



KERALA STATE CIVIL SERVICE ACADEMY



Established under Centre for Continuing Education Kerala (CCEK)

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UNEP ADAPTATION GAP REPORT 2025

The United Nations Environment Programme's Adaptation Gap Report 2025, released as Jamaica reels from the devastation of Hurricane Melissa, warns that developing nations face soaring climate adaptation costs even as public funding declines.



The assessment frames adaptation as a “lifeline”, urging faster, grant-based finance and stronger mitigation to curb escalating risks.

Widening adaptation finance gap

International public finance for adaptation fell to US\$26 billion in 2023, down from US\$28 billion in 2022. This slide deepens the funding gap to roughly US\$284–339 billion a year.

Current flows cover only a small fraction of needs, even as extreme rainfall, flash floods, landslides, heatwaves, and intensifying tropical cyclones become more frequent and severe for vulnerable countries.

Projected costs through 2035

Developing countries will require US\$310–365 billion annually by 2035 to adapt. The lower figure stems from modelled costs; the upper figure reflects extrapolations from Nationally Determined Contributions and National Adaptation Plans.

Estimates are in 2023 prices and exclude inflation. Extending recent inflation trends would lift needs to roughly US\$440–520 billion per year, underscoring the urgency of locking in finance terms that do not worsen debt burdens.

Targets, pledges and shortfalls

On current trajectories, the Glasgow Climate Pact goal to double adaptation finance from 2019 levels to about US\$40 billion by 2025 will be missed. COP29 agreed a New Collective Quantified Goal of US\$300 billion per year for climate finance by 2035, covering both mitigation and adaptation.

That envelope, split across priorities and eroded by inflation, will still fall short of adaptation requirements. The Baku to Belém Roadmap signals a path to scale, but emphasises concessional, non-debt-creating instruments to avoid exacerbating vulnerabilities.

Policy responses and private finance

Adaptation planning is expanding, with most countries now holding at least one national policy or plan, though many require updates. Commitments via the Adaptation Fund, GEF and Green Climate Fund rose sharply in 2024, yet may represent a one-off spike amid tighter budgets.

The report urges stronger mitigation to contain future adaptation bills, vigilance against maladaptation, and wider use of grants and concessional tools. Private capital can help—potentially up to ~US\$50 billion annually with targeted de-risking and blended finance—but cannot replace robust public funding.

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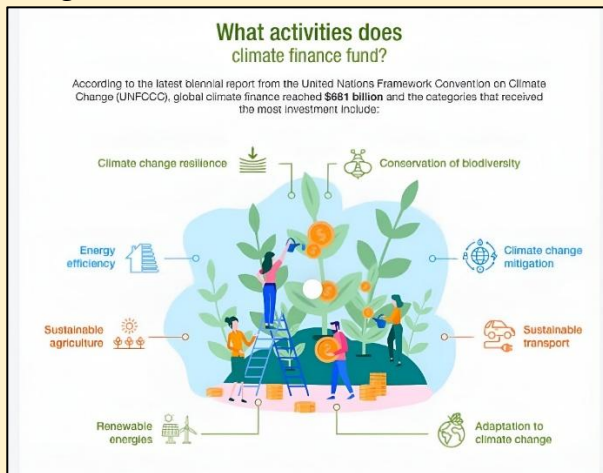
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WHAT IS ADAPTATION FUND?

Established under the Kyoto Protocol of the UN Framework Convention on Climate Change.



- It finances projects and programmes that help vulnerable communities in developing countries adapt to climate change.
- Initiatives are based on country needs, views and priorities.

Financing:

The Fund is financed in part by government and private donors, and also from a two percent share of proceeds of Certified Emission Reductions (CERs) issued under the Protocol's Clean Development Mechanism projects.

Governance:

The Fund is supervised and managed by the Adaptation Fund Board (AFB). The AFB is composed of 16 members and 16 alternates and meets at least twice a year.

The World Bank serves as trustee of the Adaptation Fund on an interim basis.

Challenges ahead:

The Adaptation Fund, despite its limited size, is one of the few consistent avenues for finance sourced from developed countries, over which developing countries have significant control. The challenge now is to keep raising money from developed countries, while retaining control in the representatives of those who are most vulnerable to the climate crisis.

ONE DISTRICT ONE PRODUCT (ODOP)

In a bid to promote local talent, the Indian Railways will patronise the newly launched 'Aabhar' online store that will showcase a range of exquisite gift items manufactured under the ambit of One District One Product (ODOP).



About One District One Product (ODOP):

- Nodal ministry: One District One Product (ODOP) was launched by the Ministry of Food Processing Industries in 2018.
- Objective: it aims to help districts reach their full potential, foster economic and socio-cultural growth, and create employment opportunities, especially, in rural areas.
- Every district as export hub: This initiative is carried out with the 'Districts as Exports Hub' initiative by the Directorate General of Foreign Trade (DGFT), Department of Commerce. It aims to turn every district in India, into an export hub through promotion of the product in which the district specialises.
- In line with Atmanirbhar Bharat: The initiative plans to accomplish this by scaling manufacturing, supporting local businesses, finding potential foreign customers and so on, thus helping to achieve the 'Atmanirbhar Bharat' vision.
- Process of selection: Under the ODOP initiative, all products have been selected by States/UTs by taking into consideration the existing ecosystem on the ground, products identified under Districts as Export Hubs (DEH), and GI-tagged products.

NAURADEHI SANCTUARY

Madhya Pradesh Chief Minister said that Nauradehi Sanctuary will become the third home for cheetahs in the state after Kuno National Park and Gandhi Sagar Sanctuary.



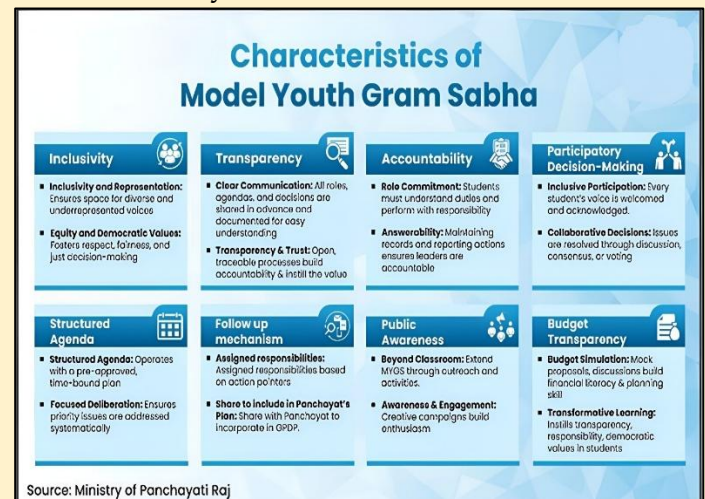
About Nauradehi Wildlife Sanctuary:

- **Location:** It is spread across three districts, i.e., Sagar, Damoh, and Narsinghpur, of Madhya Pradesh. The entire Sanctuary is situated on a plateau, forming part of the upper Vindhyan range.
- **Area:** It covers nearly 1197 sq.km. area.
- **Declaration as wildlife sanctuary:** It was declared a wildlife sanctuary in 1975. It is the largest wildlife sanctuary in Madhya Pradesh.
- **Acts as a natural corridor:** It acts as a corridor for Panna Tiger Reserve and Satpura Tiger Reserve while indirectly connecting Bandhavgarh Tiger Reserve via Rani Durgawati Wildlife Sanctuary.
- **Drainage:** Three-fourths of the wildlife sanctuary falls in the basin of the Ganges tributary, the Yamuna River, of which the Ken River is a tributary, and one-fourth of the sanctuary falls in the Narmada basin.
- **Major rivers:** The north-flowing Kopra River, Bamner River, Vyarma River, and Bearma River, which are tributaries of the Ken River, are the major rivers of this protected area.
- **Vegetation:** It is mainly a dry mixed-deciduous forest type.
- **Flora:** Major trees found are teak, saja, dhawda, sal, tendu (Coromandel ebony), bhirra (East Indian satinwood), and mahua.

- **Fauna:** The chief faunal elements include Nilgai, Chinkara, Chital, Sambhar, Black Buck, Barking deer, Common Langur, Rhesus Macaque, Freshwater Turtles, Spotted Grey Creeper, Cranes, Egrets, Lapwings, etc.

MODEL YOUTH GRAM SABHA

The Ministry of Panchayati Raj, in collaboration with the Ministry of Education (Department of School Education & Literacy) and the Ministry of Tribal Affairs, launched the Model Youth Gram Sabha (MYGS) initiative today in New Delhi.



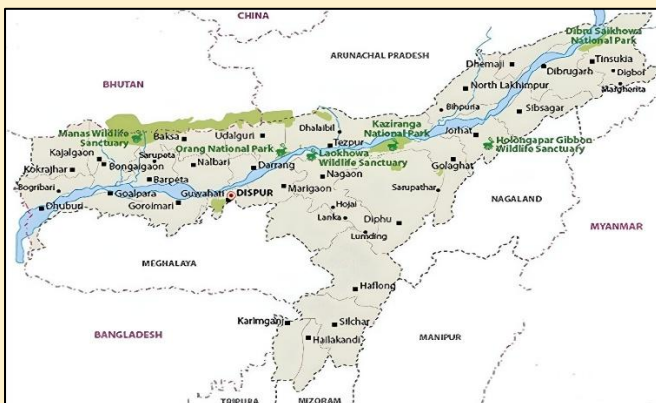
About Model Youth Gram Sabha Initiative:

- **Nature:** Model Youth Gram Sabha Initiative is a simulated forum for school children to participate in mock Gram Sabha sessions.
- **Objective:** It is a pioneering initiative to strengthen Janbhagidari and promote participatory local governance by engaging students in simulated Gram Sabha sessions.
- **Based on model UN:** It is an initiative based on the Model UN - an educational simulation of the United Nations - in schools across the country.
- **Nodal ministry:** It is an initiative of the Ministry of Panchayati Raj, in collaboration with the Ministry of Education and the Ministry of Tribal Affairs.

- **Implementation:** It will be rolled out across more than 1,000 schools nationwide, including Jawahar Navodaya Vidyalayas, Eklavya Model Residential Schools (EMRSs), and State Government Schools.
- **Key features:** Students from classes 9-12 will play the roles of sarpanch, ward members, and village-level officials, including village secretary, Anganwadi worker etc. They will hold mock meetings of the Gram Sabha, discuss various issues, and prepare the village budget and development plans.
- **Funding support:** The Panchayati Raj Ministry will also provide a support of Rs 20,000 to each school for holding the mock Gram Sabha.

LAOKHOWA WILDLIFE SANCTUARY

Conservationists, wildlife officials, academicians, and students have got together to push for the Ramsar site tag for Rowmari-Donduwa wetland complex, which is within the Laokhowa Wildlife Sanctuary.



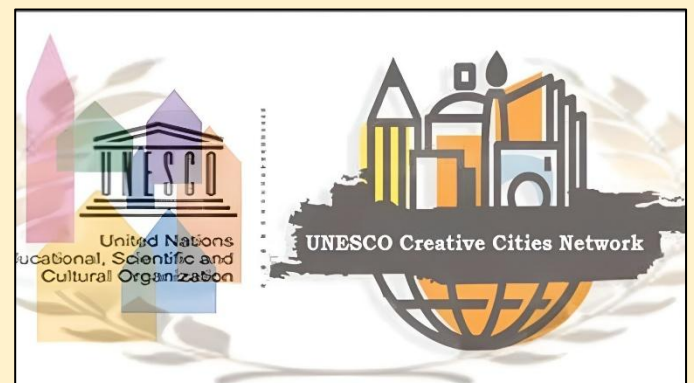
About Laokhowa Wildlife Sanctuary:

- **Location:** It is located on the southern part of the Brahmaputra River in Nagaon District of Assam.
- **Area:** It covers an area of around 70.13 sq.km.
- **Associated with Kaziranga tiger reserve:** It was declared as a buffer zone of the Kaziranga Tiger Reserve in 2007 and became an integral part of the larger Laokhowa-Burachapori ecosystem.

- **Encapsulated by human-dominated areas:** It is a part of the Brahmaputra valley and the sanctuary is surrounded by human-dominated areas on all sides except for the north.
- **Flora:** Laokhowa is rich in flora, with diverse plant species including grasslands, tropical moist deciduous forests, and semi-evergreen forests.
- **Fauna:** Its main attraction is the Great Indian one horned Rhinoceros. Other animals found here are Indian royal Bengal tiger, elephant, Wild Boar, Civet Cat, Leopard Cat, Hog Deer, Asian water buffalo, about 200 species of birds, including the Bengal Florica, Leopard, Asiatic Buffalo, etc.

UNESCO CREATIVE CITIES NETWORK (UCCN)

Lucknow has been declared a UNESCO 'Creative City of Gastronomy' during the 43rd Session of the UNESCO General Conference in Uzbekistan. The recognition celebrates the city's centuries-old Awadhi cuisine and living food traditions.



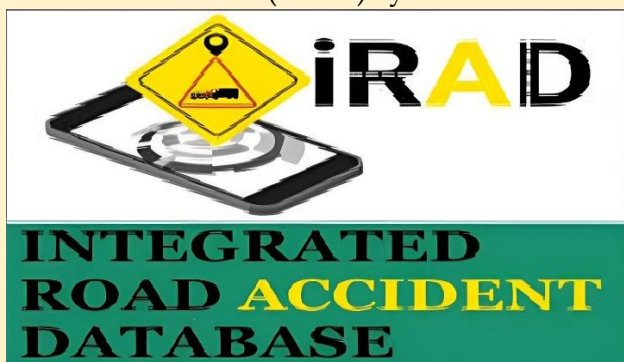
About UNESCO Creative Cities Network (UCCN):

- **Creation:** It was created in 2004 to promote UNESCO's goals of cultural diversity and strengthen resilience to threats such as climate change, rising inequality, and rapid urbanisation.
- **Objective:** It aims to promote cooperation among cities that have identified creativity as a strategic factor for sustainable urban development.

- Coverage: The network covers seven creative fields: crafts and folk arts, media arts, film, design, gastronomy, literature and music. The network is aimed at leveraging the creative, social, and economic potential of cultural industries.
- In sync with SDGs: It is in line with Sustainable Development Goal 11, which aims for Sustainable Cities and Communities.
- Involves participation of private sector: It allows member cities to recognise creativity as an essential component of urban development, notably through partnerships involving the public and private sectors and civil society.
- Formation of hubs of creativity: It envisages developing hubs of creativity, innovation and broadening opportunities for creators and professionals in the cultural sector.
- Indian Cities in the UCCN: Kozhikode (Literature), Gwalior (Music), Jaipur (Crafts and Folk Arts), Varanasi (Music), Chennai (Music), Mumbai (Film), Hyderabad (Gastronomy), Lucknow (Gastronomy), and Srinagar (Crafts and Folk Arts) are included in this list.

INTEGRATED ROAD ACCIDENT DATABASE (IRAD) SYSTEM

To prevent road accidents and fatalities, the Ministry of Road Transport and Highways (MoRTH) will soon release black spot data for 2023 and 2024 based on Integrated Road Accident Database (iRAD) system.

