy of deceased personalities, ensuring their likenesses are not exploited without authorization.
- The law mandates compensation for unauthorized use, reflecting the value of intellectual and personal property.
- It seeks to prevent potential exploitation and misuse of deceased personalities' likenesses, upholding fairness for the families.
- By defining clear rules and penalties, the law ensures transparency in the use of digital replicas and likenesses.



## SROTHAS

INSIGHTS QUIZ COMPETITION

**WINNER**



**SIJI.K.WILSON**

*Congratulations*





*The Poba Reserve Forest in Assam's Dhemaji district will soon be notified as a wildlife sanctuary.*

- Poba Reserve Forest is a rainforest located in the northeastern part of Assam.
- The Reserved Forest (RF) was created in the year 1924 and covers an area of 10,221 hectares.
- Towards the north are the foothills of the Himalayan range in Arunachal Pradesh; towards the east and south are the Siang, Dibang, and Lohit River systems confluencing into the mighty Brahmaputra and the Dibru-Saikhowa National Park; and towards the west are the revenue villages of the Jonai Sub-division of the Dhemaji district of Assam.
- The peripheral area of the RF is inhabited by a few ethnic groups, such as Mising, Bodo, Sonowal Kachari, and Hajong (Rabha).
- It is one of the richest rain forests of North-East India in terms of the flora and fauna found in it.
- It is home to various arboreal species, including the slow loris and capped langur. Among the most common mammal species is the wild boar.
- The forest is also a habitat for about 45 species of birds and reptiles, and the confluence of the Siang and Lohit rivers supports a diverse range of fish species.
- The forest is renowned for its variety of orchids.
- It serves as an important migratory route for various animals, particularly elephants, as it connects the D'Ering Memorial Wildlife Sanctuary (Arunachal Pradesh), Kabu Chapri Proposed Reserve Forest, and Dibru-Saikhowa National Park (Assam).
- This corridor is the second significant elephant migration route from the north to the south bank of the Brahmaputra River, the other being the Panpur-Kaziranga route.

## **Swachh Vayu Survekshan Award**

*The Union Minister of Environment, Forest and Climate Change presented the Swachh Vayu Sarvekshan Award 2024 on the occasion of the International Day of Clean Air for Blue Skies.*

- Swachh Vayu Survekshan Award is an initiative by Ministry of Environment, Forest and Climate Change (MoEF&CC) to rank cities on the basis of the implementation of activities approved under the city action plan and air quality in 130 NCAP cities.
- In September 2022, the MoEF&CC released guidelines on 'Swachh Vayu Sarvekshan- Ranking of Cities' under the National Clean Air Programme (NCAP).

- The aim of launching Swachh Vayu Sarvekshan is to give a ranking to 130 cities in the country for implementing City Action Plans prepared as part of NCAP for reducing air pollution by up to 40% by 2025-26.
- Objectives is to create awareness among all sections of the society, Inform citizens about the health impacts related due to exposure, Comparing air quality conditions at different locations/cities, To achieve the goal of NCAP “Clean air for all”.
- All 130 cities covered under NCAP are assessed based on information submitted under ranking framework by cities/ULBs on the PRANA portal (dashboard to capture progress under the NCAP programme).
- Swachh Vayu Survekshan Awards 2024 were presented to the best performing NCAP cities under
- Category-1 (population over 10 Lakhs) to Surat, Jabalpur and Agra;
- Category-2 (population between 3 and 10 Lakhs) to Firozabad, Amravati and Jhansi; and
- Category-3 (population under 3 Lakhs) to Raebareli, Nalgonda and Nalagarh.

## Pilibhit Tiger Reserve

*Poachers recently killed two chitals in the Pilibhit Tiger Reserve (PTR) and fled after stealing a rifle from a forest guard.*

- Pilibhit Tiger Reserve (PTR) is located in Pilibhit District, Lakhimpur Kheri District and Bahraich District of Uttar Pradesh.
- It lies along the India-Nepal border in the foothills of the Himalayas and the plains of the ‘terai’ in Uttar Pradesh.
- The river Gomti originates from the PTR, which is also the catchment of several others like Sharda, Chuka, and Mala Khannot.
- The Sharda Sagar Dam is on the boundary of the reserve.
- It has a dry and hot climate, which brings a combination of dry teak forest and Vindhya Mountain soils.
- It is home to a myriad of wild animals including the endangered tiger, swamp deer, Bengal florican, hog deer, leopard, etc.
- The spotted deer, or chital/cheetal is a deer species native to the Indian subcontinent.
- It is the most common deer species in Indian forests.

## Myristica Swamps

*A group of researchers recently discovered a Myristica swamp forest in Kumbhalgarh, Maharashtra, which is protected by the local community.*

- Myristica Swamps are freshwater swamps dominated by evergreen trees belonging to the Myristicaceae family.
- They are also denoted as living fossils due to the primitive nature of Myristica plants.
- With an evolutionary origin of about 140 million years, the swamps are valuable for evolutionary studies.
- These forests are characterized by trees with large protruding roots jutting out of waterlogged soil, which remains inundated throughout the year.
- Geographical distribution: In India, these unique habitats occur in the Western Ghats and a smaller distribution exists in the Andaman and Nicobar Islands and Meghalaya.
- Historically, they formed a large hydrological network all along the Western Ghats.
- The formation of these swamps is dependent on abiotic conditions like the shape of the valley between the forested hills, the amount of rainfall a place receives (with an average of 3000 mm) and water availability throughout the year.
- Typically, Myristica swamps are seen next to rivers and help in retaining water and act as a sponge, ensuring perennial water availability.
- These forests have higher ability to sequester carbon than non-swampy forests.
- These swamps are home to many vertebrate and invertebrate faunal species. This is due to stable macroecological conditions like high humidity, moderate temperature, and macrohabitat availability.
- One example is the Myristica Swamp Treefrog (*Mercurana myristicapalustris*), only reported from a few pockets of the Shendurney and Peppara Wildlife Sanctuaries in Kerala.



# 20th Maritime State Development Council

*The 20th Maritime State Development Council (MSDC) concluded recently in Goa with significant advancements in India's maritime sector.*

- This event brought together stakeholders from the Central Government, States, and Union Territories to resolve over 80 issues, focusing on port modernisation, maritime infrastructure, connectivity, and regulatory frameworks.
- Key Highlights of the 20th MSDC:
  - The MSDC launched the National Safety in Ports Committee (NSPC) application on the National Single Window System platform to streamline regulatory processes, improve efficiency, and reduce costs for maritime sector stakeholders through real-time performance monitoring and enhanced information sharing.
  - Indian International Maritime Dispute Resolution Centre (IIMDRC) was launched to resolve multi-modal and international maritime disputes, reinforcing the “Resolve in India” initiative.
  - Indian Maritime Centre (IMC), a think tank focused on fostering collaboration and innovation among maritime stakeholders was launched.
  - The council discussed the implementation of a state ranking framework and a port ranking system to promote competition and improve performance in the maritime sector.
  - The National Maritime Heritage Complex (NMHC) at Lothal, Gujarat was highlighted as an international tourist destination, showcasing India's rich maritime heritage through advanced technology.
  - Seafarers were recognised as essential workers, improving their working conditions and access to shore leave.
  - India's 13th Major Port at Vadhavan in Maharashtra and the designation of Galathea Bay in the Andaman & Nicobar Islands as a ‘Major Port’ were highlighted.
  - The key highlight of the event was the keel laying ceremony for India's largest dredger, a 12,000 Cu. M. Trailer Suction Hopper Dredger (TSHD), at Cochin Shipyard Limited, marks a significant achievement for India's maritime infrastructure and capabilities.
  - Discussions were held on establishing a Mega Shipbuilding Park across multiple states to consolidate ship-building capabilities and drive innovation.
  - Plans were made to install Radioactive Detection Equipment at ports for enhanced security. Discussions included setting up places of refuge for ships in distress.

## DISTRICT AGRO-METEOROLOGY UNITS

*Press Trust of India reported that the India Meteorological Department (IMD) is planning to revive District Agro-Meteorology Units (DAMUs) under the Gramin Krishi Mausam Sewa (GKMS) scheme.*

- These were established by the India Meteorological Department (IMD) in 2018 in collaboration with the Indian Council of Agricultural Research (ICAR).
- The aim was to use weather data to prepare and disseminate sub-district-level agricultural advisories.
- The DAMUs were located within Krishi Vigyan Kendras (KVKs).
- Scientists and researchers trained in meteorology and agriculture were recruited as DAMU staff.
- They used weather data provided by the IMD like rainfall, temperature and wind speeds to prepare agricultural advisories related to sowing and harvesting, usage of fertilizers and pesticides, irrigation, etc.
- These advisories were sent to millions of farmers across the country free of cost in local languages twice a week.
- They were shared via text messages, WhatsApp groups, newspapers and also through in-person communication from DAMU staff and KVK officers.
- These advisories provided weather information in advance, they helped farmers plan activities like irrigation.

# World Largest Plastic Polluter

*A recent study published in the journal Nature has revealed that India is the highest contributor to global plastic pollution.*

- India accounts for approximately one-fifth of the total plastic waste generated worldwide.
- Key Findings of the Study:
  - India generates approximately 9.3 million tonnes of plastic pollution annually. Out of this, 5.8 million tonnes (mt) are incinerated, while 3.5 million tonnes are released into the environment as debris.
  - This figure is significantly higher than Nigeria (3.5 mt), Indonesia (3.4 mt), and China (2.8 mt).
  - India's waste generation rate is approximately 0.12 kilograms per capita per day.
  - Plastic waste emissions are highest across countries in Southern Asia, Sub-Saharan Africa and South-eastern Asia. There is a clear divide in plastic pollution sources.
  - Global South countries, such as India, often rely on open burning for waste management, while the Global North uses controlled systems, leading to less unmanaged waste.
  - Globally, 69% or 35.7 Mt per year of plastic waste emissions come from 20 countries.
  - In the Global South, plastic pollution mainly comes from open burning due to poor waste management, while in the Global North, it's mostly from uncontrolled debris.
  - High-income countries have higher plastic waste generation rates but are not among the top 90 polluters due to 100% collection coverage and controlled disposal.

## Teal Carbon

*India's first study on 'teal carbon', undertaken at Keoladeo National Park (KNP) in Rajasthan's Bharatpur district, has highlighted the significance of wetland conservation to address the challenges of climate adaptation and resilience.*

- Teal Carbon refers to carbon stored in non-tidal freshwater wetlands, encompassing carbon sequestered in vegetation, microbial biomass and dissolved and particulate organic matter.
- These ecosystems are considered to be more effective at carbon capture and storage than terrestrial forest ecosystems and can store and sequester more carbon than any other type of terrestrial ecosystem.
- The concept of teal carbon is a recent addition to the environmental science pertaining to organic carbon in inland fresh wetlands.
- It is a colour-based terminology reflects the classification of organic carbon based on its functions and location rather than its physical properties.
- At the global level, the storage of teal carbon across the ecosystems is estimated to be 21 petagrams of carbon (PgC), which is a unit to measure carbon.
- Peatlands, freshwater swamps and natural freshwater marshes account for a significant amount of this storage.
- Though these wetlands play a crucial role in regulating greenhouse gases, they are vulnerable to degradation from pollution, land use changes, water extraction and landscape modifications.