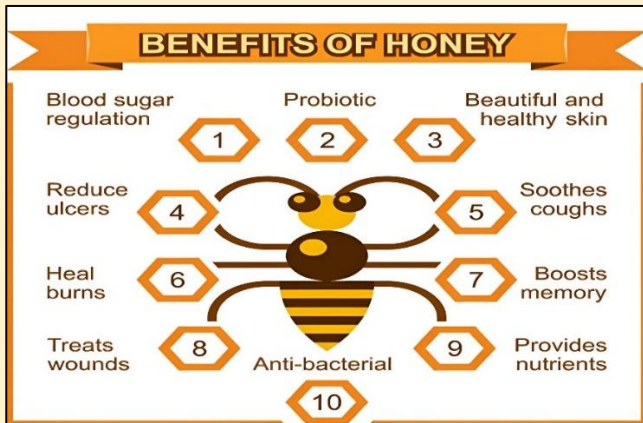


About Integrated Road Accident Database (iRAD) System:

- Nodal ministry: It is an initiative of the Ministry of Road Transport and Highways (MoRTH) and is funded by World Bank, to improve road safety in the country.
- Data for various stakeholders: This will facilitate road accident data collection by 4 stakeholder departments; Police, Transport, Highways and Health Departments.
- Identification of accident-prone areas: Through a collection of road accident data from all over the country, a road accident database will be developed. The collected data will be analysed using different data analytics techniques for the identification of accident-prone areas and the causes of the accidents.
- Unified strategy for road safety: The analysis output will be represented in appropriate dashboards, access to higher authorities of stakeholder departments and MoRTH. And accordingly, a strategy will be formed for the reduction of the number of road accidents in India and to enhance road safety.
- Working mechanism: The IRAD mobile application will enable police personnel to enter details about a road accident, along with photos and videos, following which a unique ID will be created for the incident.
- Subsequently, an engineer from the Public Works Department or the local body will receive an alert on his mobile device. He or she will then visit the accident site, examine it, and feed the required details, such as the road design.

NATIONAL BEEKEEPING & HONEY MISSION (NBHM)

The National Beekeeping & Honey Mission (NBHM) launched in 2021 by the Government of India is driving the ambitious “Sweet Revolution” in the country.



About National Beekeeping and Honey Mission:

- **Nature:** It is a Central Sector Scheme launched by the Government of India.
- **Objective:** It focuses on overall promotion and development of scientific beekeeping and the production of quality honey and other beehive products.
- **Implementation:** It is implemented by the National Bee Board (NBB) through 3 Mini Missions (MMs).
 - **Mini Mission-I:** Under this Mission, thrust will be given on production & productivity improvement of various crops through pollination assisted by adoption of scientific beekeeping;
 - **Mini Mission-II:** This Mission will concentrate on post-harvest management of beekeeping/beehive products including collection, processing, storage, marketing, value addition, etc.
 - **Mini Mission-III:** This Mission will concentrate on research & technology generation for different regions/states/agro-climatic and socio-economic conditions.

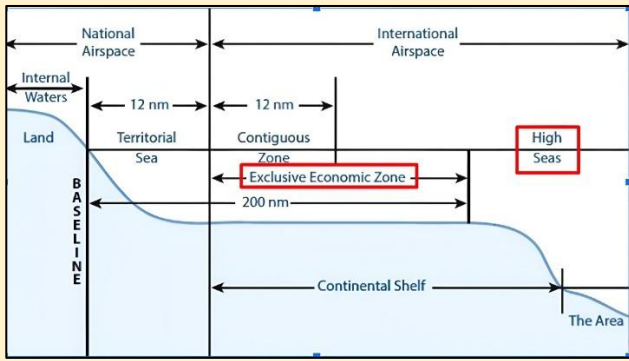
- **Funding:** The scheme has a total budget outlay of ₹500 crore for three years (2020-21 to 2022-23) and has been extended for another three years (2023-24 to 2025-26).
- **Major objectives:**
 - Promoting holistic growth of the beekeeping industry for providing livelihood support to farm and non-farm households.
 - Developing additional infrastructural facilities for developing quality nucleus stock of honeybees, multiplication of stock by bee breeders and post-harvest and marketing infrastructures.
 - Setting up of state-of-the-art Labs for testing of honey & other beehive products at regional levels and Mini/Satellite Labs at district levels.
 - To develop blockchain/ traceability system for source of honey & other beehive products and using IT tools in beekeeping, including online registration, etc.;
- **Institutional Framework:** It focuses on strengthening beekeepers through collective approaches like SHGs, FPOs, and cooperatives.

HIGH SEAS TREATY

The High Seas Treaty or Biodiversity Beyond National Jurisdiction (BBNJ) Agreement will come into force in January 2026 after ratification by 60 nations. It aims to conserve marine biodiversity beyond national waters but faces conceptual, legal, and geopolitical challenges.

About High Seas Treaty:

- **Formal name:** It is formally called the Agreement on Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction. In short, known as BBNJ or High Seas Treaty.
- **Under UNCLOS:** It is a new international legal framework under UNCLOS for maintaining the ecological health of the oceans.



- **Objective:** The treaty was negotiated in 2023 and is meant to reduce pollution, and promote the conservation and sustainable use of biodiversity and other marine resources in ocean waters outside the national jurisdiction of any country.
- **Focus on fair and equitable sharing:** It identifies Marine Genetic Resources (MGRs) as the common heritage of humankind, and insists on a fair and equitable sharing of benefits.
- **Includes EIAs:** The treaty also entails Environmental Impact Assessments (EIAs) for events potentially affecting these areas, especially when cumulative and transboundary impacts are taken into account.
- **Evolution:**
 - The first steps for the treaty began two decades ago. In 2004, the UN General Assembly formed an ad-hoc working group to fix the gap in the UN Convention on the Law of the Sea (UNCLOS), 1982, which did not have clear guidelines on protecting BBNJ.
 - By 2011, states had agreed to negotiate on four key issues, mainly MGRs, ABMTs, EIAs, and capacity building and technology transfer. Following this, four Intergovernmental Conference sessions were held between 2018 and 2023.
 - The parties to these discussions finally reached an agreement in March 2023, which led to the adoption of the treaty in June 2023.

Main Arguments

1. **Purpose and Scope:** The treaty seeks to regulate biodiversity beyond national jurisdiction (BBNJ)—covering nearly two-thirds of the world's oceans—through equitable benefit-sharing, conservation, and sustainable use of Marine Genetic Resources (MGRs).

- It introduces mechanisms like Area-Based Management Tools (ABMTs), including Marine Protected Areas (MPAs), and mandates Environmental Impact Assessments (EIAs) for human activities impacting these areas.

2. **Common Heritage of Humankind:** This principle asserts that marine resources in areas beyond national jurisdiction belong collectively to all humanity, and their exploration should benefit all nations equitably. It aims to prevent exclusive appropriation by technologically advanced nations.

3. **Complementing UNCLOS (1982):** The treaty fills a major gap in the UN Convention on the Law of the Sea (UNCLOS), which lacked clarity on managing resources in the high seas. The BBNJ strengthens UNCLOS through science-based and equitable governance mechanisms for marine ecosystems.

Challenges and Criticisms

1. **Ambiguity in Legal Principles:** The tension between “common heritage of humankind” and “freedom of the high seas” remains unresolved.

- While the former emphasizes equitable sharing, the latter permits unrestricted navigation and exploitation. The treaty's compromise wording leaves ambiguity over access, ownership, and benefit-sharing from Marine Genetic Resources.

2. **Biopiracy and Benefit-Sharing Issues:** Historically, developed nations have engaged in bioprospecting and patenting marine genetic discoveries without compensating source regions.

◦ Though the treaty introduces benefit-sharing provisions, it lacks clarity on calculating and distributing monetary or non-monetary benefits, heightening fears of biopiracy and unequal access for developing countries.

3. Non-Participation of Major Powers: The absence of key countries like the U.S., China, and Russia undermines the universality of the treaty. Their reluctance to ratify stems from economic and strategic interests in marine research, seabed mining, and naval freedom.

4. Institutional Overlap and Fragmentation: The treaty must coexist with existing bodies like the International Seabed Authority (ISA) and Regional Fisheries Management Organisations (RFMOs). Overlapping mandates risk jurisdictional conflict and fragmented ocean governance if coordination mechanisms are weak.

5. Operational and Monitoring Gaps: Implementing dynamic Marine Protected Areas (MPAs) and conducting transboundary EIAs require strong technical and financial capacities, which many developing nations lack. Moreover, monitoring, reporting, and enforcement mechanisms remain underdeveloped.

Reforms and Way Forward

1. Clarify Legal Definitions: Establish an international legal framework specifying how MGRs will be accessed, utilized, and monetized. Clear rules for benefit-sharing and intellectual property rights are crucial for transparency.

2. Capacity Building and Technology Transfer: Developed countries must finance and facilitate access to marine research technologies for developing nations, ensuring genuine equity in participation and data sharing.

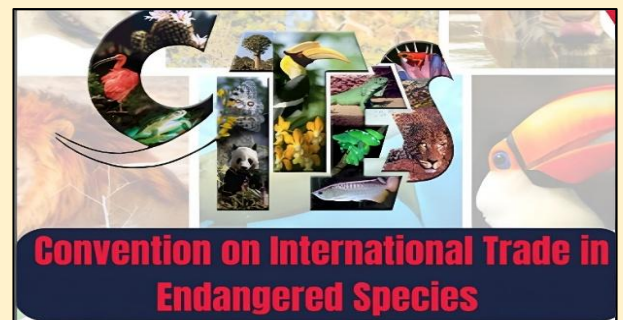
3. Strengthening Institutional Coordination: The BBNJ Secretariat should function in synergy with UNCLOS bodies, ISA, and RFMOs to avoid overlapping jurisdictions and ensure coherent ocean governance.

4. Dynamic Marine Governance: Encourage adaptive management of MPAs using real-time monitoring, satellite data, and indigenous ecological knowledge to enhance climate resilience and biodiversity protection.

5. Global Participation and Compliance: Diplomatic efforts are needed to secure ratification from major maritime powers and promote collective ownership of oceanic commons through international cooperation. The High Seas Treaty represents a historic step toward ensuring that the world's oceans remain a global commons serving both people and the planet. Yet, its success depends on clarity of principles, participation of major powers, and fair benefit-sharing mechanisms. The treaty must move beyond symbolism to establish a just, science-driven, and inclusive framework for ocean governance—where conservation and development coexist harmoniously.

CITES


- A committee of CITES has recommended that India's wildlife authorities pause the issue of permits that allow endangered animals to be imported by zoos, and wildlife rescue and rehabilitation centres.



- **Nomenclature:** Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is also known as the Washington Convention.
- **Establishment:** It was signed on 3rd March 1973 during the World Wildlife Conference and came into force on 1st July 1975. It was drafted following a 1963 resolution adopted by the International Union for Conservation of Nature (IUCN) to regulate wildlife trade.

- **Members:** The Convention now has 185 Parties, including India (a member since 1976) and the European Union.
- **Administration:** Administered by the UN Environment Programme (UNEP) in Geneva, CITES regulates international trade in over 40,000 species of wild animals and plants, including live specimens and wildlife-derived products.
- **Objective:** The treaty aims to ensure that such trade is sustainable, legal, and traceable, supporting biodiversity, local livelihoods, and national economies in line with the UN Sustainable Development Goals.
- **Working Procedure:** CITES regulates international trade through permits for export, import, re-export, and sea introduction. Each member country appoints management and scientific authorities to oversee licensing and conservation advice.
- **Appendices System:**
 - Appendix I: Species threatened with extinction. Trade is highly restricted.
 - Appendix II: Species not endangered but need controlled trade to avoid risk.
 - Appendix III: Species protected by at least one country that seeks cooperation to regulate trade.
- **Amendments:** Changes to Appendices I and II are decided at the Conference of the Parties (CoP), while Appendix III can be amended unilaterally by individual Parties.
- **Importance:** Wildlife trade is a multi-billion dollar global industry, and unregulated trade alongside habitat loss threatens many species with extinction.
- **CITES is recognized as one of the most effective environmental agreements, supported by tools like the CITES Trade Database (a global reference on legal wildlife trade) and clear guidelines for enforcement and legal acquisition.**

- **Major initiatives:** Initiatives like the Monitoring the Illegal Killing of Elephants (MIKE) Programme have significantly reduced poaching in Africa and Asia. It has helped save critically endangered species such as African elephants, pangolins, and crocodiles.
- **Association with Wildlife Protection Act:** All species listed in the CITES Appendices are now included in Schedule IV of the Wild Life (Protection) Amendment Act, 2022, reflecting India's strengthened cooperation with CITES.
- **Compliments activities of UN:** CITES complements the work of other UN entities, such as the Food and Agriculture Organization (FAO) to improve fisheries management, capacity building and technical cooperation with the Economic and Social Commission for Asia and the Pacific (ESCAP), and initiatives focusing on the youth with the UN Development Programme.



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Charachira, Kewal P.O. Thiruvananthapuram - 695003. Phone: 0471-231065, 2311654.
Email: directorccek@gmail.com, info.ccek@gmail.com Web: https://kscsa.org

For more details contact:
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GOGABEEL LAKE

- India's one more wetland, Gogabeel Lake in Katihar district of Bihar, has got a tag of international importance as a Ramsar site, bringing the total number of such protected sites in the country to 94.



About Gogabeel Lake:

- Nature: Gogabeel is now Bihar's sixth Ramsar site, joining others such as Gokul Jalashay and Udaipur Jheel among others.
- Location: It is an oxbow lake situated between the Ganga and Mahananda rivers in Katihar district, Bihar.
- Uniqueness: It is Bihar's first community reserve and functions as a floodplain wetland, naturally linking with both rivers during the monsoon.
- Festivals associated: Local cultural traditional festivals like Sirva, Adra, Chhat are observed in this wetland.
- Flora: These natural landscapes mostly consist of tropical dry deciduous forests.
- Fauna: It is home to the Smooth Coated Otter (*Lutrogale perspici lata*) and Helicopter Catfish (*Walogattu*). It serves as a breeding ground for Vulnerable fish species *Walogattu*.
- Importance: It serves as a major habitat for migratory birds and a breeding ground for aquatic species. It supports rich biodiversity, including aquatic flora, fish, and wetland-dependent species. It also plays a key role in flood mitigation, groundwater recharge, and climate regulation in the Gangetic plains.

RAMMAN FESTIVAL

President Droupadi Murmu attended a special session of the Uttarakhand Assembly on Monday, where Speaker Ritu Khanduri Bhushan presented her with a Ramman mask and a book on the centuries-old festival celebrated in the state's Garhwal region.



About Ramman Festival:

- Location: It is celebrated in the twin villages of Saloor-Dungra in Uttarakhand every year in late April.
- Deity: It is a religious festival in honour of the tutelary god, Bhumiya Devta.
- Associated rituals: This event is made up of highly complex rituals. It includes the recitation of a version of the epic of Rama and various legends, and the performance of songs and masked dances. It features complex rituals, recitations of the Ramayana, songs, and masked dances, with each caste and group playing distinct roles.
- Emphasis on masks: There are 18 different types of masks made of Bhojpatra, Himalayan birch, that performers wear during the event.
- Community Participation: Entire village households contribute; roles are caste-based (priests, mask-makers, drum players), funding comes from the village, and participation spans elders to youth.
- Fusion of Art Forms: It blends narration, masked dances, ritual drama, music, and mask craft into one integrated festival.
- Instruments used: Some of the instruments documented include Dhol (a type of drum) Damau (smaller percussion drum), Manjira (small hand cymbals), Jhanjhar (larger cymbals), Bhankora (a kind of trumpet).
- Significance: In 2009, Ramman was inscribed in the list of UNESCO's Intangible Cultural Heritage of Humanity.

VIJAYANAGARA EMPIRE

- One hundred and three punch-marked gold coins dated to Vijayanagara era were found in a earthen pot around 10 kms from Jamunamarathur village atop Jawadhu Hills in Tiruvannamalai.



About Vijayanagara Empire:

- **Foundation:** According to tradition, the founders of the Vijayanagara Empire belonged to a family of five brothers who were feudatories of the Kakatiyas of Warangal. Founded in 1336 by Harihara I and Bukka Raya I of the Sangama Dynasty, Vijayanagara became a prominent cultural and political centre in South India.
- **Capital:** The capital of the Vijayanagara Empire was Vijayanagara, located on the banks of the Tungabhadra River in present-day Hampi, Karnataka.
- **Polity and administration:** The polity of Vijayanagar was based on the King being the power centre with a council of ministers to advise him. The kingdom was divided into Rajyas or Mandalam (provinces), which were further subdivided into Nadus (district), Sthala (sub-district) and grama (village).
- **Economy:** Industries like textile, mining and metallurgy flourished under the patronage of Vijayanagar rulers. The trade was brisk, and external trade with Persia, Arabia and South East Asian countries like Burma, China and Sri Lanka. Ships carried rice, iron, sandalwood, sugar and spices to these countries.

- **Society:** Like all the other societies of the medieval period, the Vijayanagara society was divided into three main classes – the nobles, the middle class and the common people. The nobles lived in great comfort and luxury, while the middle classes were mainly businessmen and lived in cities. The common people lived an ordinary life and were taxed heavily.
- **Religion:** The Sangama rulers were mostly followers of Shaivism, and Virupaksha was their family deity. Later dynasties were influenced by Vaishnavism, but Shiva continued to be practised. Srivaishnavism of Ramanuja attained high popularity. However, all kings were tolerant towards other religions and their practices.
- **Art and architecture:** The rulers of the Vijayanagara empire built many temples and palaces. The chief characteristics of the Vijayanagara architecture were the construction of tall Raya Gopurams or gateways, the Kalyana mandapam with carved pillars in the temple premises, the Garbhagriha and the Amman shrine.
- **Literature:** The Vijayanagara rulers patronised Sanskrit, Telugu, Kannada and Tamil literature. The empire was at the peak of its literary achievement during the rule of Krishna Deva Raya. Known as the 'Andhra Bhoja', Krishna Deva Raya wrote 'Amuktamalyada', a book on polity in Telugu which explains how a king should rule.
- **UNESCO world heritage site:** The Vijayanagar Empire's former capital, Hampi, is a UNESCO World Heritage Site. The site comprises the remnants of the capital city from the 14th to 16th centuries CE in the Tungabhadra basin of Karnataka. It is a major tourist destination known for its ruins, including the Virupaksha Temple.

DEENDAYAL ANTYODAYA YOJANA – NATIONAL RURAL LIVELIHOODS MISSION (DAY-NRLM)

A high-level Ethiopian delegation has concluded a week-long visit to India aimed at studying the Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM). The visit, facilitated by India's Ministry of Rural Development, focused on understanding India's innovative approaches to poverty reduction and women's empowerment.

Learning from India's Livelihood Mission

The Ethiopian delegates observed how NRLM has empowered millions of rural women through self-help groups (SHGs), bank linkages, and entrepreneurship initiatives. They praised the flexibility of the mission's design, which adapts to diverse local needs. Ethiopian officials expressed a strong interest in replicating similar frameworks within their Productive Safety Net Program (PSNP), their flagship social protection initiative.



Empowering Women through Community Institutions

The Ethiopian team showed particular interest in India's 'sakhis' – local women facilitators providing last-mile delivery of services. They also studied initiatives linking rural women's groups with formal banking systems, which have enhanced financial inclusion.

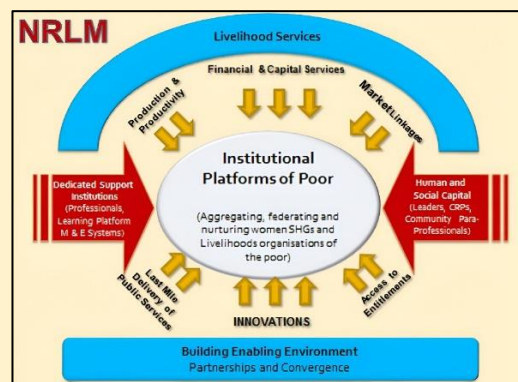
The delegation noted that empowering women through collective action not only boosts family income but strengthens entire communities.

India-Ethiopia Development Partnership

The Ethiopian Ambassador to India emphasised the enduring friendship between the two nations and called for deepened collaboration in social and digital sectors. Recognising India's global leadership in Digital Public Infrastructure, he advocated adopting similar tools to modernise Ethiopia's welfare systems. The visit marked a new chapter in South-South cooperation, highlighting shared goals of inclusive growth and gender equality.

SWARNJAYANTI GRAM SWAROJGAR YOJANA (SGSY)

Swarnjayanti Gram Swarojgar Yojana (SGSY) was restructured as National Rural Livelihoods Mission and launched in June, 2011 in Rajasthan's tribal district of Banswara. NRLM has now been renamed as Aajeevika. This World Bank Supported Programme supports Rural BPL people by organizing them into SHG (Self Help Groups) groups and make them capable for self-employment by providing capacities such as information, knowledge, skills, tools, finance and collectivization.



Approach

The previous Avatar of this scheme viz. SGSY also focussed on forming the SHGs and help them to start entrepreneurial activities. But the issue was that such individual SHGs did not survive because of the following reasons:

- lack of credit, finance as well as skills
- Lack of forward and backward linkages
- Competition and little support from government
- Lack of capacity building

The SGSY scheme was successful only in those states where federations of SHGs were formed under poverty alleviation programmes. By forming federation of SHG groups, each SHG will work closely with members of other groups in their own village and also with members of other blocks and district.

This will be a bigger collective group, organizing all the rural poor in a state under one programme. This is how SGSY was modified in a mission mode to NRLM programme.

- The scheme's emphasis on creation of strong institutional structures at the village level will set it apart from the other flagship schemes of the government.
- Universal social mobilization through formation of SHGs under Aajeevika will ensure that at least one member of each rural BPL household, preferably a woman member of the household, is brought under the Self Help Group (SHG) net.
- With a view to form strong Peoples Institutions, Aajeevika will focus on setting up of federations of SHGs from village panchayat to district levels. The goal of universal financial inclusion will be furthered through linking the SHGs with banks for securing credit.
- Aajeevika envisages Capacity Building and Training of the community Institutions and the personnel engaged in programme implementation as well as other stakeholders like Bankers, PRI functionaries etc.
- To meet the requirement both in terms of consumption and taking up the income generating activities, revolving fund is provided to the extent of ₹ 10000 - ₹ 15000 per SHG. Interest subsidy will be provided to SHGs for prompt repayment of loans to banks.

WORLD METEOROLOGICAL ORGANISATION (WMO)



The World Meteorological Organisation (WMO) has declared that the three years since 2023, along with the decade-long span from 2015 to 2025, have been the hottest periods ever recorded. In its "State of the Global Climate Update 2025", the agency warned that 2025 is on track to become the second or third-warmest year in history, with global temperatures currently averaging 1.4°C above pre-industrial levels.

About World Meteorological Organization:

It is a specialized agency of the United Nations (UN).

History

It originated from the International Meteorological Organization (IMO), which was founded in 1873.

Established in 1950, WMO became the specialized agency of the UN for meteorology (weather and climate), operational hydrology and related geophysical sciences.

It is the UN system's authoritative voice on the state and behavior of the Earth's atmosphere, its interaction with the oceans, the climate it produces, and the resulting distribution of water resources.

Its main goal is to facilitate international cooperation in the development of meteorology and the exchange of information and technology related to weather, climate, hydrology and related environmental fields.

Governance Structure:

World Meteorological Congress: It is WMO's supreme body which consists of representatives of all members. It meets at least every four years to set general policy and adopt regulations.

Executive Council: It consists of 36-members which meets annually and implements policy.

Secretariat: It is headed by a secretary-general appointed by the congress for a four-year term, serves as the administrative centre of the organization.

Members: It has 193 Members, including 187 Member States and 6 Territories, maintaining their own meteorological services.

Headquarter: Geneva, Switzerland.

TYPHOON KALMAEGI

Typhoon Kalmaegi has left severe destruction across the central Philippines and now threatens Vietnam's coast after rapidly strengthening over the South China Sea. The storm, the deadliest in Asia this year, killed at least 114 people in the Philippines, inundated cities, and displaced thousands as residents begin the difficult recovery amid deep mud and wreckage.



Philippines Counts the Human and Economic Toll

Cebu province bore the brunt, with neighbourhoods along the Mananga River flattened and streets choked with overturned cars. Talisay and Cebu City saw homes swept away as torrents surged with little warning. Rescue teams waded through waist-deep waters to evacuate stranded residents from rooftops and classrooms converted into shelters.

A state of national calamity was declared as authorities mobilised relief, only weeks after a magnitude 6.9 earthquake had already strained local capacity.

Why Kalmaegi Became So Deadly

Kalmaegi made landfall as the equivalent of a Category 2 hurricane but moved slowly, wringing out extreme rainfall over densely populated terrain. Cebu's rugged topography funnelled runoff into low-lying communities with inadequate drainage, leading to rapid river rises and flash flooding.

Most fatalities were due to drowning. Meteorologists noted that while wind categories capture public attention, water – via rain, storm surge, and river flooding – remains the primary killer in tropical cyclones.

Vietnam Braces for Category 4 Landfall

Over open water, Kalmaegi intensified to the equivalent of Category 4, with winds near 215 km/h, and is forecast to hit central Vietnam on Thursday night. Provinces including Danang, Quang Ngai and Dak Lak face damaging winds, storm surge and prolific rainfall.

Authorities planned large-scale evacuations, with reports indicating around 350,000 people to be moved in Gia Lai alone. The strike comes as central Vietnam is still clearing record floods that submerged UNESCO-listed Hoi An and damaged homes, transport links and power supplies. A trailing system, Tropical Storm Fung-Wong (Uwan), may intensify later this week, threatening northern Luzon with additional flooding.

Climate Signal: Hotter Seas, Heavier Rainfall

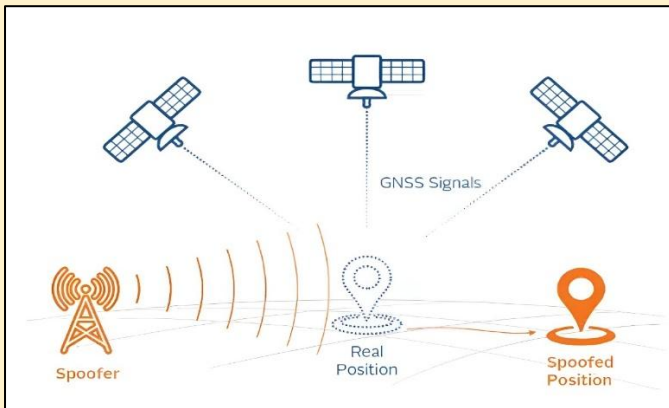
Exceptionally warm western Pacific waters provided abundant energy for rapid intensification, while a moisture-laden atmosphere boosted rainfall efficiency. Scientists link such extremes to human-driven warming, which raises sea-surface temperatures and increases air moisture capacity.

The result: storms that may not always be strongest by wind at landfall yet deliver catastrophic freshwater flooding, exposing vulnerabilities in drainage, land use, and early-warning uptake across coastal megacities and river basins.

WHAT IS A SPOOFING ATTACK?

A “spoofing attack” is a broad category of cyberattack where fake data is disguised as originating from a trusted source to deceive systems or users.

Kinds of spoofing include GPS Spoofing, IP spoofing – often used to avoid detection while performing Distributed Denial of Service (DDoS) – as well as SMS spoofing and caller ID spoofing, where messages or calls appear to be from another number or caller ID.



About GPS Spoofing

GPS spoofing uses bogus radio signals to imitate legitimate Global Positioning System (GPS) signals, misdirecting GPS-receiving devices about their actual location.

This can result in incorrect navigation data and potentially life-threatening situations, especially in systems that rely heavily on precise location information.

How GPS Spoofing Works?

GPS spoofing exploits the inherent vulnerabilities in the GPS infrastructure – the weak signal strength of GPS satellites.

The GPS functions by sending signals from satellites to GPS receivers on Earth.

These receivers then calculate their position based on the time it takes for these signals to arrive.

However, due to the weak signal strength of the GPS satellites, these signals can be easily overwhelmed by fake signals, resulting in inaccurate location data on the receiving device.

Typically, a GPS spoofer begins by acquiring a basic understanding of the victim’s GPS setup, including the types of signals it uses and how they are processed.

With that information, the attacker then sends counterfeit GPS signals that mimic the real ones.

These fake signals are stronger, causing the receiver to recognize them as authentic signals.

As a result, the victim’s GPS receiver ends up processing these counterfeit signals, leading to erroneous location information.

SHAD NONGKREM FESTIVAL

The Khasi community of Meghalaya came together in Smit to celebrate the annual Shad Nongkrem festival, a five-day religious and cultural event that symbolises gratitude for a bountiful harvest and prosperity. The festival, known for its splendour and traditional dances, drew locals and visitors alike to witness one of India’s most distinctive tribal celebrations.



Ancient Khasi Tradition at the Heart of the Festival

Shad Nongkrem, or Nongkrem Dance, is an ancient Khasi festival performed in honour of Ka Blei Synshar, the goddess of fertility and prosperity. It takes place in Smit, the traditional capital of Hima Khyrim, about 20 km from Shillong.

The Syiem (king) of Hima Khyrim, Dr Balajied Syiem, presided over the rituals, performing the Pomblang ceremony alongside high priests to offer sacrifices and prayers to Lei Shyllong, the deity of Shillong Peak.

Vibrant Dances and Traditional Regalia

The celebration's highlight is the vibrant dance performance by Khasi maidens and young men dressed in elaborate traditional attire. Women perform the 'Ka Shad Kynthei' in the centre, wearing crowns adorned with the rare golden 'Tiew Lasubon' flower symbolising purity.

The men perform 'Ka Shad Mastieh', holding swords and yak hair whisks, moving rhythmically to the beats of drums and the tune of the traditional 'tangmuri' pipes. The event showcases the rich matrilineal ethos and deep spiritual heritage of the Khasi tribe.