## Bandipur Tiger Reserve

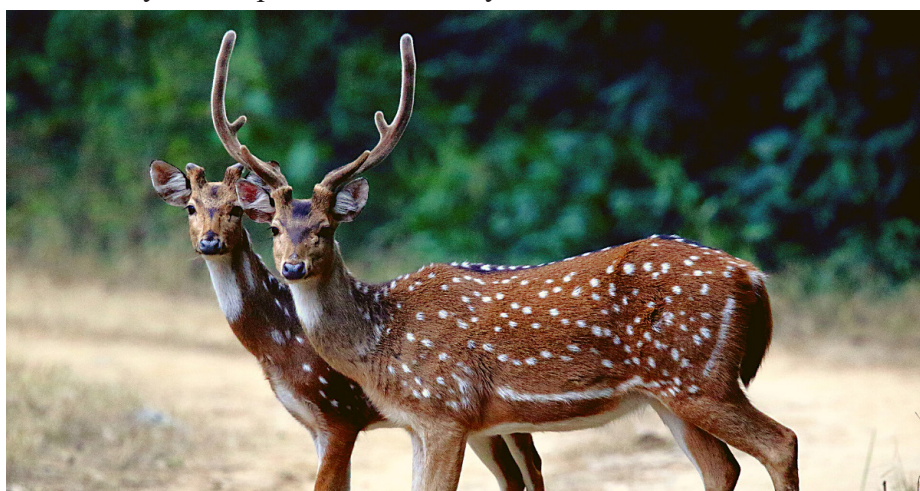
*An alert elephant patrolling team recently rescued a tusker that was stuck in a rail barricade in the Maddur range of Bandipur Tiger Reserve.*

- Bandipur Tiger Reserve is situated in two contiguous districts (Mysore and Chamarajanagar) of Karnataka and located in the tri-junction area of the States of Karnataka, Tamil Nadu, and Kerala.
- Geographically, it is an "ecological confluence" of the Western and Eastern Ghats.
- It was once a hunting ground for the rulers of the neighbouring kingdom of Mysore.
- It was established in the year 1931 as Venugopala Wildlife Park by the Maharaja of Mysore.
- It was then expanded with the name Bandipur Tiger Reserve under Project Tiger in 1973.
- It is part of the larger Nilgiri Biosphere Reserve, which is recognized as a UNESCO World Heritage Site.

# National Board For Wildlife

The standing committee of the NBWL (SC-NBWL) recently cleared projects such as a transmission line in Little Rann of Kutch, a controversial transmission line project in Goa's Mollem national park, among others

- National Board for Wildlife (NBWL) is a statutory board constituted by the Central Government under the Wild Life (Protection) Act, 1972.
- It is responsible for guiding the government's decisions on matters related to wildlife conservation and issuing approvals for projects in protected areas (PAs).
- The WLPA mandates that without the approval/recommendation of the NBWL, construction of tourist lodges, alteration of the boundaries of PAs, destruction or diversion of wildlife habitat, and de-notification of Tiger Reserves, cannot be done.
- It is a 47-member committee, headed by the Prime Minister and the Minister of Environment, Forest, and Climate Change (environment minister) as vice chairperson.
- In addition to offices and institutions directly involved in conservation and protection of wildlife, the NBWL also has the chief of army staff, defence secretary, and expenditure secretary to Government of India as members.
- Further, the central government nominates 10 members who are eminent conservationists, ecologists, and environmentalists.
- The SC-NBWL shall consist of the Vice-Chairperson (environment minister), the Member Secretary, and not more than ten members to be nominated by the Vice-Chairperson from amongst the members of the NBWL.
- While the act envisaged the board and the committee as advisory bodies, their powers and responsibilities were increased in 2002, after the Supreme Court ruled that the SC-NBWL had to approve all proposals that sought permission for "any activity" within a wildlife sanctuary.
- The SC-NBWL also makes recommendations on the setting up of and management of National Parks, Sanctuaries, and other PAs and on matters relating to restriction of activities in those areas.
- The SC-NBWL shall ordinarily meet once in three months



**CATHOLIC COLLEGE  
PATHANAMTHITTA**

# TRANSPIRE 2024

**CIVIL SERVICE FOUNDATION PROGRAMME  
FOR COLLEGE STUDENTS**

Catholic English Civil Service Club  
in Collaboration with  
**IAS HUB, Thiruvananthapuram**  
**27 September 2024**  
**10:00 AM Mar Clemis Hall**

Inauguration  
**Mr. Prem Krishnan S IAS**  
District Collector, Pathanamthitta

Dr. Sindu Jones, Principal  
Fr. Saji Mekattattu, Administrator, IAS HUB  
Mr. Shijin S Mathew, Faculty  
Dr. Jyoti Susan Abraham, HOD  
Dr. Asha Philipose, Coordinator  
Mr. Rijo John, Coordinator

9567 744 544  
mail@mgocsmcsa.com  
Orthodox Students Centre Complex,  
Opp. AKG Centre Palayam, Trivandrum



## Uri-I Hydroelectric Project

*The Expert Appraisal Committee (EAC) of the Union Ministry of Environment, Forest and Climate Change has deferred the proposal for the grant of Environmental Clearance (EC) to the Stage-II of the Uri-I Hydroelectric Project.*

- Uri-I Hydroelectric Project is an operating hydroelectric power plant located in the Jhelum River of Uri town in the Baramulla district of Jammu & Kashmir.
- It is located very near the Line of Control (LOC), the de facto border between India and Pakistan.
- The power project was commissioned in 1997 with a total installed capacity of 480 MW.
- It is owned by the Central Government, and the operating company of the plant is National Hydroelectric Power Corporation Limited (NHPC).
- The unit size of the power plant is 480 MW, having 4 units of 120 MW each.
- Jhelum River is a river that flows in India and Pakistan.

## Typhoon Yagi

*Typhoon Yagi has caused severe damage across Southeast Asia, affecting the Philippines, China, Laos, Myanmar, Thailand, and particularly Vietnam.*

- It is the strongest tropical cyclone Asia has encountered till September 2024 and the second most powerful globally after Hurricane Beryl (Atlantic Ocean).
- It originated as a tropical storm (wind speed upto 63 kmph) in the western Philippine Sea but became Category 5 typhoon with winds of 260 kmph.
- The Saffir-Simpson Hurricane Wind Scale categorizes tropical cyclones from Category 1 (119-153 kmph) to Category 5 (252 kmph or higher).
- Storms reaching Category 3 and higher are considered major tropical cyclones due to their potential for significant damage.”
- Storm systems with winds of 119 kmph and above are classified as hurricanes, typhoons, or tropical cyclones.”
- India launched Operation “Sadbhav” to provide aid and urgent supplies to Vietnam, Laos, and Myanmar.

## PM Surya Ghar—Muft Bijli Yojana

*The Ministry of New and Renewable Energy has come up with draft guidelines for the central financial assistance and payment security mechanism for the PM Surya Ghar—Muft Bijli Yojana.*

- The union cabinet approved the Rs 75,000 crore PM Surya Ghar—Muft Bijli Yojana to benefit 1 crore families in February 2024.
- The draft guidelines have been issued under the renewable energy services company (RESCO) model and utility led asset (ULA) model of the rooftop solar scheme—‘PM Surya Ghar—Muft Bijli Yojana’.
- Renewable Energy Services Company (RESCO) Model: RESCO develops and owns the rooftop solar system installed on the consumer’s rooftop for at least five years.

- The RESCO also makes all the operational expenditures required for the maintenance of the plant, as needed.
- Customers pay the RESCO for the electricity generated and receive net metering benefits on their electricity bill.
- The RESCO may enter into an arrangement with a distribution company (discom) for the sale of generated power to the grid under a power purchase agreement.
- Utility led Asset (ULA) Model: Under it, a state discom owns the rooftop solar systems for the project period of at least of five years, after which the ownership is transferred to the household.



**PM Surya Ghar-Muft Bijli Yojana:**

- It is a central scheme to promote the adoption of solar rooftop systems by providing substantial financial subsidies and ensuring ease of installation.
- It aims to provide free electricity to one crore households in India, who opt to install roof top solar electricity units.
- The households will be able to get 300 units of electricity free every month.

## Preservation of Indigenous Cattle Breeds

• The National Institute of Animal Biotechnology (NIAB) is working on a number of initiatives for preservation and sustainable development of the livestock sector.

• NIAB is using Next Generation Sequencing (NGS) data and genotyping technology to establish molecular signatures for registered cattle breeds.

• Molecular signatures help in accurately identifying and maintaining the purity of indigenous cattle breeds and conserving unique genetic traits.

• NIAB is focussing on developing new-generation vaccines against diseases like brucellosis to improve animal health and reduce economic losses.

• Efforts are aligned with the

‘BioE3 (Biotechnology for Economy, Environment, and Employment)’ policy to enhance biomanufacturing.

• NIAB is focussing on development of ‘bio-scaffolds’ for tissue repair and drug delivery using natural and 3D-printed materials.

• Scaffold is a base material in which cells and growth factors are embedded to construct a substitute tissue.

• A bovine lung cell-based 3D model has been created for tuberculosis drug screening and disease modelling.

• NIAB is working in line with six thematic areas set by the Department of Biotechnology (DBT) to promote a circular bio-based economy, focusing on alternative proteins and sustainable biomanufacturing.

• NIAB has plans to use bacteriophages and their ‘lytic’ proteins as antibiotics alternatives to target bacteria such as staphylococci, E. coli and streptococci.

• Bacteriophages, also known as phages, are viruses that infect and replicate only in bacterial cells. Bacteriophages kill bacteria.

• Phage lytic proteins are a clinically advanced class of enzyme-based antibiotics, so-called enzybiotics.

• A biomarker (metabolite and protein) has been developed for early assessment of nutritional stress which may lead to decreased productivity and infertility in cattle population

• NIAB promotes sustainable livestock farming through community engagement and programs like MILAN, which connects with livestock farmers to demonstrate new technologies.