Community Participation and Cultural Symbolism

The festival unites the Khasi people through shared belief and celebration. It symbolises harmony between nature, divinity, and humanity, reflecting gratitude for nature's abundance. Umbrellas held over the royal maidens during the dance signify respect and sanctity. Each performance narrates the Khasi people's devotion to tradition, their reverence for the land, and their communal unity.

VEDANTHANGAL BIRD SANCTUARY

The Vedanthangal Bird Sanctuary in Tamil Nadu has come alive with the arrival of thousands of migratory birds, signalling the start of the annual nesting season. Located about 90 kilometres from Chennai, the sanctuary is witnessing over 20 species returning to breed, transforming the wetlands into a vibrant hub of avian activity and drawing birdwatchers and tourists in large numbers.



Rich Diversity of Migratory Species

This year's early arrivals include open-billed storks, white ibis, grey herons, little cormorants, darters, egrets, and pelicans. Forest officials have also recorded the presence of spoonbills, pond herons, night herons, and various species of ducks and moorhens.

Open-billed storks, in particular, have already completed their breeding cycle, with chicks now visible on the treetops. Most birds have built nests on barringtonia trees, which provide sturdy and safe perching spots above the water.

Ideal Habitat Conditions from Ample Rainfall

Officials credit the sanctuary's thriving bird population to the excellent water levels in the main tank, replenished by recent rainfall and steady inflow from the nearby Valayaputhur lake.

The tank, capable of holding 20 feet of water, currently stands at around 16 feet and is expected to fill completely during the northeast monsoon. Restoration of blocked water channels has also ensured uninterrupted inflow, creating ideal feeding and nesting conditions for migratory birds.

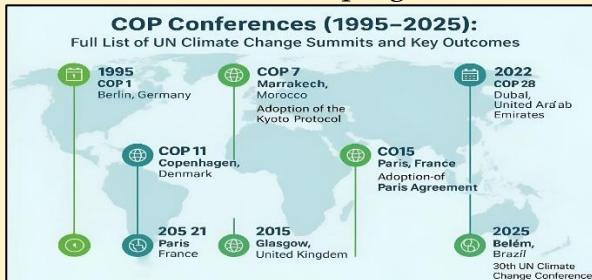
Conservation and Visitor Engagement

The Tamil Nadu Forest Department plans to carry out desilting and plantation drives once the water recedes after summer to maintain ecological balance.

Planting more barringtonia trees will support future nesting cycles. With more than 15,000 birds currently inhabiting the sanctuary, weekends have seen a surge in visitors and nature photographers eager to capture the annual migration spectacle.

COP30

COP30 in Belém, Brazil, marks a decade since the Paris Agreement and is being called the “Implementation COP”. It aims to convert global climate pledges into actionable outcomes, focusing on energy transitions, adaptation, biodiversity conservation, and climate finance for developing nations.



Main Arguments

- Implementation COP:** COP30 seeks to operationalise commitments through the *Global Stocktake (GST)*—a five-yearly review under the Paris Agreement—to assess progress on mitigation, adaptation, and finance.
- Thematic Focus:** The agenda emphasises six core areas—energy, industry, transport transitions; stewardship of forests, oceans, biodiversity; food system transformation; resilient urban infrastructure; and human development.
- Climate Finance Roadmap:** The *Baku-to-Belém Roadmap* aims to mobilise at least **\$1.3 trillion annually by 2035**, building on COP29’s *New Collective Quantified Goal (NCQG)* of \$300 billion per year. Yet, it remains non-binding and lacks clarity on accountability.
- Adaptation Framework:** COP30 is expected to finalise the *Global Goal on Adaptation (GGA)*—quantifying resilience outcomes, financing needs, and integrating local and indigenous knowledge for region-specific climate adaptation.
- Climate-Nature Nexus:** The summit aims to merge biodiversity and climate action through Brazil’s *Tropical Forest Forever Facility*, incentivising developing nations to protect tropical forests and biodiversity.

- India’s Role:** India, leading the G77+China bloc, stresses *climate justice* and *common but differentiated responsibilities (CBDR)*, pushing developed nations for predictable finance, while advancing domestic initiatives like *green bonds*, *carbon markets*, and *green budgeting*.

Criticisms and Challenges

- Finance Deficit:** Despite the NCQG, developing nations argue that \$300 billion is insufficient compared to trillions required annually, and the inclusion of “all actors” dilutes CBDR principles.
- Implementation Gap:** Many countries have yet to submit updated *Nationally Determined Contributions (NDCs)* for 2035—covering only 19% of global emissions—reflecting weak ambition.
- Inclusion Concerns:** Logistical issues in Belém have limited participation from low-income nations and civil society, undermining equitable representation.
- Loss and Damage Fund:** Underfunded since COP28, with less than \$1 billion committed against needs in hundreds of billions, weakening trust in developed nations’ pledges.
- Technology and IP Barriers:** High costs and restrictive intellectual property rights hinder developing countries from adopting clean and resilient technologies.

Reforms and Way Forward

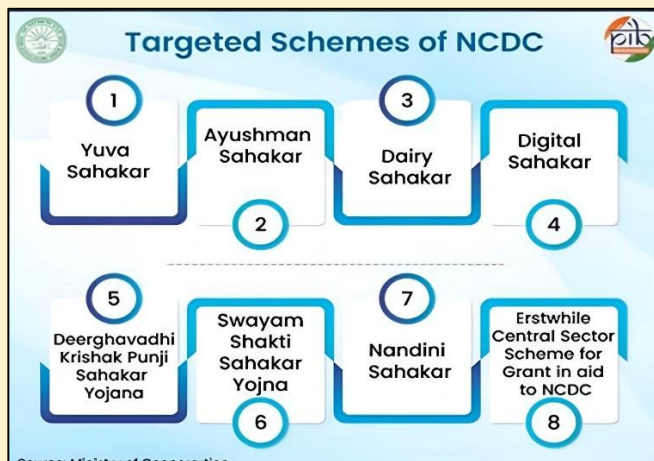
- Strengthening Climate Finance:** Establish binding mechanisms for NCQG disbursement, with transparent tracking of public and private contributions.
- Just Transition Frameworks:** Ensure fair energy and industrial transitions through *North–South technology partnerships*, capacity building, and green skill investments.
- Mainstreaming Adaptation:** Localise adaptation policies by integrating traditional practices, water conservation models, and community-led restoration as demonstrated in India.

4. **Integrated Climate-Biodiversity Planning:** Link financing for reforestation, agroforestry, and ecosystem services under one climate-nature investment strategy.
5. **Accountability Mechanisms:** Strengthen GST to ensure measurable progress on NDCs, verified through *common transparency frameworks*.

COP30 is a crucial turning point—shifting from promises to performance. Hosted in the Amazon, it symbolises the urgency of protecting global commons while ensuring equitable growth. For India and the Global South, it represents both a challenge and an opportunity: to demand climate justice, secure finance, and pioneer inclusive, resilient development pathways.

NATIONAL COOPERATIVE DEVELOPMENT CORPORATION (NCDC)

Over the years, the National Cooperative Development Corporation (NCDC) has demonstrated a strong and sustained commitment to strengthening India's cooperative ecosystem through continuous financial support.



About National Cooperative Development Corporation (NCDC):

- **Nature:** NCDC is a statutory body that promotes and finances cooperative development in agriculture, rural industries, and allied sectors.
- **Establishment:** It was set up in 1963 under an Act of Parliament and functions under the Ministry of Cooperation.
-

- **Headquarters:** It is based in New Delhi, with 18 regional and state offices across India.
- **Objective:** It promotes self-reliant and sustainable cooperatives in agriculture and rural industries and enables cooperatives to access long-term credit, working capital, and modern infrastructure.

Major functions:

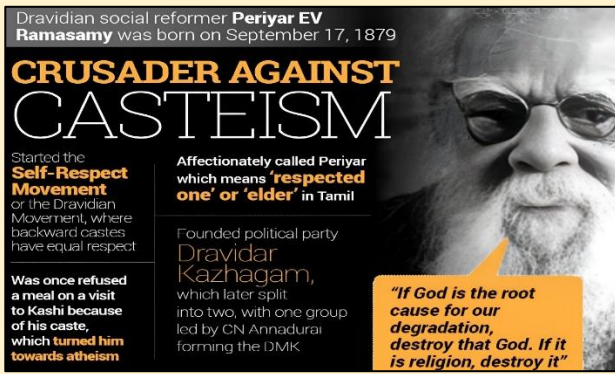
- It finances production, processing, marketing, and storage of agricultural produce. It also supports import and export of notified commodities such as fertilizers, machinery, rubber, textiles, etc.
- It funds income-generating activities like dairy, poultry, fisheries, handloom, and sericulture. It also extends financial assistance to cooperatives for rural infrastructure such as irrigation, sanitation, and animal health.
- It provides both grants and loans to State Governments and directly to eligible cooperative societies. It also offers technical guidance and project preparation support through its regional offices.

Significance of NCDC:

- It serves over 13,000 cooperative societies with 2.9 crore members.
- It enables inclusive rural growth through job creation, especially in women-led and labour cooperatives.
- It supports cooperatives in cold storage, food processing, fisheries, dairy, and textiles, enhancing value chains.

SELF RESPECT MOVEMENT

The year 2025 marks 100 years of the **Self-Respect Movement** launched by **E.V. Ramasamy Periyar** in Tamil Nadu. The movement, rooted in rationalism and equality, transformed India's discourse on caste, gender, and identity, laying the foundation for Dravidian politics and modern social justice.



Main Arguments

1. Origins and Philosophy

- The **Self-Respect Movement (1925)** arose in colonial Tamil society marked by Brahmin dominance, caste rigidity, and gender inequality.
- Periyar, disillusioned by the Congress's indifference to caste issues, envisioned a **movement of social self-determination** – reclaiming *dignity* (*suyamariyadhai*) for the oppressed.
- Its philosophical base combined **rationalism, humanism, and social equality**, challenging religion-sanctioned hierarchies.
- Influenced by **Iyothee Thass's anti-caste writings** and **Ataturk's secularism**, Periyar sought not political independence first, but **freedom from social slavery**.

Aims and Core Tenets

Annihilation of Caste (Jaathi Ozhippu):

- Called for the destruction of caste-based birth privileges and priestly authority.
- Promoted inter-caste dining and marriage, temple entry for all, and equal respect for all professions.
- Influenced **Ambedkar's later call for "caste annihilation"**, reflecting convergent reformist ideals.

Women's Liberation (Penn Viduthalai):

- Advocated equal rights in education, marriage, and property.
- Opposed child marriage, dowry, and female chastity norms (*karpu*).
- Women activists like **Nagammai and Moovalur Ramamirtham Ammaiyar** led campaigns for widow remarriage and reproductive rights.

Rationalism (Pagutharivu):

- Encouraged questioning of blind faith, rituals, astrology, and religious dogma.
- Used public lectures and journals (*Kudi Arasu*) to promote scientific temper and moral reasoning.
- Emphasized **"reason over religion"** as the path to equality – later echoed in **Article 51A(h)** of the Indian Constitution.

Social Equality (Samathuvam):

- Sought a society without caste, gender, or class distinctions.
- Rejected Sanskritisation as a means of upliftment and instead promoted **Tamil identity and Dravidian culture** as tools of self-respect.

Impact and Legacy

Social Impact

- **Democratisation of Tamil Society:** The movement broke traditional barriers between upper and lower castes through community reforms and public inter-caste marriages.
- **Rise of Rational Discourse:** Created a shift from ritual-based religion to reason-based ethics; influenced later reformists and educators.
- **Empowerment of Marginalised Castes:** For the first time, **non-Brahmin voices gained** ideological legitimacy in social and cultural life.

Political Impact

- **Dravidian Ideology:** The movement gave birth to the **Justice Party (later Dravidar Kazhagam)** and influenced **DMK and AIADMK**, embedding **social justice, welfare, and linguistic pride** in Tamil politics.
- **Reservation and Affirmative Action:** Laid the foundation for **communal representation (1921 Madras G.O.)**, influencing later Mandal policies nationwide.
- **Model of Social Democracy:** Tamil Nadu's progressive social indicators – literacy, women's empowerment, low fertility, and caste mobility – reflect Periyar's social model in governance.

Gender and Cultural Impact

- The movement redefined womanhood beyond domesticity – promoting **female public participation and education**.
- Encouraged women to preside over public meetings, a rare phenomenon in 1930s India.
- Challenged **Sanskritic patriarchy** and legitimised **Tamil feminist expression** through print media and theatre.

Intellectual and National Influence

- The idea of **self-respect** transcended Tamil Nadu, resonating with **Ambedkarite and socialist movements** in western and northern India.
- Influenced the language of **constitutional morality, rational thought, and secular citizenship** post-1947.
- Inspired leaders like **Ram Manohar Lohia** and **Jyotirao Phule's followers** who connected caste and economic injustice.

Criticisms and Limitations

- **Excessive Anti-Religious Tone:** Periyar's militant atheism alienated moderate believers and limited wider social appeal.
- **Neglect of Class and Economic Issues:** Critics argue that caste and gender were prioritised over economic redistribution.
- **Dravidian Political Dilution:** Later political offshoots diluted Periyar's radical egalitarianism, turning reform into **vote-based populism**.
- **Limited Pan-Indian Penetration:** The movement remained largely regional due to its linguistic and cultural framing.

The **Self-Respect Movement** was not merely a Tamil social reform; it was a **revolution in human dignity**. By replacing ritual with reason and hierarchy with equality, Periyar redefined the meaning of freedom in India.

Its impact—visible in **affirmative action, women's emancipation, and rationalist education**—continues to shape India's democratic ethos. Yet, caste and gender inequities remind us that the struggle for *suyamariyadhai* (self-respect) remains incomplete.

In essence, Periyar's century-old call still echoes: *"Without self-respect, self-rule is meaningless."*

R2 SWAN

A spectacular astronomical event graced Oman's skies as Comet C/2025 R2 SWAN, a rare celestial object from the outer solar system, was observed and photographed by the Oman Society of Astronomy and Space (OSAS). With an orbital period exceeding 20,000 years, the comet's appearance marks a once-in-a-lifetime spectacle for sky watchers and scientists alike.



Discovery and Background of Comet SWAN

Comet C/2025 R2 SWAN was first discovered on 11 September 2025 by Ukrainian amateur astronomer Vladimir Bezugly using images from the Solar Wind Anisotropies (SWAN) instrument aboard the SOHO observatory.

The discovery was confirmed a day later by astronomer Martin Macek through observations with the FRAM telescope in Chile. The SWAN instrument, primarily designed to monitor solar wind, has been instrumental in identifying several comets in recent years.

Observation and Imaging in Oman

The Oman Society of Astronomy and Space successfully tracked and photographed Comet SWAN across the Sultanate's night skies. Vice Chairman Ibrahim bin Mohammed Al Mahrouqi described the observation as part of OSAS's mission to monitor and document rare cosmic events.

Al Jalandi bin Masaud Al Rawahi, another OSAS member, captured striking images of the comet from a dark-sky site in Muscat Governorate, contributing to a growing archive of Oman's astronomical achievements.

Comet's Path, Distance, and Visibility

Comet SWAN reached its closest approach to the Sun on 12 September 2025 at 0.5 astronomical units (AU) and passed nearest to Earth on 20 October 2025 at 0.261 AU, approximately 39 million kilometres away. During October, it shone with a magnitude between 6 and 7, visible with binoculars under clear skies.

By November, the comet had moved into the constellation Aquarius, with its brightness gradually fading to magnitude 8.2–10.75, requiring a telescope for observation.

AI GOVERNANCE GUIDELINES

India has taken a major step towards responsible artificial intelligence regulation with the release of its first AI Governance Guidelines. Issued by the Ministry of Electronics and Information Technology (MeitY), the framework emphasises adaptive regulation within existing laws instead of introducing a separate AI-specific legislation.



Adaptive Approach Over New Legislation

The new framework advocates for an incremental and flexible approach, applying current statutes such as the Information Technology Act, 2000, the Digital Personal Data Protection Act, 2023, and the Consumer Protection Act, 2019.

It highlights the need to reinterpret these laws in the context of emerging AI challenges including bias, misinformation, and data misuse. MeitY clarified that India's AI policy will rely on evolving regulatory mechanisms rather than a rigid new law.

Key Focus Areas in Legal Adaptation

One major proposal involves updating the definition of "intermediary" under the IT Act. The current definition covers online platforms that host or transmit third-party content but fails to include AI systems that autonomously generate or modify information.

The guidelines recommend examining whether such AI entities should retain the "safe harbour" protection under Section 79 of the Act or be subject to new accountability provisions.

Bridging Policy and Technology Gaps

The AI governance framework identifies the need for harmonisation between data protection, consumer rights, and cybersecurity policies. It calls for greater transparency and explainability in AI models, along with risk-based compliance.

The framework also encourages the creation of a national registry for high-risk AI systems to ensure traceability and ethical deployment.

India's Strategy for Ethical and Secure AI Growth

The guidelines place India among countries opting for "light-touch" regulation while prioritising innovation and ethical safeguards. By leveraging current legal frameworks and integrating AI risk management, the policy seeks to balance technological advancement with public trust. This marks a foundational move in India's broader digital governance ecosystem, paving the way for responsible AI deployment in public and private sectors alike.

What is the Digital Personal Data Protection Act, 2023?

- **About:** It is India's first comprehensive data protection law, offering a legal framework for handling digital personal data, with the goal of safeguarding individual privacy while permitting lawful data processing.

- Enacted nearly 6 years after the Supreme Court's 2017 **KS Puttaswamy judgment** recognizing privacy as a fundamental right under Article 21, the Act is inspired by global frameworks like the EU's **General Data Protection Regulations (GDPR)** to outline privacy and data protection obligations.
- **Applicability:** The Act applies to **digital personal data** processed **within India**, whether collected **digitally** or **digitized later**, and to **data processing outside India** if done for **offering goods or services in India**.
 - It does not apply to **personal data** used for **personal purposes** or data **made public** by the **Data Principal** or under a **legal obligation**.
- **Consent:** **Personal data** can be processed only for a **lawful purpose** with the **consent of the Data Principal**, who may **withdraw consent** anytime. For **children** or **persons with disabilities**, it must be given by a **parent or legal guardian**.
 - Under **Section 9 of the DPDP Act, 2023**, **verifiable parental consent** is mandatory before processing **children's data**, and it **prohibits harmful processing** and **advertising targeting minors under 18 years**.
 - Any user **below the age of 18** has been defined as a **child** under the Act.
 - Consent is **not required** for **legitimate uses** like **government services** or **medical emergencies**.
- **Rights and Duties of Data Principal:** **Data Principals** (individuals whose personal data is being processed) have the right to **access information**, **request correction or deletion**, seek **grievance redressal**, and **nominate a representative** in case of death or incapacity.
 - They must **avoid false complaints or information**, with violations punishable by a **fine up to Rs 10,000**.
- **Obligations of Data Fiduciaries:** **Data Fiduciaries** (entity or organization that **collects, stores, processes, or uses personal data** of an individual) must **ensure data accuracy**, implement **security measures** to prevent breaches, and **notify the DPBI and affected individuals** if a breach occurs.
 - They are also required to **erase personal data** once its purpose is fulfilled and retention is no longer legally necessary.
- **Significant Data Fiduciaries (SDF):** The Central Government may designate certain **Data Fiduciaries** as **SDF** based on factors like **data volume, sensitivity, risk to individual rights**, and threats to **national security, sovereignty, democracy, and public order**.
 - **SDFs** have extra duties, including appointing a **Data Protection Officer**, an **independent auditor**, and conducting **impact assessments**.
- **Exemptions:** Rights of the data principal and obligations of data fiduciaries (**except data security**) will not apply in specified cases, including:
 - For **notified agencies**, in the interest of **security, sovereignty, public order**, etc.
 - For **research**, archiving or statistical purposes.
 - For **start-ups** or other notified categories of **Data Fiduciaries**.
 - To **enforce legal rights and claims**; or **Prevention and investigation of offences**
 - To perform **judicial or regulatory functions**;
 - To process in India **personal data of non-residents** under foreign contract.
- **Data Protection Board of India (DPBI):** The Act provides for the establishment of the **DPBI** by the **Central Government**, with members appointed for **two years** and eligible for **reappointment**.

- Its functions include **monitoring compliance, imposing penalties, handling data breach responses, hearing grievances**, and appeals can be made to the **Telecom Disputes Settlement and Appellate Tribunal**.

AMORPHOPHALLUS TITANUM

The *Amorphophallus titanum*, commonly known as the corpse flower, is one of the most fascinating yet foul-smelling plants on Earth. Native to the rainforests of Sumatra, Indonesia, it captivates scientists and the public alike with its enormous size, strong odour, and incredibly rare blooming cycle.

Inside the World's Largest Inflorescence

Despite its name, the corpse flower is not a single flower but an inflorescence — a collection of many tiny flowers arranged around a tall central spike called a spadix. The outer covering, known as a spathe, opens to reveal a deep maroon interior resembling decaying flesh.

When fully open, the plant can exceed three metres in height, making it the largest unbranched inflorescence in the world. Beneath the surface lies a giant corm, a tuber-like storage organ that can weigh more than 70 kilograms, sustaining the plant through years of dormancy.



The Science Behind the Stench

The corpse flower's notorious smell is a survival strategy. Its odour mimics rotting meat to attract pollinators like carrion beetles and flesh flies. This is achieved through the release of chemicals such as dimethyl trisulfide, isovaleric acid, and trimethylamine — all found in decaying tissue.

During blooming, the plant generates heat through thermogenesis, helping spread the stench over long distances and simulate the warmth of a decomposing carcass.

One of the most remarkable traits of the corpse flower is its infrequent and unpredictable blooming pattern. It can take seven to ten years for a plant to bloom for the first time, and subsequent blooms may occur years apart.

The spectacle lasts only 24 to 48 hours, drawing large crowds to botanical gardens whenever it occurs. Between blooms, the plant produces a single massive leaf resembling a small tree, which helps it gather energy for its next flowering cycle.

Conservation Efforts and Global Significance

The corpse flower is classified as endangered due to habitat loss from deforestation and palm oil cultivation in Sumatra. Botanical institutions such as Kew Gardens in London, The Huntington Library in California, and Bogor Botanical Gardens in Indonesia are actively involved in cultivation and conservation.

These global efforts aim not only to preserve this extraordinary species but also to raise awareness about the urgent need to protect tropical biodiversity.

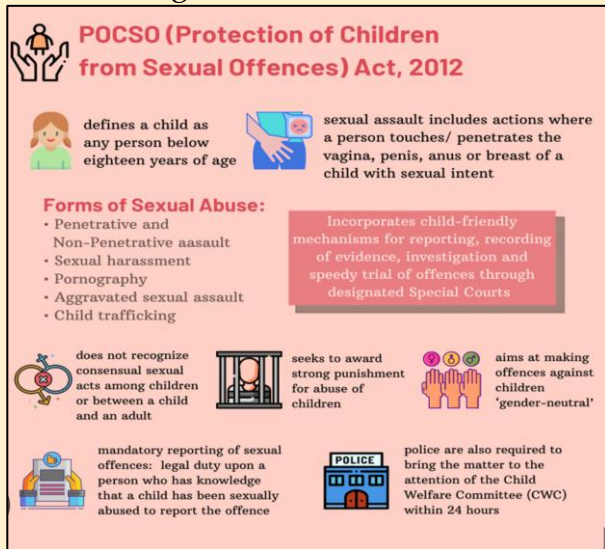
GENDER-NEUTRALITY IN LEGISLATIONS

A Supreme Court notice in a case involving an alleged female perpetrator of penetrative sexual assault has reopened debate on whether the POCSO Act — India's primary child-protection law — is gender-neutral in prosecuting both victims and offenders.

Main Arguments

- **Statutory Interpretation Favors Inclusion**
- Section 3 uses the pronoun "he", but **Section 13(1) of the General Clauses Act (1897)** clarifies that masculine words include females unless context dictates otherwise.

- The broad definition of penetrative sexual assault – including digital, object-based, and oral penetration – clearly enables prosecution of women as potential offenders.
- The inclusion of acts where a person makes a child perform penetration further strengthens this gender-neutral reading.



- **Legislative Intent Unambiguously Confirms Neutrality**
 - Parliamentary records consistently reflect gender neutrality. The **Ministry of Women and Child Development** (Lok Sabha, 20 December 2024) and the **2019 Amendment Bill's Statement of Objects and Reasons** explicitly describe POCSO as gender-neutral.
 - In contrast, Section 63 of the **Bharatiya Nyaya Sanhita (2023)** clearly limits rape to a male perpetrator and female victim. The fact that POCSO avoids such gendered language indicates a **deliberate legislative choice**.
- **Normative and Judicial Logic Require Neutral Protection**
 - The Supreme Court in **Sakshi vs Union of India (2004)** recognised that child sexual abuse spans a wide spectrum beyond penile-vaginal intercourse.

- Abuse stems from **power, trust, and vulnerability**, not gender alone. Survivor accounts and research affirm that women can also perpetrate abuse.
- A gender-specific interpretation would conceal these experiences and deny justice to certain victims, undermining the Act's protective purpose.

Criticisms and Drawbacks Identified

- **Ambiguity from Masculine Pronouns:** Use of "he" in statutory text triggers avoidable interpretive disputes despite the GC Act's clear rule.
- **Inconsistent Official Communication:** Some earlier Parliamentary replies emphasised gender neutrality only for victims, inadvertently creating confusion over perpetrators.
- **Social Biases Limit Recognition:** Deep-rooted notions that women cannot commit sexual offences hinder reporting, investigation, and acknowledgement of abuse against boys.
- **Limited Jurisprudence:** Few POCSO cases have involved female offenders, resulting in sparse judicial precedent and uncertainty in enforcement.
- **Doctrinal Overlap with BNS:** The coexistence of a gender-specific rape definition in the BNS and a gender-neutral penetrative assault definition in POCSO risks interpretive inconsistency in similar factual situations involving minors.

Reforms and Strengthening Measures

- **Clarify Statutory Language:** Amend Section 3 to replace pronouns with gender-neutral terms ("person"), eliminating reliance on interpretive rules.
- **Ensure Consistent Government Messaging:** Uniform Ministry clarifications and FAQs should emphasise that gender neutrality applies to both **victims and perpetrators**.

- **Sensitise Law-Enforcement and Judiciary:** Training modules must address non-traditional abuse patterns and empower officials to handle cases involving female offenders without bias.
- **Improve Research and Documentation:** Systematic studies on abuse by women and non-conforming offenders can inform policy design and correct societal misconceptions.
- **Harmonise POCSO with the BNS:** A clarificatory amendment or authoritative Supreme Court ruling can ensure coherent interpretation between POCSO and BNS, avoiding doctrinal conflict.

The POCSO Act was consciously drafted as a gender-neutral framework to protect all children from diverse forms of sexual harm. Upholding this neutrality best aligns with its text, legislative intent, and protective purpose. Clear statutory language, consistent official communication, and informed judicial interpretation can ensure equal justice for every child, regardless of the gender of the offender.

SIXTH SCHEDULE

The Leh Apex Body (LAB), which is spearheading an agitation over Statehood and Sixth Schedule status for Ladakh, submitted a draft proposal to the Ministry of Home Affairs.

About 6th Schedule:

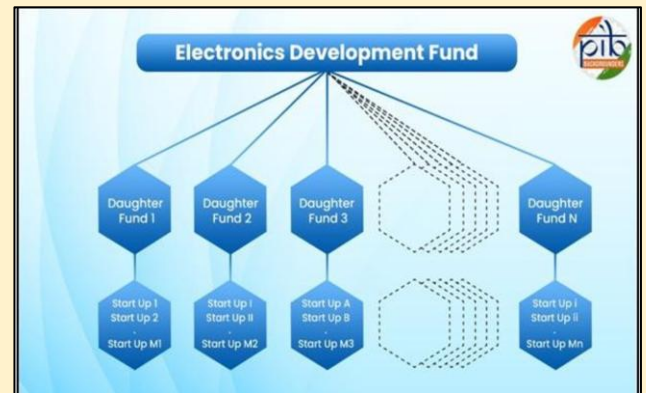
- **Constitutional provision:** The Sixth Schedule of the Constitution, under Article 244(2) and Article 275(1) of the Constitution, is provided for the administration of tribal areas in Assam, Meghalaya, Tripura, and Mizoram.
- **Objectives:**
 - To protect tribal land and resources and prohibits the transfer of such resources to non-tribal individuals or communities.
 - To ensure the tribal communities are not exploited or marginalized by non-tribal populations and that their cultural and social identities are preserved and promoted.
- **Creation of Autonomous districts and autonomous regions:**
 - The tribal areas in the four states of Assam, Meghalaya, Tripura, and Mizoram are to be administered as Autonomous Districts.
 - If there are different Scheduled Tribes in an autonomous district, the Governor can divide the district inhabited by them into Autonomous Regions.
 - The Governor is empowered to organize and reorganize the autonomous districts. He can also increase, decrease the boundaries or alter the name of any autonomous district.
- **Constitution of District Councils and Regional Councils:**
 - There shall be a District Council for each autonomous district consisting of not more than 30 members, of whom not more than four persons shall be nominated by the Governor, and the rest shall be elected on the basis of adult suffrage.
 - There shall be a separate Regional Council for each area constituted an autonomous region.