# Digital Agriculture Mission

*The Union Cabinet Committee chaired by the Prime Minister of India approved the Digital Agriculture Mission with an outlay of Rs. 2817 Crore, including the central share of Rs. 1940 Crore.*

- Digital Agriculture Mission is conceived as an umbrella scheme to support digital agriculture initiatives, such as creating Digital Public Infrastructure, implementing the Digital General Crop Estimation Survey (DG-CES), and taking up other IT initiatives by the Central Government, State Governments, and Academic and Research Institutions.
- Three major components of DPI are envisaged under the Digital Agriculture Mission:
  - AgriStack, Krishi Decision Support System (DSS) and Soil Profile Maps.
  - Each of these DPI components will provide solutions that will allow farmers to access and avail of various services.
  - Farmers' Registry, Geo-referenced Village Maps and Crop Sown Registry, all of which will be created and maintained by state/ UT governments.
  - It will be given a digital identity ('Farmer ID') similar to Aadhaar, which will be linked dynamically to records of land, ownership of livestock, crops sown, demographic details, family details, schemes and benefits availed, etc.
  - Pilot projects for the creation of Farmer IDs have been carried out in six districts — Farrukhabad (Uttar Pradesh), Gandhinagar (Gujarat), Beed (Maharashtra), Yamuna Nagar (Haryana), Fatehgarh Sahib (Punjab), and Virudhunagar (Tamil Nadu).
  - It will provide details of crops planted by farmers. The information will be recorded through Digital Crop Surveys — mobile-based ground surveys — in each crop season.
  - It will link geographic information on land records with their physical locations.
  - It will create a comprehensive geospatial system to unify remote sensing-based information on crops, soil, weather and water resources, etc.
  - This information will support crop map generation for identifying crop sown patterns, droughts/flood monitoring and technology/model-based yield assessment for settling crop insurance claims by farmers.
  - Under the Mission, detailed Soil Profile Maps (on a 1:10,000 scale) of about 142 million hectares of agricultural land are envisaged to be prepared.
  - A detailed soil profile inventory of about 29 million ha has already been completed

## Prime Minister unveils Vision for India as Green Hydrogen Hub

*The Prime Minister has unveiled an ambitious vision to make India a global hub for green hydrogen production, utilization, and export.*

- Aims to lead in the production, utilization, and export of green hydrogen, making India a global leader.
- Government Initiatives: Policies, research, and international collaborations to drive the green hydrogen industry forward.
- Investment and Job Creation: Targets ₹8 lakh crore investment and 6 lakh jobs.
- Production Goals: By 2030, aims for a \$100 billion investment and production of 5 million metric tons of green hydrogen.
- National Green Hydrogen Mission focus on decarbonizing sectors like refineries, fertilizers, and steel.
- Energy Targets: 500 GW of non-fossil energy capacity by 2030 and net-zero emissions by 2070.

### Green Hydrogen :

- It is produced through a process called electrolysis, where water is split into hydrogen and oxygen using renewable energy sources such as solar or wind power.



# Musi River

*The Greater Hyderabad Municipal Corporation (GHMC) recently issued an urgent advisory for citizens to remain indoors as heavy rains continue to lash the city, causing the Musi River to rise significantly*

- Musi River is a river that flows through the southern Indian state of Telangana.
- It is a tributary of the Krishna River in the Deccan Plateau.
- It was known as the Muchukunda River in earlier days.
- Hyderabad stands on the bank of this river, which divides the city between the old and the new.
- It begins in the Anantagiri Hills near Vicarabad, Rangareddi district, 90 kilometers to the west of Hyderabad.
- It consists of two rivulets, Esi and Musa, which then converge into the Musi River.
- It joins the Krishna River near Wazirabad in Nalgonda district after covering a distance of about 240 km.
- Dams: Himayat Sagar and Osman Sagar are the two dams that are constructed over the river.

## Pradhan Mantri Gram Sadak Yojana-IV

*The Union Cabinet has approved the Pradhan Mantri Gram Sadak Yojana – IV (PMGSY-IV) for the period 2024-25 to 2028-29, aiming to enhance rural connectivity by constructing 62,500 km of new all-weather roads.*

- The initiative will connect 25,000 unconnected habitations with populations of over 500 in plains, over 250 in Northeast and hill states, and over 100 in Left Wing Extremism (LWE)-affected districts.
- The new roads are expected to catalyse socio-economic development in remote rural areas and improve access to educational, health, market, and growth centres.
- The scheme is designed to create 40 crore human-days of work employment.
- PMGSY is a central government scheme launched in 2000 to provide all-weather road connectivity to unconnected rural habitations.
- The scheme was originally a 100% centrally-sponsored initiative, but starting from the financial year 2015-16, the funding has been shared between the Central and State governments in a 60:40 ratio.
- Around 800,000 kilometres of rural roads have been built and 180,000 habitations were connected under various phases of the PMGSY scheme.



## Pradhan Mantri Kisan Maandhan Yojana

*The Pradhan Mantri Kisan Maandhan Yojana (PM-KMY), launched on 12th September 2019, has completed five successful years.*

- Pradhan Mantri Kisan Maandhan Yojana (PM-KMY) scheme has been started to provide social security to all landholding Small and Marginal Farmers (farmers whose land holdings are upto two hectares of land in the country).
- As of August 2024, 23.38 lakh farmers have enrolled, with Bihar and Jharkhand leading in registrations.
- Uttar Pradesh, Chhattisgarh, and Odisha have over 2.5 lakh, 2 lakh, and 1.5 lakh farmer registrations, respectively.
- This widespread participation highlights increasing awareness and growing adoption of the scheme among small and marginal farmers, reflecting its importance in ensuring financial stability for this vulnerable segment.

# Mission Mausam

*The Union cabinet has approved 'Mission Mausam' with an outlay of Rs 2,000 crore over the next two years to enhance India's ability to predict and respond to extreme weather events and the impacts of climate change.*

- It includes accuracy, modelling, radars, satellites, and accurate agromet forecasts.
- It will help equip stakeholders, including citizens, to better manage extreme weather events and climate change impacts, enhancing community resilience.
- Components of the Mission:
  - Deployment of next-generation radars and satellite systems with advanced sensors
  - Development of enhanced Earth system models
  - A GIS-based automated decision support system for real-time data sharing
- The mission will be implemented by the India Meteorological Department (IMD), Indian Institute of Tropical Meteorology, and the National Centre for Medium-Range Weather Forecasting – three key institutions under the Ministry of Earth Sciences (MoES).
- The mission will be supported by other MoES bodies – Indian National Centre for Ocean Information Services, National Centre for Polar and Ocean Research and National Institute of Ocean Technology.
- It will improve monitoring and early warning systems in agriculture, disaster management, and defence, while optimising energy and water resource management. Also, it will support safer aviation and promote sustainable tourism.



# MVA-BN vaccine

- The World Health Organization (WHO) has prequalified the Danish MVA-BN vaccine, making it the first approved vaccine to combat mpox.
- This prequalification facilitates broader and faster access to the vaccine, particularly for high-risk populations, aiming to reduce transmission and contain outbreaks.
- The MVA-BN vaccine, developed by Bavarian Nordic A/S, shows 76% effectiveness with a single dose and 82% with two doses.
- The vaccine can be stored at 2-8°C for up to eight weeks and is recommended for adults over 18.

## Narrow-Spectrum Antibiotics



- Scientists recently found that FP 100 (Hygromycin A), a first-in-class, small molecule, narrow-spectrum antibiotic, successfully eradicates *Fusobacterium nucleatum* without harming the oral or gut microbiomes.
- Narrow-Spectrum Antibiotics are classified as “narrow-spectrum” or “broad-spectrum” depending on the range of bacterial types they affect.
- Narrow-spectrum antibiotics are active against a selected group of bacterial types.
- They can act on either gram +ve or gram –ve but not both.
- They are used for the specific infection when the causative organism is known.
- They will not kill as many of the normal microorganisms in the body as the broad-spectrum antibiotics.
- Because they target very specific bacteria, they don’t cause an increase in bacterial resistance and avoid the spread of drug-resistant infections.
- Examples include Azithromycin, Clarithromycin, Erythromycin, etc.

## BHASKAR PLATFORM

*The Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry is set to launch a groundbreaking digital platform BHASKAR.*

- The Bharat Startup Knowledge Access Registry (BHASKAR) initiative, under the Startup India program aimed at strengthening India’s startup ecosystem.
- It is a platform designed to centralize, streamline and enhance collaboration among key stakeholders within the entrepreneurial ecosystem, including startups, investors, mentors, service providers and government bodies.

- The primary goal of BHASKAR is to build the world’s largest digital registry for stakeholders within the startup ecosystem.
- BHASKAR will bridge the gap between startups, investors, mentors, and other stakeholders, allowing for seamless interaction across sectors.
- By consolidating resources, the platform will provide startups with immediate access to critical tools and knowledge, enabling faster decision-making and more efficient scaling.
- Every stakeholder will be assigned a unique BHASKAR ID, ensuring personalized interactions and tailored experiences across the platform.
- Through powerful search features, users can easily locate relevant resources, collaborators, and opportunities, ensuring faster decision-making and action.

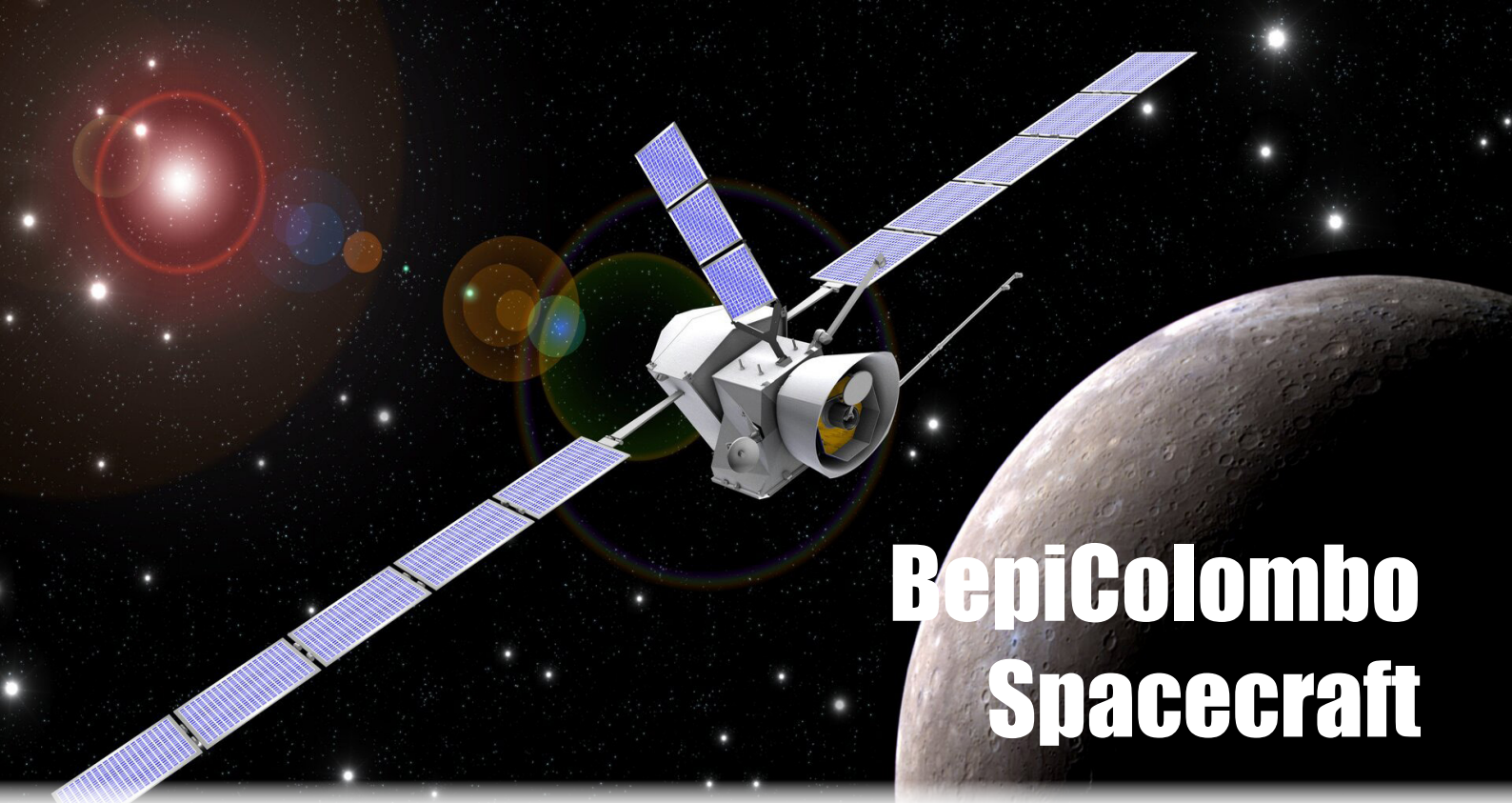


## Launch of Tanager-1

*The National Aeronautics and Space Administration (NASA) launched the Tanager-1 satellite to detect major emitters of carbon dioxide and methane.*

- Tanager-1 will use imaging spectrometer technology to measure wavelengths of light that are reflected by Earth’s surface. Methane and Carbon dioxide absorb different wavelengths of light, leaving spectral “fingerprints” that the imaging spectrometer can identify.
- It will be able to measure point-source emissions, down to the level of individual facilities and equipment, on a global scale.
- Earlier, NASA had launched MethaneSAT which tracks and measures methane emissions.
- According to the United Nations Environment Programme, over a period of 20 years, it is 80 times more potent at warming than carbon dioxide.
- It also contributes to the formation of ground-level ozone, a colourless and highly irritating gas that forms just above the Earth’s surface.