| Sixth Schedule | |
|--|---|
| Sixth Schedule of the constitution is again in news, after the reconstitution of high-powered committee to examine Ladakh's demand for inclusion in the Sixth Schedule. | |
| Sixth Schedule | Issues |
| <ul style="list-style-type: none"> • Constitutional Provisions- Art 244 of the constitution provides for the sixth schedule of the constitution which is applicable to specific areas of Assam, Meghalaya, Tripura and Mizoram • Purpose- It provides for the formation of autonomous administrative divisions called Autonomous District Councils (ADCs) that have some legislative, judicial and administrative autonomy within a state. • The acts of Parliament or the state legislature do not apply to autonomous districts and autonomous regions, or apply with specified modifications and exceptions | <ul style="list-style-type: none"> • Limited Geographical Coverage- Only limited to certain tribal pockets of Assam, Meghalaya, Tripura and Mizoram • Lack of Effective decentralisation- Several districts have only one autonomous council. For ex- Only one District council for entire Bodo Territorial Area districts • Legislative power of state over autonomous councils- The laws made by the councils require the assent of governor. In case of conflict, the governor's assent prevails. • Financial dependency- Dependent on state govts for funds in addition to the occasional special package from the Centre. Lack of timely constitution of State Finance Commission (SFC) • Corruption, Financial Mismanagement and Lack of skilled professionals |
| Advantages | Way Forward |
| <ul style="list-style-type: none"> • Democratic Devolution of Powers- Sixth Schedule has helped in democratic devolution of powers through the creation of Autonomous District Councils, which have some legislative, judicial and administrative autonomy within a state. • Preservation of Cultural Practices and Customs- Tribal language, customs and practices are protected. For ex- Bodo language of Bodoland were protected. • Protection of tribal Land rights- Autonomous councils the powers to legislate on matters like land, forests, and fisheries. • Grant-in Funds- Finance commission recommends Grant-in aids for sixth scheduled areas • Sustainable Socio-Economic Development- Ensures socio-economic development of a region in consonance with the cardinal virtue of sustainability. | <ul style="list-style-type: none"> • Increase geographical coverage- Constitutional amendment to expand coverage of 6th scheduled areas in other tribal dominated regions which need protection. For ex- Ladakh inclusion in 6th schedule. • Ensuring regular Elections- The state governments must ensure regular, free and fair elections to these autonomous councils. For Ex- Reduce the dominance of Tribal Elites. • Transparency- Transparency in funds, functionaries and functioning of the autonomous district councils must be enhanced for effective socio-economic development. |

- Powers of the District Councils and Regional Councils:
 - The District and Regional councils are empowered to make laws on certain specified matters like lands, management of forest (other than the Reserved Forest), inheritance of property, etc.
 - These councils also empowered to make law for the regulations and control of money-lending or trading by any person other than Scheduled Tribe residents in that Scheduled District.
 - However, all laws made under this provision require the assent of the Governor of the State.
- Administration of justice in autonomous districts and autonomous regions:
 - The District and Regional Councils are empowered to constitute Village and District Council Courts for the trial of suits and cases where all parties to the dispute belong to Scheduled Tribes within the district.
 - The High Courts have jurisdiction over the suits and cases which is specified by the Governor.
 - However, the Council Courts are not given the power to decide cases involving offenses punishable by death or imprisonment for five or more years.
- Exceptions: To autonomous districts and autonomous regions, the acts of Parliament or the state legislature do not apply or apply with specified modifications and exceptions. The Governor can appoint a commission to investigate and provide a report on any issue pertaining to the autonomous districts or regions.

ELECTRONICS DEVELOPMENT FUND

With ₹257.77 crore invested, the Electronics Development Fund has supported 128 startups nationwide.



About Electronics Development Fund (EDF):

- **Launch:** The Government of India had launched the Electronics Development Fund (EDF) on 15 February 2016.
- **Objective:** The Fund aims to promote research, development, and entrepreneurship in the fields of electronics, nano-electronics, and information technology.
- **Acts as a fund of funds:** The EDF functions as a Fund of Funds, designed to invest in professionally managed Daughter Funds such as early-stage angel and venture funds. These Daughter Funds, in turn, provided risk capital to startups and companies developing new technologies.
- **Key objectives of EDF include:**
 - To foster research and development in electronics, nano-electronics, and information technology by supporting market-driven and industry-led innovation.
 - To invest in professionally managed Daughter Funds such as early-stage angel and venture funds that, in turn, provide capital to startups and technology ventures.
 - To nurture entrepreneurship by supporting companies involved in the creation of new products, processes, and technologies within the country.

- To enhance India's capacity for indigenous design and development in the Electronics System Design and Manufacturing (ESDM) sector.
- To generate a strong base of intellectual property in key technology areas and encourage ownership of innovation within India.
- To enable acquisition of foreign technologies and companies where such products are imported in large volumes, promoting self-reliance and reducing import dependence.
- Main Features of EDF:
 - EDF participates in Daughter Funds on a non-exclusive basis, allowing wider collaboration and participation across the industry.
 - The share of EDF in a Daughter Fund's total corpus is determined by market requirements and the capacity of the Investment Manager to administer the fund in accordance with EDF's policy guidelines.
 - EDF generally maintains a minority participation in each Daughter Fund, encouraging greater private investment and professional fund management.
 - Investment Managers of Daughter Funds are given flexibility and autonomy to raise corpus, make investments, and monitor portfolio performance.
 - EDF participation is available across the entire value chain of electronics, information technology, and related ecosystems, ensuring comprehensive sectoral coverage.
 - The final selection of Daughter Funds is carried out after detailed due diligence by the Investment Manager.

- Achievements:
 - The Electronics Development Fund (EDF) has made remarkable progress in nurturing India's innovation ecosystem. EDF has drawn a total of ₹216.33 crore from its contributors, including ₹210.33 crore from MeitY.
 - The supported startups operate in frontier areas such as Internet of Things (IoT), Robotics, Drones, Autonomous Vehicles, HealthTech, Cyber Security, and Artificial Intelligence and Machine Learning, positioning India as a hub for advanced technological innovation.

SENKAKU ISLANDS

A China Coast Guard ship formation passed through the waters of the Senkaku Islands on a "rights enforcement patrol."



About Senkaku Islands:

- Location: The Senkaku Islands are an uninhabited group of islands situated in the East China Sea, approximately 90 nautical miles north from the Yaeyama Islands in Japan's Okinawa Prefecture and 120 nautical miles northeast of the island of Taiwan.
- Different names: They are also known as the Diaoyu Islands in mainland China, the Diaoyutai Islands in Taiwan, and the Pinnacle Islands by other observers.

- **Group of islands:** The islands comprise Uotsuri Island, Kuba Island, Taisho Island (also called Kumeakashima Island), Kitakojima Island, Minamikojima Island, Tobise Island, Okinokitaewa Island, and Okinominamiwa Island.
- **Area:** The total land area of all the islands is roughly 6.3 square kilometers, with the largest, Uotsuri Island, being some 3.6 square kilometers in size.
- **Composition:** They consist of conglomerate sandstone (alternate layers of sandstone and conglomerate in some parts), tuff, andesite, andesitic lava, coral outcroppings elevated above sea level during the Holocene era, and other rocky material.
- **Dispute:** The islands are the focus of a territorial dispute between Japan and China and between Japan and Taiwan.
- **Administration:** They were never administered by any other country before Japan incorporated them into its territory in 1895. Currently, Japan administers and controls the Senkaku Islands as part of the city of Ishigaki in Okinawa Prefecture.

ESCAPADE MISSION

Blue Origin has successfully launched Nasa's highly anticipated Escapade mission to Mars, marking a historic day for the future of multi-planetary exploration.

About Escapade Mission:

- **Nomenclature:** The ESCAPADE stands for Escape and Plasma Acceleration and Dynamics Explorers.
- **Objective:** This mission is the first coordinated multi-spacecraft orbital science mission to Mars. Its twin orbiters are known as Blue and Gold which will take simultaneous observations from different locations around Mars.



- **Part of NASA's program:** It is part of NASA's SIMPLEX (Small Innovative Missions for Planetary Exploration) program.
- **Management:** The ESCAPADE mission is managed by the Space Sciences Laboratory at the University of California, Berkeley, with key partners Rocket Lab, NASA's Goddard Space Flight Center, Embry-Riddle Aeronautical University, Advanced Space LLC, and Blue Origin.
- **Use of 'launch and loiter' strategy:** This mission has chosen 'launch and loiter' strategy. It means the satellites will launch from Earth toward the Lagrange 2 Point (L2), a point in space where the balance of Earth and Sun's gravitational pull ensures that a spacecraft stays put. The spacecraft will stay loiter at L2 until the apt window for Mars travel opens up, and then it will move toward Mars in late 2026.
- **Reveal critical information about Mars:** It will reveal the planet's real-time response to space weather and how the Martian magnetosphere changes over time. These spacecraft will travel to Mars to study the interaction between solar wind, streams of charged particles from the Sun, and the Martian magnetic field.
- **Opens new gateways for future human explorations:** Understanding how solar wind strips Mars of its atmosphere is critical for planetary science and future human exploration.

GAMMA-RAY BURSTS

According to new researches, gamma-ray bursts from black hole 'morsels' could expose quantum gravity.

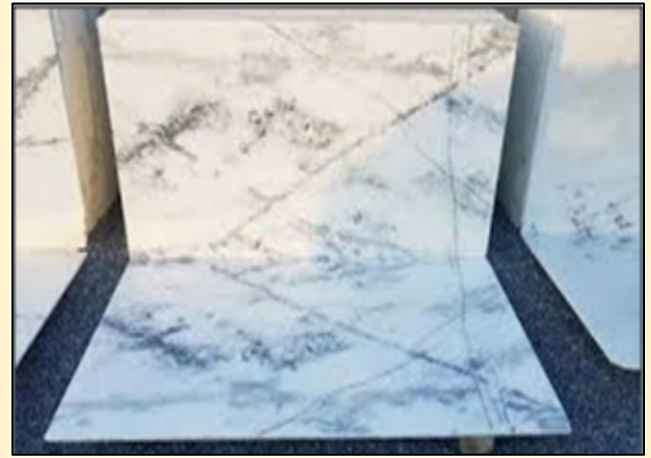


About Gamma-Ray Bursts:

- **Definition:** Gamma-ray bursts are short-lived explosions of gamma rays, the most energetic form of light.
- **Duration:** Lasting from a few milliseconds to several hours, they shine hundreds of times brighter than a typical supernova and about a million trillion times as bright as the Sun.
- **Uniqueness:** Observed in distant galaxies, they are the brightest electromagnetic events known to exist in the universe.
- **Intensity:** It emits more energy in a few seconds than our Sun will emit in its lifetime.
- **Phases:** It has two distinct emission phases- the short-lived prompt emission (the initial burst phase that emits gamma-rays), followed by a long-lived multi-wavelength afterglow phase.
- **Linkage with black holes:** The shortest GRBs likely mark the collision of two compact stellar remnants called neutron stars, and the longest bursts are thought to arise when a massive, rapidly spinning star collapses to form a black hole.
- **Sources of Gamma Ray:** They are produced by the hottest and most energetic objects in the universe, such as neutron stars and pulsars, supernova explosions, and regions around black holes. On Earth, gamma waves are generated by nuclear explosions, lightning, and the less dramatic activity of radioactive decay.

GEOGRAPHICAL INDICATION (GI)

Marble from Ambaji, Gujarat's prominent pilgrimage site and Shaktipeeth, has been awarded the Geographical Indication (GI) tag for its high-quality white stone.



About Ambaji Marble:

- **Nature:** It is a type of marble known for its stunning white appearance and unique natural patterns.
- **Nomenclature:** It is named after the town of Ambaji in the state of Gujarat, where it is predominantly quarried. It is also known as Amba White Marble and Ambe White Marble.
- **Uniqueness:** It is characterized by its pristine white colour, which often features subtle grey or beige veining. It has very long-lasting shine and durability.
- **Distinctive variations:** The veins can vary in intensity, ranging from fine and delicate to bold and pronounced, giving each slab a distinct and individualistic appearance. These variations occur naturally due to the presence of minerals and impurities during the marble formation process.
- **Uses:** The smooth and polished surface of the marble adds to its appeal and sophistication. It is widely used for luxury architectural projects, sculptures, and monuments.

GLOBAL COOLING WATCH 2025

Global Cooling Watch 2025, launched recently at COP30 in Belém, Brazil, finds that cooling demand could more than triple by 2050 under business as usual.

GLOBAL COOLING WATCH 2025 REPORT

- UNEP released the **Global Cooling Watch 2025 report** at COP30 (Belém, Brazil).
- Warns that **cooling demand may triple by 2050**, doubling emissions and stressing power systems.
- **Aim:** Analyse global cooling trends, future emissions, and outline a Sustainable Cooling Pathway for **near-zero emissions and equitable cooling access worldwide**.

About Global Cooling Watch Report:

- **Nature:** The Global Cooling Watch 2025 is UNEP's second global assessment on the environmental, economic, and equity dimensions of cooling, providing the scientific foundation for the Global Cooling Pledge.
- **Publishing agency:** It is published by United Nations Environment Programme (UNEP).
- **Objective:** It aims to analyse global cooling trends, project future emissions, and propose a "Sustainable Cooling Pathway" to achieve near-zero emissions while ensuring equitable access to cooling worldwide.
- **Key highlights of Global Cooling Watch Report 2025:**
 - Global cooling capacity is projected to rise 2.6 times by 2050, driven by rapid urbanization, income growth, and intensifying heatwaves, particularly in developing nations.
 - Cooling demand in Article 5 countries (developing nations) is set to increase fourfold, highlighting a widening divide in energy use and infrastructure readiness between rich and poor economies.

- Global electricity use for cooling may rise from 5,000 TWh (2022) to 18,000 TWh (2050), straining power grids and escalating peak load demands, especially in tropical regions.
- Phasing down high-global-warming refrigerants (HFCs) and adopting low-GWP alternatives could eliminate up to 0.4°C of projected global warming this century.
- So far, 72 nations and 80 organizations have joined the Global Cooling Pledge, collectively aiming for a 68% emission reduction in the cooling sector by 2050.

MEKEDATU PROJECT

The Supreme Court Tamil Nadu's application challenging the proposed construction of a reservoir by Karnataka at Mekedatu across the inter-state river Cauvery as "premature".



About Mekedatu Reservoir Project:

- **Location:** It is a multi-purpose (drinking water and power) project proposed by Karnataka. It is about 90 km away from Bengaluru and 4 km ahead of the border with Tamil Nadu.
- **Nature:** The Mekedatu project is a multipurpose project involving the construction of a balancing reservoir near Kanakapura in Ramanagara district, Karnataka.
- **Nomenclature:** Mekedatu, meaning goat's leap, is a deep gorge situated at the confluence of the rivers Cauvery and its tributary Arkavathi.
- **Objective:** Its primary objectives are to provide drinking water to Bengaluru and neighboring areas, totaling 4.75 TMC, and generate 400 MW of power.
- **Associated river:** The project is proposed at the confluence of the Cauvery River with its tributary Arkavathi.

- **Structure:** The plan involves building a 99-metre-high, 735-metre-long concrete gravity dam, an underground powerhouse, and a water conductor system.
- **Capacity of reservoir:** The expected capacity of the dam is 66,000 TMC (thousand million cubic feet) of water. Once completed, it is expected to supply over 4 TMC of water to Bengaluru city for drinking purposes.
- **Estimated cost:** The estimated cost of completing the project is around Rs 14,000 crores, covering an area of over 5,000 hectares.
- **Concerns:** Tamil Nadu, the lower riparian state has claimed that Mekedatu area represents the last free point in Karnataka from where Cauvery water flows unrestricted into Tamil Nadu, and Mekedatu dam project is an attempt by Karnataka to lock this free flow of water.