# BepiColombo Spacecraft

*The BepiColombo spacecraft gave scientists their first clear view of Mercury's south pole.*

- BepiColombo spacecraft is a joint European Space Agency (ESA) and Japan Aerospace Exploration Agency (JAXA) mission to Mercury.
- The mission was named after Giuseppe “Bepi” Colombo, an Italian mathematician and engineer who made significant contributions to the understanding of Mercury’s orbit.
- It was launched on October 20, 2018, and is an ambitious and complex mission designed to study Mercury’s surface, composition, magnetic field and its interaction with the solar environment.
- The BepiColombo spacecraft consists of two main components:
- Mercury Planetary Orbiter (MPO) is primarily provided by ESA and is responsible for mapping and studying Mercury’s surface, as well as its composition and topography.
- Mercury Magnetospheric Orbiter (MMO) is provided by JAXA and focuses on studying Mercury’s magnetic field and magnetosphere.
- Objectives is Investigating Mercury’s surface and composition to better understand its geological history and formation processes, Studying Mercury’s magnetic field and magnetosphere to gain insights into its internal structure and how it interacts with the solar wind, Measuring Mercury’s exosphere (a thin atmosphere) and understanding its composition and dynamics.

## India Semiconductor Mission

*The Union Cabinet recently gave the green light to Kaynes Semicon Pvt Ltd to establish a new semiconductor unit in Sanand, Gujarat, which is the fifth semiconductor unit to be approved under the India Semiconductor Mission (ISM).*

- ISM is a specialized and independent Business Division within the Digital India Corporation.
- It aims to build a vibrant semiconductor and display ecosystem to enable India’s emergence as a global hub for electronics manufacturing and design.
- ISM has all the administrative and financial powers and is tasked with the responsibility of catalysing the India Semiconductor ecosystem in manufacturing, packaging, and design.
- ISM has an advisory board consisting of some of the leading global experts in the field of semiconductors.
- ISM has been working as a nodal agency for the schemes approved under the Semicon India Programme.



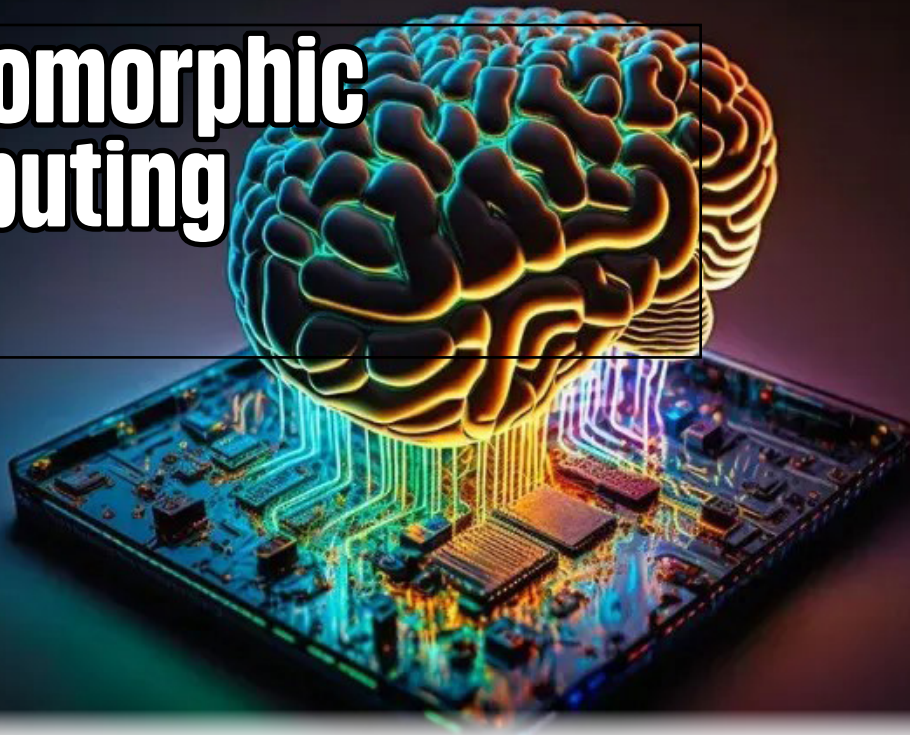
# Soyuz Spacecraft

*A Soyuz spacecraft carrying two Russians and an American docked at the International Space Station (ISS) recently, a little more than three hours after its launch.*



- The Soyuz (saw-yooz) is a Russian spacecraft.
- The Soyuz programme is the longest operational human spacecraft programme in the history of space exploration.
- Russian crew members are called cosmonauts. NASA crew members from the United States are called astronauts. Crew members from Europe, Canada, and Japan are also called astronauts.
- The Soyuz takes cosmonauts and astronauts to and from the ISS.
- The Soyuz spacecraft weighs 7 tonnes; they measure 7.2 m in length and 2.7 m in diameter. A Soyuz has room for three people to ride in it.
- The spacecraft also brings food, water, and other essential supplies to the ISS.
- The Soyuz serves a dual purpose, acting as a transportation vehicle and a safety measure.
- At least one Soyuz remains docked to the space station at all times, ready to serve as an emergency escape pod should the need arise, allowing the crew to quickly evacuate and return to Earth.
- The Soyuz spacecraft consists of three distinct modules, each serving a specific purpose.
- The Orbital Module, comparable in size to a large van, provides living quarters for the crew during their time in orbit and can connect directly to the space station.
- The Descent Module, as its name suggests, is utilized by the crew during the launch phase and the return journey to Earth.
- It is specifically designed to withstand the rigors of re-entry and ensure a safe landing.
- The third module houses the spacecraft's critical life support systems, including batteries, solar panels, and steering engines, all of which are essential for the Soyuz's operation and the crew's well-being.
- The Soyuz capsule is propelled into space by a Soyuz rocket, with the two components separating once the spacecraft reaches orbit.
- While the rocket returns to Earth, the capsule continues its journey, remarkably reaching space in a mere nine minutes.

# Neuromorphic Computing



*The researchers at the Indian Institute of Science (IISc) have developed a neuromorphic or brain-inspired analog computing.*

- This system is capable of storing and processing data in 16,500 states using molecular film.
- Neuromorphic computing is a process designed to mimic the structure and function of the human brain using artificial neurons and synapses.
- It represents a significant shift from traditional binary computing to neuromorphic computing, allowing systems to learn from the environment.
- It involves the use of Artificial Neural Networks (ANN) made up of millions of artificial neurons, similar to those in the human brain.
- The neurons pass signals to each other in layers, converting input into output through electric spikes or signals, based on the architecture of Spiking Neural Networks (SNN).
- This allows the machine to mimic the neuro-biological networks in the human brain and perform tasks efficiently and effectively, such as visual recognition and data interpretation.
- Brain-Inspired Design: Neuromorphic systems replicate the brain's architecture, particularly the neocortex, which is responsible for higher cognitive functions such as sensory perception and motor commands.
- These systems use spiking neurons that communicate through electrical signals, closely resembling biological neuronal behavior.
- This design allows for parallel processing and real-time learning.

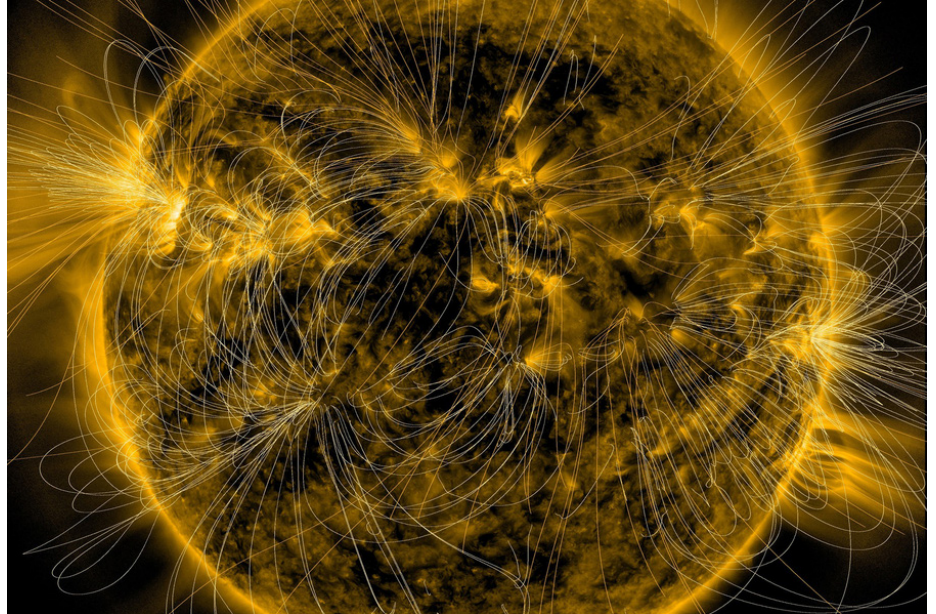
**Integration of Memory and Processing:** Unlike traditional von Neumann architecture, which separates memory from processing, neuromorphic systems integrate these functions, enhancing computational efficiency.



SPACE

# Solar Magnetic Field Research

• Astronomers at the Indian Institute of Astrophysics (IIA) have found a new way to study the Sun's magnetic field by studying the magnetic field at different layers of the solar atmosphere.



- The astronomers have done this using data from IIA's Kodaikanal Tower Tunnel Telescope.
- The study focused on an active sunspot region characterised by complex features, including multiple umbrae (dark central regions) and a penumbra (outer lighter region).
- Observations were conducted using the Hydrogen-alpha line and the Calcium II line.
- These lines help infer the magnetic field's stratification at various heights in the solar atmosphere.
- The findings are significant in advancing our understanding of the Sun's magnetic field, setting the stage for future studies to explore solar magnetic phenomena in greater detail.
- Kodaikanal Tower Tunnel Telescope is a three-mirror based Solar telescope owned and operated by the Indian Institute of Astrophysics.
- The solar atmosphere consists of interconnected layers through magnetic fields. These fields play a crucial role in transferring energy and mass, which helps address the "coronal heating problem" and drives the solar wind.
- The coronal heating problem is a mystery in solar physics that involves understanding why the Sun's corona (outermost layer of the Sun's atmosphere) is much hotter than the layers below it.

## Nebula

*NASA recently captivated space enthusiasts with a breath-taking image of the Red Spider Nebula.*

- A nebula is a giant cloud of dust and gas in space.
- Some nebulae (more than one nebula) come from the gas and dust

thrown out by the explosion of a dying star, such as a Supernova.

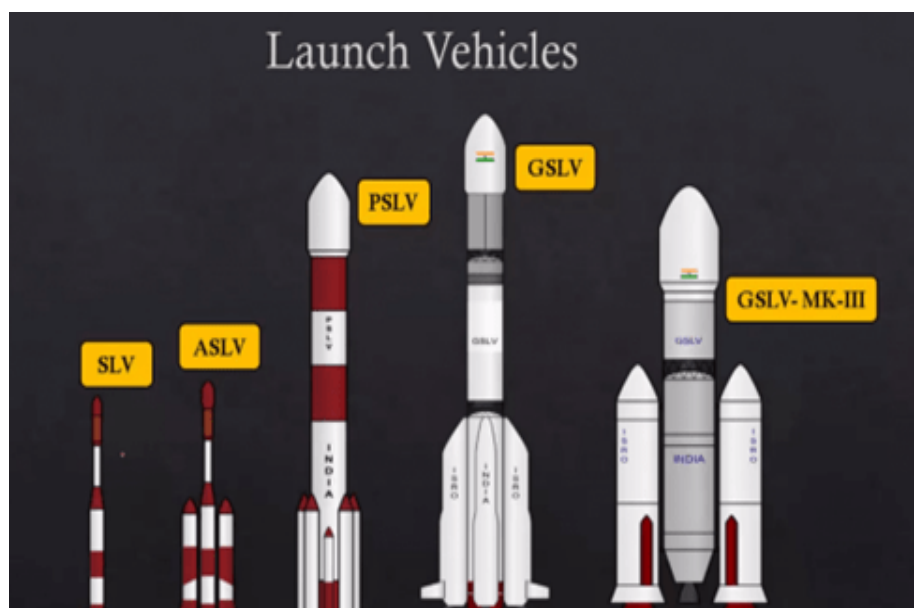
- Other nebulae are regions where new stars are beginning to form. For this reason, some nebulae are called “star nurseries.”
- Nebulae are made of dust and gases—mostly hydrogen and helium.
- The dust and gases in nebula are very spread out, but gravity can slowly begin to pull together clumps of dust and gas.
- As these clumps get bigger and bigger, their gravity gets stronger and stronger.
- Eventually, the clump of dust and gas gets so big that it collapses from its own gravity.
- The collapse causes the material at the center of the cloud to heat up—and this hot core is the beginning of a star.
- Nebulae exist in the space between the stars—also known as interstellar space.
- The closest known nebula to Earth is called the Helix Nebula. It is approximately 700 light-years away from Earth.
- Nebulas come in many shapes and sizes and can be further divided into several subcategories, including planetary nebulas, supernova remnants, dark nebulas, and emission nebulas.
- Red Spider Nebula is a planetary nebula located 3,000 light-years from Earth and can be found in the constellation of Sagittarius.



## Next Generation Launch Vehicle

*The Union Cabinet chaired by the Prime Minister of India has approved the development of Next Generation Launch Vehicle (NGLV).*

- Next Generation Launch Vehicle will have 3 times the present payload capability with 1.5 times the cost compared to LVM3, and will also have reusability resulting in low-cost access to space and modular green propulsion systems.
- The development of the NGLV is taken up which is designed to have a maximum payload capability of 30 tonnes to Low Earth Orbit, which also has a reusable first stage.
- This development project will be implemented with maximal participation from the Indian industry, which is also expected to invest in the manufacturing capacity at the outset itself, thereby allowing a seamless transition to the operational phase subsequent to the development.
- NGLV will be demonstrated with three development flights (D1, D2 & D3) with a target of 96 months (8



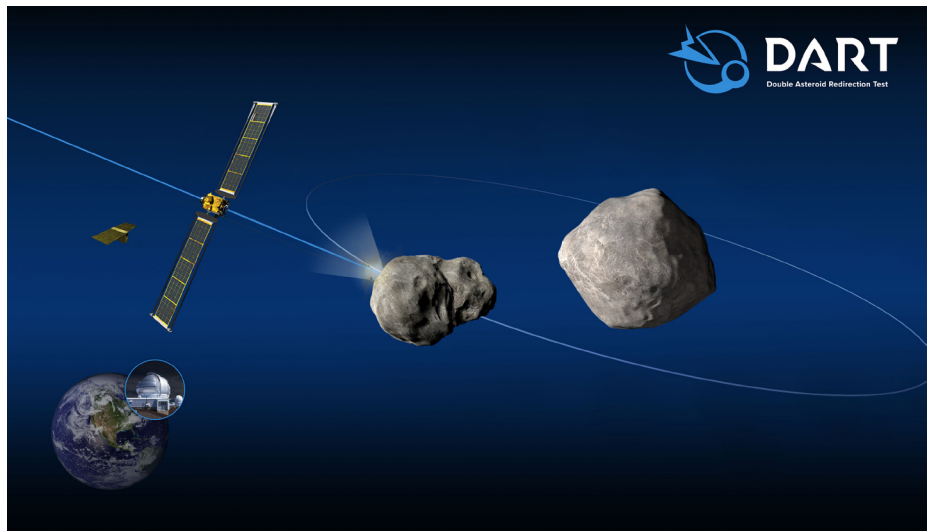
years) for the completion of the development phase.

- The total fund approved is Rs. 8240.00 Crore and includes the development costs, three developmental flights, essential facility establishment, Programme Management and Launch Campaign.
- It will enable national & commercial missions including launch of human spaceflight missions to Bharatiya Antariksh Station.
- Lunar/inter-planetary exploration missions along with communication & earth observation satellite constellations to Low Earth Orbit that will benefit the entire space ecosystem in the country.
- This project will boost the Indian space ecosystem in terms of capability and capacity.

## DART Mission

*NASA's DART mission made history by successfully crashing a spacecraft into the asteroid moonlet Dimorphos.*

- This marked a major step forward in protecting Earth from possible asteroid impacts by testing ways to change the direction of threatening space objects.
- Dimorphids is the First Human-Made Meteor Shower
- As a result of the DART mission's impact, debris from Dimorphos has been scattered into space.
- Scientists believe that more than 2 million pounds of this material could eventually reach Earth and Mars.
- If this happens, it could create a meteor shower, known as the "Dimorphids," in the next 10 to 30 years, leading to periodic meteor displays.



### NASA's DART Mission

- The Double Asteroid Redirection Test (DART) was launched in 2021 as NASA's first attempt to move an asteroid from its path.
- The idea behind the mission was to see if a spacecraft could deflect an asteroid by crashing into it—this technique is called "kinetic impact."
- DART's goal was to show that this method could be used to protect Earth from potential asteroid threats in the future.
- The DART mission was a success.
- The spacecraft hit Dimorphos and managed to shorten its orbit around the larger asteroid Didymos by 33 minutes.
- This was a major victory, as it proved that using a spacecraft to change an asteroid's path is possible.
- It is the first time humans have intentionally changed the movement of a celestial body.

## Venus Orbiter Mission

*Recently, the Union Cabinet chaired by the Prime Minister of India has approved the development of Venus Orbiter Mission (VOM).*

- Venus Orbiter Mission is envisaged to orbit a scientific spacecraft in the orbit of planet Venus.
- It is for better understanding of the Venusian surface and subsurface, atmospheric processes and influence of Sun on Venusian atmosphere.
- The study of the underlying causes of transformation of Venus, which is whispered to be once habitable and

quite similar to Earth would be an invaluable aid in understanding the evolution of the sister planets, both Venus and Earth.

- The Indian Venus mission is expected to answer some of the outstanding scientific questions resulting in various scientific outcomes.
- India Space Research Organisation (ISRO) will be responsible for the development of spacecraft and its launch.
- The mission is expected to be accomplished on the opportunity available during March 2028. The realization of the spacecraft and launch vehicle is through various industries.
- The total fund approved for the VOM is Rs.1236 Cr out of which Rs 824.00 Crore will be spent on the spacecraft.
- The cost includes development and realization of the spacecraft including its specific payloads and technology elements, global ground station support cost for navigation and network as well as the cost of launch vehicle.
- Venus, the closest planet to Earth and believed to have formed in conditions similar to Earth, offers a unique opportunity to understand how planetary environments can evolve very differently.



# ONAM CELEBRATION



# SAMUDRA PRATAP

*The first indigenously developed Pollution Control Vessel of the Indian Coast Guard (ICG), 'Samudra Pratap' was launched in Goa.*



- Samudra Pratap vessel will help to check the oil spillage on the country's sea coast.
- The ship was launched and named as 'Samudra Pratap'.
- It is built by Goa Shipyard Limited (GSL) for the Indian Coast Guard.
- It is the first time that these types of vessels are being designed and built indigenously in India.
- It boasts a length of 114.5 meters, a breadth of 16.5 meters and a displacement of 4,170 tons. The vessel will be manned by 14 officers and 115 sailors and is equipped with state-of-the-art technology for pollution control.
- Notably, it features side-sweeping arms to contain oil spills while in motion, an advanced radar system for oil spill detection and facilities to recover and store various types of oil.

## Yudh Abhyas

*India-U.S. bilateral Army exercise Yudh Abhyas is set to commence at the Mahajan field firing ranges in Rajasthan.*

- Yudh Abhyas is a joint military exercise conducted annually between India and USA.
- It is designed to promote cooperation between the two militaries while sharing training, cultural exchanges and building joint operating skills.
- The previous edition of the exercise was conducted at Fort Wainwright, Alaska, USA.

### **Yudh Abhyas 2024**

- It marks the 20th edition of the exercise
- Location: Mahajan Field Firing Range in Rajasthan
- It is designed to enhance interoperability and strengthen the operational capabilities of both forces.

- It will feature a range of advanced military tactics and coordinated manoeuvres aimed at improving the readiness of both armies in high-stakes scenarios.
- It is going to feature one of the largest U.S. contingents at the exercise with around 600 personnel and the U.S. Army is also set to deploy Stryker infantry vehicles and the M142 HIMARS (High Mobility Artillery Rocket System).
- These advanced rocket systems, which have gained prominence for their use in Ukraine, can deliver precision strikes over extended ranges.