EXPORT PROMOTION MISSION

The Union Cabinet has approved the Export Promotion Mission (EPM), a flagship initiative announced in the Union Budget 2025–26 to strengthen India's export competitiveness, particularly for MSMEs.



About Export Promotion Mission (EPM):

- **Built on collaboration:** EPM is anchored in a collaborative framework involving the Department of Commerce, Ministry of MSME, Ministry of Finance, and other key stakeholders including state governments.

- **Objective:** It is a flagship initiative to strengthen India's export competitiveness, particularly for MSMEs, first-time exporters, and labour-intensive sectors. It will provide a comprehensive and digitally driven framework for export promotion.
- **Implementing agency:** The Directorate General of Foreign Trade (DGFT) will act as the implementing agency, with all processes – from application to disbursement – being managed through a dedicated digital platform integrated with existing trade systems.
- **Time Period:** It has a budget outlay of Rs. 25,060 crore for FY 2025–26 to FY 2030–31.
- **Strategic shift:** It marks a strategic shift from multiple fragmented schemes to a single, outcome-based, and adaptive mechanism.
- **Consolidation of related schemes:** It consolidates key export support schemes such as the Interest Equalisation Scheme (IES) and Market Access Initiative (MAI), aligning them with contemporary trade needs.
- **Priority sectors:** Under EPM, priority support will be extended to sectors impacted by recent global tariff escalations, such as textiles, leather, gems & jewellery, engineering goods, and marine products.

Sub-schemes:

- **NIRYAT PROTSAHAN:** It focuses on improving access to affordable trade finance for MSMEs through a range of instruments such as interest subvention, export factoring, collateral guarantees etc.
- **NIRYAT DISHA:** It focuses on non-financial enablers that enhance market readiness and competitiveness such as export quality and compliance support, assistance for international branding, packaging, export warehousing and logistics etc.

NATIONAL SOCIAL ASSISTANCE PROGRAMME (NSAP)

National Social Assistance Programme (NSAP) caters to 3.09 crore beneficiaries with a scheme-wise ceiling/ cap for each State/UT on the number of beneficiaries.



About National Social Assistance Programme (NSAP):

- **Launch:** NSAP was launched on 15th August 1995 as a Centrally Sponsored Scheme.
- **Objective;** NSAP aims to provide support to aged persons, widows, disabled persons and bereaved families on the death of the primary income producer, belonging to below-poverty-line households.
- **Nodal ministry:** NSAP is implemented by the Ministry of Rural Development in collaboration with the state/UT governments.
- **Step towards DPSPs:** NSAP represents a significant step towards the fulfilment of the Directive Principles in Articles 41 and 42 of the Constitution of India.
- **Components:** NSAP has Five Sub-Schemes:
 - **Indira Gandhi National Old Age Pension Scheme (IGNOAPS):** Under the scheme, BPL persons aged 60 years or above are entitled to a monthly pension of Rs. 200/- up to 79 years of age and Rs.500/- thereafter.
 - **Indira Gandhi National Widow Pension Scheme (IGNWPS):** BPL widows aged 40-59 years are entitled to a monthly pension of Rs. 200/-.
 - **Indira Gandhi National Disability Pension Scheme (IGNDPS):** BPL persons aged 18-59 years with severe and multiple disabilities are entitled to a monthly pension of Rs. 200/-.

- **National Family Benefit Scheme (NFBS):** Under the scheme a BPL household is entitled to a lump sum amount of money on the death of a primary breadwinner aged between 18 and 64 years. The amount of assistance is Rs. 10,000/-.
- **Annapurna:** Under the scheme, 10 kg of food grains per month are provided free of cost to those senior citizens who, though eligible, have remained uncovered under NOAPS.

- **Outcomes:** NSAP has helped in reducing poverty, improving living standards, and enhancing the dignity and empowerment of the beneficiaries. It has also contributed to the achievement of the Sustainable Development Goals (SDGs) related to poverty eradication, social protection and inclusion.
- **Selection of beneficiaries:** Gram Panchayats and Municipalities play an active role in identifying eligible beneficiaries under the different NSAP schemes.
- **Disbursement:** Benefits are provided through DBT mode i.e beneficiary's bank or post office savings accounts, or via postal money orders.
- **Monitoring:** States and Union Territories have the flexibility to implement the schemes through any State Government department, but each must appoint a Nodal Secretary at the State level to oversee implementation with relevant departments.

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LICHENS

A team of researchers from Maharaja's College, Kochi, discovers four new species of lichens from Western Ghats.



- The newly identified species are *Parmotrema sahyadricum* (discovered from Wayanad), *Solenopsora rhizomorpha* (from Eravikulam and Mathikettanshola National Parks), *Buelloa ghattensis* (Mathikettanshola National Park) and *Pyxine janakiae* (Mathikettanshola National Park).
- The work that started in 2022 resulted in these discoveries. The team also recorded more than 50 species of lichens, which are new reports to the Kerala part of the Western Ghats.

About Lichens:

- **Definition:** A lichen is a symbiosis between different organisms – a fungus and an algae or cyanobacterium.
- **Underlying basis:** The basis of their relationship is the mutual benefit that they provide each other.
- **Mechanism:** The photosynthetic algae or cyanobacteria form simple carbohydrates that, when excreted, are absorbed by fungi cells and transformed into a different carbohydrate.
- **Fungi contribute to the symbiosis** by absorbing water vapour from the air and by providing much-needed shade for the light-sensitive algae beneath.
- **Structure:** The composite body of a lichen is called a thallus (plural thalli); the body is anchored to its substrate by hairlike growths called rhizines.

- **Distribution:** Lichens are found worldwide and occur in a variety of environmental conditions.
- **Uniqueness:** They are a diverse group of organisms. They can colonize a wide range of surfaces and are frequently found on tree bark, exposed rock, and as a part of biological soil crust.
- **Benefits:** They are a keystone species in many ecosystems. They serve as a food source and habitat for many animals, such as deer, birds, and rodents. They protect trees and rocks from extreme elements such as rain, wind, and snow.
- **Pioneers of Colonization:** Lichens are considered as primary colonisers. These invade bare areas and contribute to soil formation by breaking down rock minerals both physically and chemically and thus creating conditions for other species such as mosses and liverworts to follow.

EXERCISE MALABAR-2025

The participation of INS Sahyadri in Exercise Malabar-2025 reaffirms India's enduring partnership and its commitment to strengthening coordination, enhancing interoperability, and demonstrating a collective resolve to safeguard regional security.



About Exercise Malabar:

- **Origin:** It started as an annual bilateral naval drill between India and the US in 1992.
- **Expansion of membership:** Japan joined in 2015, and Australia participated in Malabar 2020, making it a four-nation exercise under the Quad framework.

- **Location:** It takes place annually in the Indian Ocean and Pacific Oceans alternatively.
- **Evolution:** It has evolved into a key multilateral event aimed at enhancing interoperability, fostering mutual understanding, and addressing shared maritime challenges in the Indian Ocean and Indo-Pacific region.
- **Objective:** It aims to improve interoperability, coordination, and communication, focusing on joint fleet operations, anti-submarine warfare, gunnery drills, and airborne maritime missions.
- **Focus areas:** It highlights the convergence of views among the participating countries on maritime issues and their shared commitment to an open, inclusive Indo-Pacific and a rules-based international order.
- **Strategic Significance:** It strengthens Quad military interoperability, coordinated maritime operations, and freedom of navigation.

2 phases of Exercise Malabar 2025:

- **Harbour Phase:** It will feature operational planning and discussions, alignment on communication protocols, familiarisation visits between participating nations, and sports fixtures.
- **Sea Phase:** Following the harbour phase, all participating units will proceed in this phase, wherein ships and aircraft will take part in naval drills, focusing on joint fleet operations, anti-submarine warfare, gunnery serials and flying operations.

RICIN

The Gujarat Anti-Terrorist Squad has busted a suspected terror syndicate by arresting a 'doctor' with a Chinese MBBS degree, who was allegedly preparing highly-lethal chemical poison, 'Ricin', and whose handler is associated with the Islamic State.



About Ricin:

- **Source:** Ricin is a poison found naturally in castor beans. If castor beans are chewed and swallowed, the ricin that comes out can cause injury. Ricin can also be made from the waste material left over from processing castor beans.
- **Forms:** Ricin can be in the form of a powder, a mist, or a pellet. It can also be dissolved in water or weak acid.
- **Nature:** It is stable under normal conditions. However, it will not work if temperatures are over 80 degrees centigrade (176 degrees Fahrenheit).
- **Toxicity:** It is toxic when inhaled, ingested, or injected. As few as five to ten micrograms per kilogram can be lethal.
- **Mechanism:** Ricin works by getting inside the cells of a person's body and preventing the cells from making the proteins they need. Without the proteins, cells die. Eventually this is harmful to the whole body, and death may occur.
- **Potential of a biological weapon:** It is of special concern because of its potential use as a biological weapon. Accidental exposure to ricin is rare and results primarily from the ingestion of castor seeds.
- **Treatment:** Presently, no antidote exists for ricin. Symptomatic ricin poisoning is treated by providing supportive medical care to minimize the effects of the poisoning.

KHANGCHENDZONGA NATIONAL PARK

The International Union for Conservation of Nature (IUCN) recently rated Khangchendzonga National Park as “good” in its latest global review of natural World Heritage sites. It is the only Indian park to receive this rating.



About Khangchendzonga National Park:

- **Location:** It is located in the north of Sikkim. It lies entirely along the Sikkim-Nepal border.
- **Area:** It encompasses an area covering 1784 sq.km. It exhibits one of the widest altitudinal ranges of any protected area worldwide. The park has an extraordinary vertical sweep of over 7 kilometres (1,220 m to 8,586 m).
- **Part of UNESCO's MAB:** It is a part of the Khangchendzonga Biosphere Reserve (KBR), which is one of the 13 biosphere reserves, based on the UNESCO Man and the Biosphere (MAB) Programme.
- **One of the biodiversity hotspots:** It is a part of one of the 4 biodiversity hotspots in India (the Himalayas global biodiversity hotspot). The other 3 biodiversity hotspots are the Western Ghats, the Indo-Burma region, and the Sundaland region.
- **Uniqueness:** KBR is India's first “mixed” UNESCO World Heritage Site, recognised in 2016 for its combination of natural beauty and cultural importance.

- **Home to third highest mountain peak:** It is home to Mt. Khangchendzonga, the third highest peak in the world.
- **Contains some of the largest glaciers:** It has, in total, 18 glaciers, the largest one being Zemu Glacier, one of the largest glaciers in Asia.
- **Lepcha tribe:** It is one of the very few places where one can find the Lepcha tribal settlements.
- **Flora:** It mostly contains subtropical to alpine vegetation such as oak, fir, birch, maple, and rhododendron.
- **Fauna:** It is home to important flagship species such as the snow leopard, Tibetan wolf, red panda, blue sheep, Himalayan Tahr, and mainland serow, among many. It is home to nearly half of India's bird diversity.

UN WATER CONVENTION

Bangladesh's accession to the UN Water Convention has a ripple effect that could cause problems with India after Bangladesh became the first country in South Asia to join the convention.



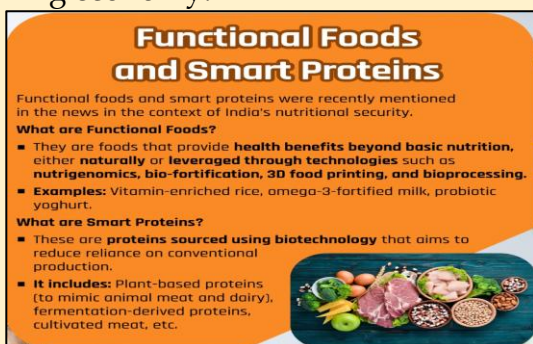
About UN Water Convention:

- **Nomenclature:** It is also known as the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.
- **Adoption:** It was adopted in Helsinki in 1992 and entered into force in 1996.
- **Amendment:** It was originally negotiated as a regional framework for the pan-European region. Following an amendment procedure, since March 2016 all UN Member States can accede to it.

- **Legally binding:** It is a unique legally binding instrument promoting the sustainable management of shared water resources, the implementation of the Sustainable Development Goals, the prevention of conflicts, and the promotion of peace and regional integration.
- **Mandate:** It requires Parties to prevent, control and reduce transboundary impact, use transboundary waters in a reasonable and equitable way and ensure their sustainable management. Parties bordering the same transboundary waters have to cooperate by entering into specific agreements and establishing joint bodies.
- **Does not replace bilateral and multilateral agreements:** As a framework agreement, the Convention does not replace bilateral and multilateral agreements for specific basins or aquifers; instead, it fosters their establishment and implementation, as well as further development.
- **Significance:** It is a powerful tool to promote and operationalize the achievement of the 2030 Agenda for Sustainable Development and its SDGs.

FUNCTIONAL FOODS & SMART PROTEINS

India's food policy is evolving from ensuring *food security* to achieving *nutritional security*. Functional foods and smart proteins represent a technological and sustainable approach to address malnutrition, environmental degradation, and health challenges in a growing economy.



Main Arguments:

1. **Functional Foods:** These are enriched foods designed to enhance health or prevent diseases—examples include vitamin-fortified rice, iron-rich millets, or omega-3 milk. They employ technologies such as *nutrigenomics*, *bio-fortification*, *3D food printing*, and *bioprocessing*. Japan pioneered their regulation in the 1980s.
2. **Smart Proteins:** These include **plant-based**, **fermentation-derived**, and **cultivated meat** sources developed using biotechnology to replace conventional animal-based proteins. Singapore became the first country (2020) to approve *cultivated chicken* for commercial sale.
3. **Need for Nutritional Security:** Despite economic progress, over one-third of Indian children remain stunted. Rising incomes and lifestyle changes are shifting public expectations from calorie sufficiency to nutrient-rich diets. Nutrition-focused policies can bridge the urban-rural divide and reduce non-communicable diseases.
4. **India's Emerging Ecosystem:** Under the *BioE3 policy*, the Department of Biotechnology (DBT) and *BIRAC* support innovation in functional foods and smart proteins. Bio-fortified crops like **zinc-rich rice (IIRR)** and **iron-rich pearl millet (ICRISAT)** mark key progress. Private players such as *Tata Consumer Products* and *ITCare* investing in fortified staples, while startups like *GoodDot* and *Evo Foods* lead the smart protein market.
5. **Global Economic Opportunity:** The global plant-based food market could reach between **\$85–240 billion by 2030**. India's strong agri-base and biotech sector can make it a major exporter while creating employment across agri, processing, and logistics sectors.

Criticisms and Challenges:

1. **Regulatory Ambiguity:** FSSAI lacks a clear framework for *novel foods*, especially cultivated meat and precision-fermented proteins. Absence of regulation risks consumer mistrust and market misuse.
2. **Public Scepticism:** “Lab-made” foods face social and cultural hesitation in India. Misconceptions about safety and taste may limit acceptance.
3. **Technological and Skill Gaps:** Biomanufacturing requires high-end research, infrastructure, and skilled manpower, which remain limited in India’s agri-food sector.
4. **Equity and Market Concentration:** Without proper regulation, large corporations may dominate, marginalising farmers and small-scale producers.
5. **Environmental Sustainability:** Although smart proteins reduce livestock pressure, their energy-intensive production could offset climate gains if not managed sustainably.