## Exercise Varuna

*A P8I aircraft of the Indian Navy has reached France to participate in 'Exercise Varuna' with the French Navy.*

- Exercise Varuna is the bilateral Naval Exercise between India and France.
- This bilateral exercise between the two navies was initiated in 1993.
- It was named 'VARUNA' in 2001 and has become a hallmark of India-France's strategic bilateral relationship.
- The 2024 edition of Indo-French bilateral naval 'Exercise Varuna' is scheduled in the Mediterranean Sea.
- It includes advanced tactical exercises underscoring the deepening synergy and interoperability between the two navies.
- The Indian Navy's P-8I aircraft, renowned for its maritime surveillance and anti-submarine warfare capabilities, will play a pivotal role in these exercises and it joins the INS Tabar.
- The P-8I's participation in Exercise Varuna reflects the growing sophistication and complexity of the joint operations between the Indian and French navies.
- P-8I aircraft is a long-range, multi-mission maritime patrol aircraft being manufactured by Boeing for the Indian Navy.



# INS Malpe And INS Mulki

*Two anti-submarine warfare shallow watercraft vessels (ASWCWC) of the Indian Navy, INS Malpe and INS Mulki, were recently launched at Cochin Shipyard.*

- INS Malpe and INS Mulki are two indigenously designed and constructed Anti-Submarine Warfare Shallow Watercrafts (ASWCWC) built for the Indian Navy.
- This is the fourth and fifth ASWCWC being built for the Navy.
- They are constructed by the Cochin Shipyard Limited (CSL).
- These vessels, known as the Mahe Class, will replace the current Abhay Class ASW Corvettes in the Indian Navy.
- The vessels are capable of conducting anti-submarine operations in coastal waters, low-intensity maritime and mine-laying operations, besides sub-surface surveillance and search and rescue operations.
- The vessels are 78.0 m long and 11.36 m wide, with a draught of about 2.7 m.
- The displacement is about 900 tonnes, with a maximum speed of 25 knots and endurance of 1,800 nautical miles.
- The ships are designed to fit indigenously developed, state-of-the-art SONARS for underwater surveillance.
- They are equipped with light-weight torpedoes, anti-submarine warfare rockets, a close-in weapon system and remote-controlled guns.

## Project NAMAN

*The Indian Army launched Project NAMAN to support Defence Pensioners, Veterans, and their families, centred around the SPARSH digital pension system.*

- The project aims to streamline pension processes and provide essential services through Common Service Centres (CSCs) across India.
- These centres, supported by HDFC Bank and managed by veterans or their families, offer SPARSH-enabled pension services, e-Governance, and banking solutions, reflecting the Army's commitment to veteran welfare and community empowerment.







- Female *S. perlmanni* wasps use a specialised organ called an ovipositor to inject eggs directly into the abdomen of adult fruit flies.
- Over the next 18 days, the eggs develop into wasp larvae, slowly growing inside the host until they eventually kill the fly by emerging out of its body.
- The research team found evidence of *S. perlmanni* across the eastern United States, including Mississippi, Alabama, and North Carolina



## Orcas

*A group of Orcas had attacked a sailboat off the coast of Spain.*

- Some scientists believe orcas may be targeting boats as a form of play, where young orcas learn and repeat new behaviours.
- Some scientists theorise that a traumatic event, like getting tangled in fishing lines, might have triggered aggressive behaviour in orcas.
- Some scientists suspect that a female orca (White Gladis), went through a similar traumatising experience, which altered her behaviour
- Orcas Or killer whales, are the largest member of the dolphin family.
- They use echolocation to communicate and hunt.
- Echolocation is a technique used by bats, dolphins and other animals to determine the location of objects using reflected sound.
- Each Orcas group (pod) has distinctive noises that its members will recognise even at a distance.
- They are apex predators with diverse diets, consuming fish, penguins, seals, sea lions, and even whales, using four-inch-long teeth.



## Arnoux's Beaked Whale

*A team of researchers has stumbled upon rare Arnoux's Beaked Whales off the coast of Antarctica recently.*

- Arnoux's Beaked Whale are a rare cetacean species.
- A cetacean is a member of the family of large aquatic mammals such as whales, dolphins, and porpoises.
- Scientific Name: *Berardius arnuxii*
- Arnoux's Beaked Whales are a gregarious species generally found in groups of 6-10, but larger groups of 80 individuals have been recorded.



# Mithun : Spotted

*Bovine animal Mithun has been spotted in Assam for the first time, the Chief Minister said recently.*

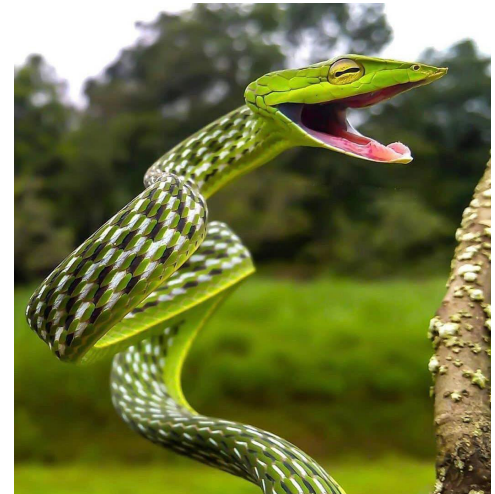
- Mithun or gayal (*Bos frontalis*) is a heavily built, semi-domesticated bovine species.
- Mithun is believed to have originated more than 8000 years ago and is considered to be a descendant of wild Indian gaur or bison.
- It is known as the ‘cattle of the mountain’.
- The highest concentration of mithuns in the world is spread over the North Eastern (NE) region of India, with Arunachal Pradesh having the highest population.
- It is also found in parts of Southeast Asia, viz., Bangladesh, Myanmar, and Bhutan.
- The geographic zone is covered with tropical evergreen rainforests.
- It is the state animal of Arunachal Pradesh and Nagaland.
- The ‘Soulung’ festival is observed annually by the Adi tribes of Arunachal Pradesh to commemorate the birth and arrival of Mithun on this earth.



## Ahaetulla Longirostris

*A new snake species with an unusually long snout, Ahaetulla Longirostris, has been discovered in India.*

- Ahaetulla Longirostris is a new snake species with a remarkably long snout.
- The species, named the long-snouted vine snake (*Ahaetulla Longirostris*), was identified after two specimens were found in vastly different regions, Bihar in the eastern part of the country and Meghalaya in the northeastern region.
- It is notable for its slender, elongated body and striking colouration.
- These snakes can grow up to 4 feet in length and are typically bright green or orange-brown, with an orange belly.
- Their unique physical features, especially the long snout, distinguish them from other vine snakes.
- The head of this snake is triangular, and the snout is extended from the head and measures about 18% of the length of the head.
- The species has been observed inhabiting not only forests but also human-dominated areas, such as cities and urban landscapes, showcasing their adaptability to various environments.



# Onitis bordati

*Researchers have identified a previously unknown dung beetle species, Onitis bordati, in the Nongkhylllem Wildlife Sanctuary in Meghalaya.*

- Onitis bordati is a dung beetle species belonging to the genus Onitis.
- Males of most species have distinctive forelegs that are long, slender and curved, often with teeth or spines.
- The species belonging to the genus Onitis are tunnellers.
- Males of most species have distinctive forelegs that are long, slender and curved, often with teeth or spines.
- Dung beetle species were previously only found in Vietnam and Thailand.
- They are known for their ecological functions, such as seed dispersal, nutrient cycling, and pest control, and plant growth.
- Habitat destruction and climate change pose significant threats.



# Gorillas

*Scientists believe that gorillas could offer insights into future drug discoveries through their self-medicating behaviour, according to a new study.*

- Gorillas are the largest of the great apes (there are 5 species of great apes, including, gorilla, orangutan, chimpanzee, bonobo and human).
- Gorillas share 98.3% of their genetic code with humans, making them our closest cousins after chimpanzees and bonobos.
- Gorillas and humans shared a common ancestor about 10 million years ago.
- There are two gorilla species in the world: the eastern gorilla and the western gorilla. The mountain gorilla is a subspecies of the eastern gorilla.
- Gorillas live only in tropical forests of equatorial Africa.
- They are large powerful animals with strong prominent chests and shoulders.
- Males are about twice as heavy as females and may attain a height of about 1.7 metres and weight (in the wild) of 135–220 kg.
- They have large, human-like hands with muscular arms that are longer than their legs.
- They have dark skin and black to brown-grey hair.
- IUCN: Both the eastern gorilla and the western gorilla are classified as ‘Critically Endangered’ under the IUCN Red List.



# PHRYNARACHNE DECIPIENS

Zoologists in Assam have added a species of spider *Phrynarachne decipiens* whose web mimics a bird's excrement to India's list of arachnids.

- *Phrynarachne decipiens* is better known as the bird dung or bird-dropping crab spider.
- It was known to be distributed in Malaysia and Indonesia's Java and Sumatra.
- It has been recorded for the first time in the country from Assam's Sonapur in the Kamrup (Metropolitan) district and the Chirang Reserve Forest in the Kokrajhar district.
- The spider is usually seen lying motionless 1-2 ft above the ground on the upper side of broad leaves.
- The chalky white colour of the spider and whitish deposition (its web) on the leaves, looking like bird excreta, make it very difficult to be sighted
- It has the stout spermathecae (a sac-like organ in the female reproductive tract that stores sperm received during copulation) with posterior heads almost touching each other.



## Amur Falcon

Manipur's Tamenglong district gears up to welcome its winged guests, Amur falcon and the district administration imposed a ban on hunting, catching, killing and selling of the bird.

- Amur Falcon is a small raptor of the falcon family.
- These are locally known as Akhuipuina, the bird arrives mainly in Manipur and Nagaland.
- They breed in south-eastern Siberia and Northern China and migrate long distances in large flocks to winter in Southern and East Africa.
- The one-way journey via India is about 20,000 km long and the birds do this twice a year.
- It is protected under the Wildlife Protection Act 1972 and included under its Schedule IV.
- Hunting of the birds or possessing its meat is punishable with imprisonment up to three years or a fine upto 25,000 or with bonds.
- In 2018, the forest department started a conservation programme by radio-tagging the birds to study their migratory route.
- Threats: Illegal trapping and killing during migration, habitat loss from agricultural practices and land reclamation.
- IUCN: Least Concern



# Ladakh

*The Ministry of Home Affairs Minister granted “in-principle approval” for the formation of five new districts in Ladakh, increasing the Union Territory’s total number of districts to seven.*

- The five new districts are Zaskar, Drass, Sham, Nubra, and Changthang.
- This move, aimed at improving governance and development in the region, has been widely discussed and welcomed by various stakeholders.
- Ladakh is one of India’s largest and least populated Union Territories.
- The current administrative structure, with just two districts Leh and Kargil has struggled to address the needs of its vast and difficult terrain.
- Due to its large area and inaccessibility, the existing administration faced challenges in reaching grassroots levels effectively.
- The new districts are expected to alleviate these challenges by providing more localised administrative units.
- Ladakh’s geopolitical significance and strategic location have made it a focus of development efforts, aiming to enhance both civilian and military infrastructure.
- After Article 370’s removal in 2019, Ladakh became a Union Territory under the Union Home Ministry’s direct administration.
- Ladakh is part of the Prime Minister’s Development Package (PMDP), which includes significant funding and infrastructure projects aimed at the region’s growth.

## Line of Actual Control

The Union Ministry of External Affairs recently said that about 75% of the “disengagement problems” with China on the military standoff along the Line of Actual Control in eastern Ladakh have been “sorted out”

• Line of Actual Control (LAC) is the demarcation that separates Indian-controlled territory from Chinese-controlled territory.

• Although not recognised as an official border, it serves as a de facto border between India and China.

• India considers the LAC to be 3,488 km long, while the Chinese consider it to be only around 2,000 km.

It is divided into three sectors:

- the eastern sector which spans Arunachal Pradesh and Sikkim
  - the middle sector, in Uttarakhand and Himachal Pradesh, and
  - the western sector in Ladakh.
- It runs along Tibet and Xinjiang on the Chinese side.
  - The LAC has always remained a major cause of tension between India and China. There are areas along the border where India and China have differing perceptions of the LAC.
  - India’s claim line is the line seen in the official boundary marked on the maps as released by the Survey of India, including both Aksai Chin and Gilgit-Baltistan. This means LAC is not the claim line for India.
  - In China’s case, LAC is the claim line except in the eastern sector, where it claims the entire Arunachal Pradesh as South Tibet.



# Nongkhylllem Wildlife Sanctuary

- The Sanctuary falls in the Eastern Himalayan Global bio-diversity hot spot and located in the state of Meghalaya.
- The area consists of undulating plains to low hills, which are part of the Archaean Meghalaya Plateau.
- The area has become broken and rugged, especially towards the west and north, because of continuous erosion by the rivers Umtrew, Umran, Umling, Umtasor and other smaller streams.
- The Umtrew is the main river of the area and the rest named above are its tributaries. The Umtrew also marks the western boundary of the Reserve Forest and the Sanctuary.

## Gopalpur Port

*The Odisha government recently approved a proposal to transfer 95 percent of the equity shares of Gopalpur Port to Adani Ports and Special Economic Zone Limited (APSEZ).*

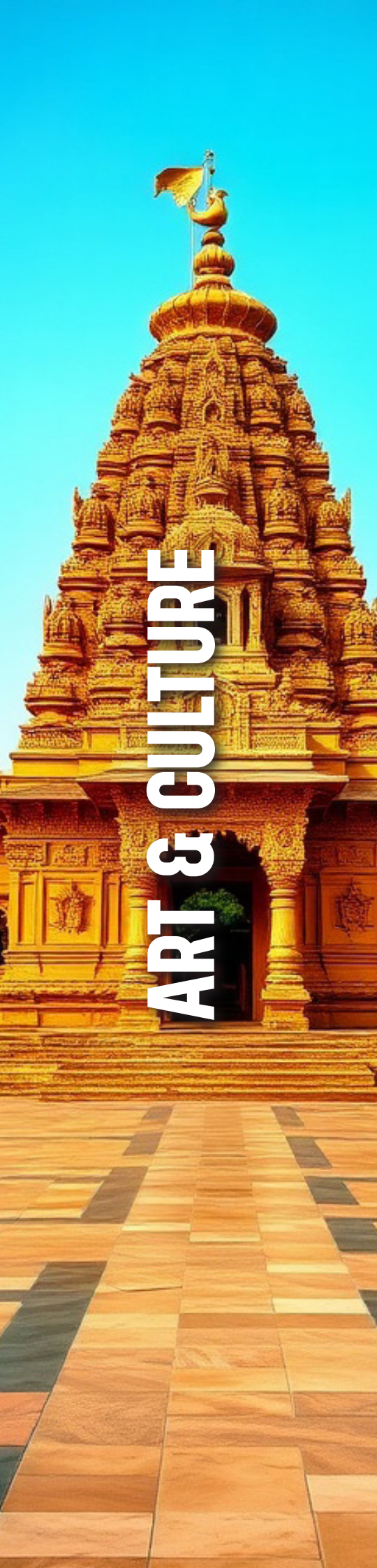
- Gopalpur Port is a deep-draft, multi-cargo port located on the east coast of India in the mineral-rich state of Odisha.
- It lies between Paradip Port in the north and Visakhapatnam Port in the south, at almost equal distance from each.
- The hinterland of the port is the states of Odisha, Jharkhand, and Chhattisgarh, thus providing access to a mix of minerals, steel, aluminium, cement and power plants.
- The coal fields of IB and Talcher, which account for approximately 25% of India's coal reserves, form part of the hinterland of the port.
- The broad-gauge Howrah-Visakhapatnam-Chennai east coast trunk route, which runs parallel to the east coastline, is just 6 km away from the Gopalpur port site.
- Close proximity to NH5 (Kolkata-Chennai) provides excellent road connectivity to and from Gopalpur.

## Port Blair

*The Union Home Minister of India said that Port Blair will be re-named as 'Sri Vijaya Puram'.*

- Port Blair is the capital city and the entry point of the Andaman and Nicobar Islands.
- It was named after Archibald Blair, a naval surveyor and lieutenant in the Bombay Marine. Blair was the first officer to carry out a thorough survey of the Andaman Islands.
- It is located on the east coast of the South Andaman Island.
- It is also the place that hosted the first unfurling of our Tiranga by Netaji Subhash Chandra Bose.
- Some historical records suggest that the Andaman Islands were used as a strategic naval base by the 11th-century Chola emperor, Rajendra I to attack Srivijaya, which is in present-day Indonesia.
- As per an inscription found at Thanjavur dated to 1050 CE, the Cholas referred to the island as Ma-Nakka-varam land (great open/ naked land), which possibly led to the modern name of Nicobar under the British.





# Thanjavur Veena: GI Tag

*Thanjavur Veena is the first musical instrument in the country to get the Geographical Indication (GI) tag.*



- The Thanjavur veena is an Indian instrument and has an interesting construction.
- They are of two types viz. the “Ekantha Veena” and “Sada Veena”.
- “Ekantha Veena” is carved from a single block of wood, while “Sada Veena” has joints and is carved in three sections namely resonator, neck and head.
- The veena has 24 fixed frets (Mettu) so that all ragas can be played.
- It is made of fresh bark from a Jack Fruit Tree. The tree bark is forced to undergo several rounds of testing before being finalized for usage.
- The work involves making the resonator ( kudam), the neck ( dandi) and a tuning box — the three integral parts of a veena.
- It takes up to 15-20 days, to get the finished product. The wood gets cut, intricately carved, shaped, and assembled.

## Statue of Chhatrapati Shivaji Maharaj: Collapsed

*A 35-foot statue of Chhatrapati Shivaji Maharaj, unveiled at Rajkot Fort in Malvan in Sindhudurg district, collapsed in less than a year.*

- It is in contrast with the Sindhudurg Fort, built by Shivaji Maharaj 357 years ago, remains resilient and has played a significant role in military activities such as the Surat raids. A major portion of Sindhudurg Fort was financed by Surat raids.
- The fort was built on the island of Kurte in the Arabian Sea after a thorough examination by Shivaji Maharaj and an expert (Hiroji Indulkar).
- The construction of the fort was estimated at a cost of one crore hons. Hon was a gold coin used as currency during the reign of Shivaji Maharaj in the 17th century.
- Shivaji Maharaj’s vision was to establish maritime control and enhance economic stability through a powerful navy.
- The fort was strategically located to dominate maritime access and

defend against foreign powers like the Siddis, Portuguese, and other colonial forces.

- The fort was built with a serpentine wall covering four kilometres, standing ten metres high with 45 stairways, and included facilities for guards and cannons.
- It featured a south-facing statue of Hanuman at the entrance and was complemented by smaller forts like Padmagad, Sarjekot, and Rajkot for additional security.
- Sindhudurg Fort remains an impressive symbol of Shivaji Maharaj's military and strategic prowess.



## World Heritage Site

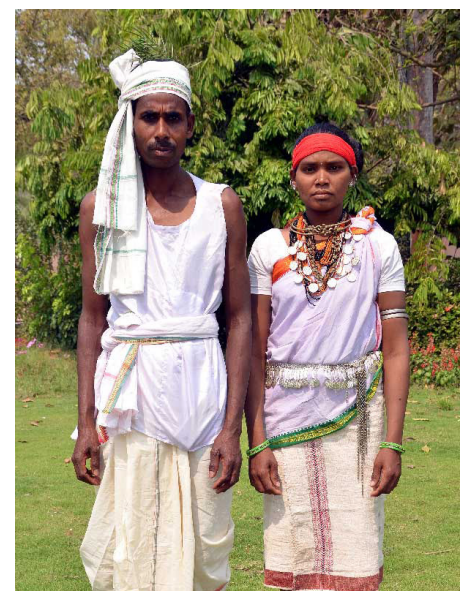
*The Supreme Court recently dismissed an application seeking to declare the city of Agra as a “World Heritage Site.”*

- World Heritage Sites are cultural and/or natural sites with legal protection inscribed on the United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage List.
- These sites are designated by UNESCO for having cultural, historical, scientific, or other forms of significance.
- The sites are designated as having “outstanding universal value” under the Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention).
- This document was adopted by UNESCO in 1972 and formally took effect in 1975 after having been ratified by 20 countries.
- It provides a framework for international cooperation in preserving and protecting cultural treasures and natural areas throughout the world.
- There are three types of sites: cultural, natural and mixed.
- Cultural heritage sites include hundreds of historic buildings and town sites, important archaeological sites and works of monumental sculpture or painting.
- Natural heritage sites are restricted to those natural areas that furnish outstanding examples of Earth.

## Saora Tribe

Saora tribals of Gajapati district getting habitat rights over their ancestral lands recently, Odisha has become the only state to provide such rights to the highest number of particularly vulnerable tribal groups (PVTGs).

- Saora is one of the ancient tribes of Odisha, which is also mentioned in the epics Ramayana and Mahabharata.
- They are called by various terms such as Savaras, Sabaras, Saura, Sora, etc.
- Though Odisha is the mainland for the tribe, a small number of people are also found in the states of Andhra Pradesh, Jharkhand, Madhya Pradesh and Assam.
- They have their own native language called Sora, which is a Munda language, and they are one of the very few tribes of India that have a script for the language, Sorang Sompeng.





- The Saoras show their racial affinity to the Proto Australoid physical characters, which are dominant among the aborigines of Central and Southern India.
- Saoras follow an ingrained and intricate religion, having faith in and worshipping a number of gods and spirits, who they believe are the supreme controllers of their regular lives.
- They have unique art practices, religious customs, as well as a dying tattooing tradition called ‘Tantangbo’.
- The Saoras can be divided broadly into two economic classes:
  - The Saoras of the plains (Sudha Saora) depending on their wet cultivation or wage earning and selling firewood.
  - The Hill Saoras (Lanja Saora) practice shifting and terraced cultivation on the hill slopes.

## Naga King Chilli Festival

*Seiyhama village in Nagaland celebrated the third edition of the Naga king chilli festival.*

- Naga King Chilli belongs to genus Capsicum of family Solanaceae.
- It is also known as raja mircha, Bhoot Jolokia and Ghost pepper.
- It is a spice renowned globally for its extreme heat, which exceeds 1 million Scoville heat units (SHU).
- It is ranked among the hottest chillies in the world, the king chilli holds significant cultural and economic value for the Naga people.
- It has received the prestigious Geographical Indication (GI) tag in 2008.
- The cultivation of king chilli in Seiyhama is an ancient practice. Farmers begin searching for suitable plots in December or January, with large bamboo groves being the preferred location.
- The peak harvest of king chilli occurs in August and September, with the final harvest in November and December.
- The king chilli has long been used to preserve food in Nagaland’s hot, humid climate, extending the shelf life of food and reducing waste.



# Zyklon B

*On 3rd September 1941, Nazis first used Zyklon B to kill Jews at the Auschwitz concentration camp in Poland.*

- Auschwitz, a Nazi concentration camp, saw the systematic murder of nearly one million Jews through starvation, forced labor, and gas chambers.
- Zyklon B, a toxic gas, was used in gas chambers at Auschwitz for mass executions.
- Zyklon B is the trade name for hydrogen cyanide (HCN), developed in Germany in the early 1920s as a pesticide and rodenticide.
- It came in the form of blue-colored pellets that released a deadly gas when exposed to air.
- Inhalation of Zyklon B caused internal asphyxiation by blocking oxygen exchange in red blood cells and impeding cellular respiration.
- Zyklon B became infamous during World War II but had previously been used in World War I by France (1916), and later by Italy and the U.S. (1918).

## International Literacy Day 2024

*The Vice-President of India emphasized the transformative power of literacy at the International Literacy Day (ILD) 2024 celebrations held in New Delhi, urging a nationwide commitment to enhance education and celebrate linguistic diversity.*

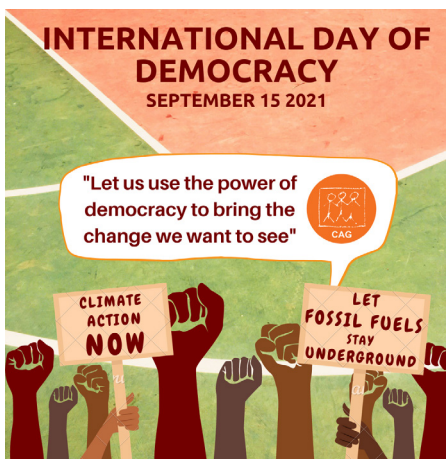
- During the event, the ULLAS (Understanding Lifelong Learning for All in Society) DTH Channel was introduced to reach learners in remote areas, bridging literacy gaps.
- The roots of ILD trace back to the 1965 World Conference of Ministers of Education on the Eradication of Illiteracy in Tehran, Iran, which sparked the idea of a day dedicated to promoting literacy globally.
- UNESCO officially declared 8th September as International Literacy Day during its 14th General Conference in 1967
- ILD 2024 Theme: **“Promoting multilingual education: Literacy for mutual understanding and peace.”**



## International Day of Democracy

Karnataka recently marked the 'International Day of Democracy' by forming a 'historic' 2,500-km-long human chain as a symbol of equality, unity, fraternity, and participative governance.

- International Day of Democracy is an annual celebration observed on September 15.
- The United Nations General Assembly (UNGA) established this day in 2007 to emphasise the global significance of democracy.
- It serves as a reminder that democracy is not merely a fixed condition, but an ongoing pursuit.
- It calls for active engagement from international organizations, nation-states, civil society, and people to pursue the democratic idea.
- The International Day of Democracy was accredited by the UNGA on November 8, 2007, by passing a resolution entitled "Support by United Nations system of efforts of governments to promote and consolidate new or restored democracies."
- The first-ever International Day of Democracy was held in 2008.



## Semicon India 2024

The Prime Minister of India inaugurated the Semicon India industry conference and highlighted India's growing partnerships with countries like the US, Japan and Singapore.

- The US and India collaborated under the International Technology Security and Innovation (ITSI) Fund to promote the development of a secure global semiconductor supply chain and telecommunications networks.
- Semicon India 2024 was co-located with electronica and productronica India, creating the largest single event for electronics manufacturing in South Asia.
- ITSI Fund :The US is collaborating with the Government of India to expand and diversify the global semiconductor ecosystem through the International Technology Security and Innovation Fund (ITSI).
- The CHIPS Act created the ITSI Fund to secure and develop the global semiconductor supply chain and telecommunications networks.

## 3rd National Lok Adalat

The National Legal Services Authority (NALSA) organised the 3rd National Lok Adalat of the year 2024 in the Taluks, Districts and High Courts of 27 States/UTs.

- It was organised under the stewardship of Justice Sanjiv Khanna, Judge of the Supreme Court of India and Executive Chairman, NALSA.
- Lok Adalat, or People's Court, is a forum designed for settling disputes either pending in court or at the pre-litigation stage through compromise or amicable settlement.

### Highlights of the 3rd National Lok Adalat 2024

- Over 1.14 crore cases were resolved during the 3rd National Lok Adalat 2024. It is a big step towards reducing the burgeoning pendency in courts.
- Of the 1,14,56,529 cases settled in the Lok Adalat, 94,60,864 were pre-litigation cases and 19,95,665 were cases pending in various courts.
- The cases include criminal compoundable offences, traffic challans, revenue cases, bank recovery cases, motor accident claims, cheque dishonour cases, labour disputes, matrimonial disputes (excluding divorce cases), land acquisition cases, intellectual property rights, and other civil cases.
- The event saw overwhelming participation, reflecting strong public trust in Lok Adalats. It aligns with the objectives set out in the Legal Services Authorities Act, 1987, and the National Legal Services Authority (Lok Adalats) Regulations, 2009.

# Gram Nyayalayas

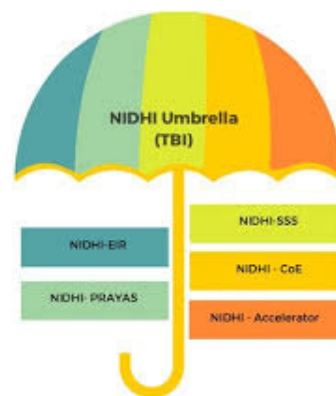
*The Supreme Court recently said the establishment of Gram Nyayalayas across the country would help improve access to justice.*

- Gram Nyayalayas, or village courts, are established under the Gram Nyayalayas Act, 2008, for speedy and easy access to the justice system in the rural areas of India.
- The Act extends to the whole of India, except to the States of Nagaland, Arunachal Pradesh, and Sikkim and the tribal areas specified in the Sixth Schedule to the Constitution of India.
- Gram Nyayalayas is aimed at providing inexpensive justice to people in rural areas at their doorsteps.
- The State governments have been vested with the authority of setting up one or more nyayalayas, after proper consultation with the respective High Court, in every Panchayat at the intermediate level or group of adjacent Panchayats at the intermediate level of a district.
- However, the Act does not make setting up of Gram Nyayalayas mandatory.
- Section 4 of the Act provides for the headquarters of the gram nyayalaya to be situated in the respective Panchayat or some other place notified by the state government.

# NIDHI Programme

*The Union Minister of Science and Technology virtually inaugurated 8 new NIDHI i-TBIs across India along with a new DST-NIDHI Website at IIT Delhi celebrating 8 years of the Department of Science and Technology's initiative (DST-NIDHI).*

- The National Initiative for Developing and Harnessing Innovations (NIDHI) program was launched in 2016.
- It is an umbrella programme conceived and developed by the Innovation & Entrepreneurship division, Department of Science & Technology.
- Aim is to nurture start-ups through scouting, supporting and scaling innovations.
- It is funded by the National Science & Technology Entrepreneurship Development Board (NSTEDB).
- The NIDHI- PRAYAS(Promoting and Accelerating Young and Aspiring Innovators and Startups) program at Proof-of-Concept level provides mentoring and financial support to innovator for converting their ideas into prototypes.
- The NIDHI Entrepreneurs-In-Residence(EIR) Program provides fellowships to the students opting for entrepreneurship.
- The NIDHI Seed Support Program provisions availability of early-stage seed support funding to startups and the NIDHI Accelerator program speeds up the investment readiness of the startups.
- The NIDHI program has been helpful in creating state-of-the-art infrastructure for incubating startups in technology sectors through Technology Business Incubators (TBIs) and Centres of Excellence (CoE).



# IGEIC Launched

*The Ministry of Electronics and IT (MeitY) launched the India Graphene Engineering and Innovation Centre (IGEIC) under the Graphene Aurora Program (GAP), which was initiated in 2023 to foster the graphene technology ecosystem.*

- Located in Trivandrum, Kerala, IGEIC is a non-profit that aims to bridge the gap between R&D and commercialization, providing support to startups and industry.
- This follows the earlier launch of India's first graphene centre, the India Innovation Centre for Graphene (IICG) in Kerala.



# SAMRIDH Scheme

The Union Ministry of Electronics & IT secretary launched the 2nd Cohort of Startup Accelerators of MeitY for Product Innovation, Development and Growth (SAMRIDH) scheme.

- SAMRIDH is the Union Ministry of Electronics & IT (MeitY) 's flagship programme for startup acceleration under the National Policy on Software Products—2019.
- It was launched in August 2021 and supports 300 software product startups with an outlay of ₹99 crore over a period of 4 years.
- It aims to support existing and upcoming Accelerators to select and accelerate potential IT-based startups to scale.
- Among others, the program focuses on accelerating the startups by providing customer connect, investors connect and connect to international markets

## Eligibility of Accelerator

- Should be a registered Section-8/Society, [Not-for-Profit Company (eligible to hold equity)] having operations in India.
- The Accelerator and the team are recommended to have more than 3 years of startup experience and should have supported more than 50 start-ups of which at least 10 start-ups should have received investment from external Investors
- The Accelerator should have experience in running startup program cohorts with activities listed as desirable under the SAMRIDH program.
- It is being implemented through potential and established accelerators across India which provide services like making products market fit, business plan, investor connect and international expansion to startups plus matching funding up to ₹40 lakh by MeitY.

## SAMRIDH SCHEME FOR



## FRAME METHODOLOGY

- According to estimates based on data from a new methodology termed as Food Recovery to Avoid Methane Emissions (FRAME) each food bank reduces the same volume of Greenhouse Gas (GHG) emissions as removing 900 gasoline-powered cars from the road for a year.
- Food Recovery to Avoid Methane Emissions (FRAME) Methodology quantifies the avoided emissions and co-benefits from redirecting food loss and waste to direct human consumption, through food recovery and redistribution operations.
- It is developed by the Global Food Banking Network (GFN) in partnership with the Global Methane Hub and the Carbon Trust.
- The FRAME initially began as a pilot project in Mexico and Ecuador, where six community-led food banks were analysed.
- The new FRAME tool will allow food banks, food recovery organisations, private sector companies, scientific experts and others working in the food loss and waste sector to be able to accurately measure and manage emissions from food recovery and redistribution.



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

Orthodox Christian Student Centre, Opp. AKG Centre, Palayam, Thiruvananthapuram 695 001

9567 744 544, 9946 944 544

[iashubcivilserviceacademy.com](http://iashubcivilserviceacademy.com) [mail@mgocsmcsa.com](mailto:mail@mgocsmcsa.com)

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