Reforms and Policy Measures:

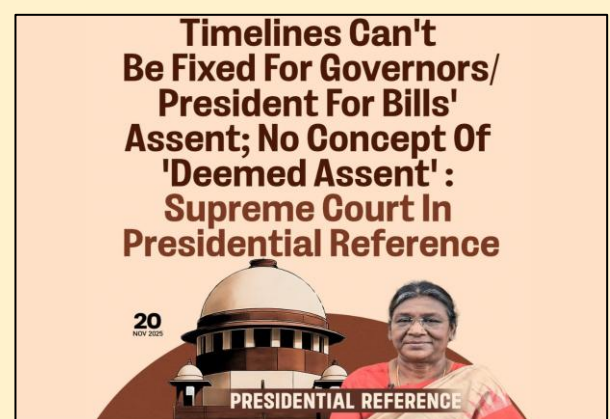
1. **Regulatory Clarity:** A national *novel food framework* under FSSAI should define categories, safety standards, and labelling norms for functional and alternative protein products.
2. **Institutional Coordination:** Ministries of Biotechnology, Agriculture, and Health must align policies for nutritional transformation through integrated food value chains.
3. **Public-Private Partnerships:** To scale biomanufacturing, attract R&D investments, and develop indigenous technologies like *precision fermentation*.
4. **Workforce Upskilling:** Training in biotechnology and food sciences to enable rural participation in new agri-bio value chains.
5. **Public Awareness Campaigns:** Transparent communication, consumer education, and farmer inclusion are essential to build trust and acceptance.

India’s next phase of food transformation must go beyond calorie sufficiency to *nutrition and sustainability*. Functional foods and smart proteins can address malnutrition, climate change, and rural employment together—if guided by sound regulation, innovation, and inclusivity. As Shambhavi Naik notes, biotechnology’s benefits must “extend across society” to ensure a truly equitable nutritional future.

ASSENTING POWERS OF GOVERNOR & PRESIDENT

A 5-Judge bench of the Supreme Court in the **16th Presidential Reference (under Article 143)** held that Court cannot impose any **timelines for decisions of the President and the Governor on granting assent to Bills** under **Articles 200/201** of the Constitution.

- Previously, in April 2025, the Supreme Court prescribed specific time-limits for the Governor and President to act on Bills under Article 200 and 201.
- **Article 143** allows the President to seek the opinion of the Supreme Court on significant legal or factual questions.



Supreme Court’s Stand on 14 Key Questions on Governor-President Powers

Governor’s Options on Bills Under Article 200 – The Court held that a Governor has only three options: Grant assent; Reserve the Bill for the President. Withhold assent by returning the Bill for reconsideration. There is no power to withhold assent indefinitely.

Article 200 – Governor’s Assent to State Bills
Governor’s Discretion Under Article 200 – The Governor is not bound by the Cabinet’s advice when deciding on assent, return, or reservation of Bills. This function involves independent constitutional discretion.

Justiciability of Governor’s Actions – Courts cannot review the merits of the Governor’s decision, but prolonged, unexplained inaction is justiciable. The Court may direct the Governor to act.

Article 361 Immunity Not Absolute – Article 361 protects the individual Governor, not the institutional office. Immunity cannot be used to justify indefinite delays.

Article 361 (Immunity of President and Governors) – Provides personal immunity to the President and Governors from court proceedings during their term, ensuring unhindered functioning in their constitutional roles.

No Court-Imposed Timelines on Governor – Courts cannot prescribe deadlines for Governors to act on Bills. Article 200’s phrase “as soon as possible” does not permit fixed judicial timelines.

President’s Discretion Under Article 201 – The President’s merit-based decision on assent or withholding assent to state Bills is not open to judicial review.

No Timelines for President Either – Courts cannot fix time limits for the President under Article 201.

Article 201 – President’s Assent to Reserved Bills

President Not Required to Seek SC Opinion – The President need not consult the Supreme Court under Article 143 whenever a Bill is reserved for consideration.

Article 143 (Presidential Reference to Supreme Court) – Allows the President to seek the Supreme Court’s advisory opinion on significant questions of law or fact. The Court’s advice is not binding; the President may accept or reject it.

Courts Cannot Review Bills Before They Become Law – Judicial review applies only to laws, not Bills. Courts cannot examine the content or validity of a pending Bill.

Article 142 Cannot Substitute Constitutional Powers – The Supreme Court cannot use Article 142 to create “deemed assent” or otherwise replace the Governor/President’s constitutional role.

No Law Without Governor’s/President’s Assent – A Bill cannot become law unless the Governor or President formally grants assent.

No Answer on Mandatory Referral Under Article 145(3) – The Court declined to answer whether all issues requiring constitutional interpretation must first be tested under Article 145(3).

Article 145(3) (Constitution Bench Requirement) – Mandates that a Bench of at least five judges must hear cases involving substantial questions of constitutional interpretation or any Presidential Reference under Article 143.

Scope of Article 142 – The Court refused a broad interpretation but reiterated that Article 142 cannot override the Constitution, especially requirements like legislative assent.

Article 142 (Complete Justice Provision) – Empowers the Supreme Court to issue any order necessary to ensure complete justice in cases before it.

On Article 131 Jurisdiction – The Court declined to answer whether Article 131 is the exclusive route for resolving Centre-State disputes.

Article 131 (Centre-State Disputes) – Grants the Supreme Court exclusive original jurisdiction to adjudicate legal disputes between the Union and States or among States themselves.

No Judicial Substitution of Executive Power – Reaffirming earlier answers, the Court clarified that judicial powers cannot replace or replicate constitutionally assigned executive functions

About Article 200 and 201

- **Article 200:** When a Bill passed by State Legislature is presented, the Governor has four options:
 - Assent to the Bill.
 - Withhold assent, effectively rejecting the Bill.
 - Return the Bill for reconsideration by the State Legislature.
 - Reserve the Bill for the President's consideration.
- **Article 201:** When a Bill is reserved by a Governor for the consideration of the President, the President shall declare either that he assents to the Bill or that he withholds assent or return the Bill for the consideration of the Legislature.
 - **No timeline is specified** for the President to decide on reserved Bills.

INDIA -BHUTAN

India-Bhutan relations stand as a rare example of stability and mutual trust in South Asia. Prime Minister Narendra Modi's 2025 visit to Bhutan reaffirms the deep political, cultural, and strategic partnership that continues to thrive despite vast asymmetry in size and power.

- In a region often marked by volatility and mistrust, this bilateral relationship demonstrates how restraint, respect, and shared prosperity can sustain peace in a challenging neighbourhood.



Main Arguments

1. Historical Foundations

- The 1949 *Treaty of Friendship* formalised relations, where Bhutan agreed to be "guided by India" in external affairs while India assured non-interference in internal matters.
- This arrangement, inherited from the colonial protectorate framework, evolved uniquely due to mutual maturity and strategic foresight.
- India supported Bhutan's early institution-building, administrative training, and defence organisation, ensuring stability and trust.
- Hydropower and infrastructure cooperation since the 1960s became symbols of partnership-driven development.

2. Modernisation and Treaty Revision (2007)

- Changing global and regional conditions, Bhutan's democratic transition, and its expanding global engagement demanded a modern framework.
- The 2007 *revised treaty* replaced the "guided by India" clause with "mutual respect for each other's independence, sovereignty, and territorial integrity."
- This marked Bhutan's transition from dependency to partnership, reflecting Delhi's strategic confidence and Thimphu's political prudence.
- Both nations agreed not to allow their territories to be used against each other, strengthening regional security trust.

3. Political and Democratic Maturity

- King Jigme Singye Wangchuck (K-4) oversaw Bhutan's peaceful transition from monarchy to *constitutional democracy* in 2006.
- India's support during this democratic shift highlighted its respect for Bhutan's internal evolution.

- The current monarch, King Jigme Khesar Namgyel Wangchuck (K-5), continues to uphold this equilibrium of tradition and democracy.
- India-Bhutan coordination remains robust through periodic high-level visits, development assistance, and people-to-people ties.

4. Economic and Developmental Partnership

- **Hydropower Cooperation:** The foundation of the relationship – Bhutan’s hydropower exports provide 40% of its revenue and meet India’s energy needs.
- **Diversification Efforts:** New initiatives include joint ventures in digital economy, tourism, skill development, and green infrastructure.
- **Institutional Support:** India provides financial aid through the Five-Year Plan framework, with the 13th Plan emphasising sustainable and inclusive growth.
- **Private and Tech Collaboration:** Indian firms and digital projects are fostering deeper economic integration.

5. Geostrategic and Security Dimensions

- Bhutan’s geographic position between India and China makes it strategically vital.
- The *Doklam plateau standoff (2017)* underscored shared security interests and coordination in border management.
- Bhutan’s cautious diplomacy seeks peaceful resolution with China without compromising its sovereignty or India’s core security interests.
- Regional cooperation under initiatives like BIMSTEC and BBIN further align Thimphu with India’s *Neighbourhood First* and *Act East* policies.

6. Cultural and Civilisational Linkages

- Shared Buddhist heritage, linguistic ties, and spiritual values form the emotional foundation of relations.
- The 2025 exposition of Buddha relics from Piprahwa in Bhutan reaffirmed ancient civilisational bonds.
- Educational exchanges, cultural festivals, and tourism add depth to people-to-people connections.

7. Lessons for Regional Diplomacy

- India-Bhutan relations show how *asymmetric partnerships* can be balanced through trust and transparency.
- The “Bhutan model” emphasises sovereign equality, local participation, and patient diplomacy – valuable for India’s wider neighbourhood policy.
- It demonstrates that long-term engagement, not transactional politics, ensures regional stability.

Criticisms and Challenges

1. **Economic Dependence:** Bhutan’s overreliance on hydropower and aid from India may limit diversification and economic resilience.
2. **Environmental Concerns:** Large hydropower projects risk ecological degradation and displacement in Bhutan’s fragile Himalayan ecosystem.
3. **China Factor:** Bhutan’s boundary talks with China could affect India’s strategic calculations if not handled sensitively.
4. **Public Perception:** The perception of India’s “big brother” approach in the region must be avoided through constant dialogue and equality-based engagement.
5. **Youth Aspirations and Migration:** Rising expectations for jobs and education require collaborative human capital investments beyond traditional aid.

Reforms and Policy Measures

1. **Economic Diversification:** Promote cooperation in sectors such as IT, digital trade, organic farming, and renewable energy beyond hydropower.
2. **Connectivity and Infrastructure:** Develop cross-border railway and road projects like *Kokrajhar–Gelephu* to integrate Bhutan into regional value chains.
3. **Environmental Partnership:** Launch joint Himalayan sustainability missions focusing on hydropower efficiency, climate adaptation, and biodiversity conservation.
4. **Institutional Coordination:** Establish an *India–Bhutan Development and Security Council* for continuous policy dialogue and implementation.
5. **Cultural and Educational Diplomacy:** Expand scholarships, joint research, and Buddhist tourism circuits to strengthen soft power and mutual understanding.
6. **Strategic Dialogue:** Continue defence and border cooperation through annual security consultations to ensure preparedness amid regional uncertainties.

India–Bhutan relations exemplify the essence of *trust-based regionalism* in South Asia. Their steady evolution from a protectorate framework to an equal partnership underscores the importance of mutual respect, democratic adaptation, and shared development.

- As China's presence grows in the Himalayas, India's approach in Bhutan—marked by restraint, cooperation, and civilisational depth—offers a replicable model for engaging other neighbours.
- The future of India's "Neighbourhood First" policy lies in sustaining such balanced partnerships that combine strategic prudence with human-centric diplomacy.

NATIONAL COMPANY LAW APPELLATE TRIBUNAL (NCLAT)

Supreme Court said that CJI must deal with claim that HC judge approached National Company Law Appellate Tribunal (NCLAT) member on order.



About National Company Law Appellate Tribunal (NCLAT):

- **Nature:** The NCLAT is a quasi-judicial body constituted under Section 410 of the Companies Act, 2013. It was established to hear appeals against the decisions of the National Company Law Tribunal (NCLT), functioning since 1st June 2016.
- **Objective:** Its main objective is to promote timely corporate dispute resolution, ensure transparency, and improve efficiency in insolvency and corporate governance matters.
- **Functions:**
 - Hearing appeals against orders of NCLT under Section 61 of IBC.
 - Hearing appeals against orders of the Insolvency and Bankruptcy Board of India (IBBI) under Sections 202 and 211 of IBC.
 - Hearing appeals against orders of the Competition Commission of India (CCI).
 - Hearing appeals related to the National Financial Reporting Authority (NFRA).
 - Giving advisory opinions when legal issues are referred by the President of India.
- **Headquarters:** Its headquarters is located in New Delhi.
- **Composition:** It includes a Chairperson, along with Judicial and Technical Members, all appointed by the Central Government based on expertise in law, finance, accountancy, and administration.

- **Regulation:** It can regulate its own procedure and possesses powers equivalent to a civil court under the Civil Procedure Code, 1908.
- **Powers:** It can summon witnesses, receive affidavits, enforce production of documents, and issue commissions. Orders passed by NCLAT are enforceable like civil court decrees.
- **Appeals:** Appeals against NCLAT orders can be filed in the Supreme Court of India.
- **Exceptions:** Civil courts have no jurisdiction over matters within the purview of NCLAT. No court or authority can grant injunctions against any action taken by NCLAT under its legal authority.
- **Disposal of appeals:** NCLAT is required to dispose of appeals within six months from the date of receipt to ensure swift resolution.

THE NATIONAL ACTION PLAN ON ANTIMICROBIAL RESISTANCE(2025-29)

India has launched a strengthened national strategy to tackle the growing threat of antimicrobial resistance, marking a renewed commitment to protecting public health. The National Action Plan on Antimicrobial Resistance(2025-29) was released in New Delhi to coincide with World AMR Awareness Week, building on lessons from the first plan introduced in 2017.

Key Features of NAP-AMR 2.0

The updated plan adopts a comprehensive One Health approach, integrating efforts across human health, animal health, agriculture and the environment. More than 20 ministries have outlined detailed responsibilities, budgets and timelines to ensure coordinated implementation. The initiative aims to close gaps observed in the earlier framework, particularly around intersectoral coordination and stakeholder accountability.

Health Risks and Rationale for Action

Antimicrobial resistance continues to compromise critical medical procedures, including surgeries and cancer treatments. Overuse and misuse of antibiotics in clinical, veterinary and agricultural settings have accelerated the spread of resistant infections. The new plan emphasises urgent corrective measures to manage this escalating threat and preserve the efficacy of existing treatments.



Strategic Objectives and Activities

NAP-AMR 2.0 lays out six core objectives covering awareness, surveillance, infection control, antimicrobial stewardship, research and governance. Activities include strengthening laboratory networks, expanding monitoring of antibiotic residues, improving infection prevention systems, ensuring responsible antibiotic use, and prioritising research into new diagnostics and therapies. Enhanced collaboration across agencies is central to the plan.

Implementation and Multisectoral Engagement

Each participating ministry will now prepare detailed implementation roadmaps. The plan mandates collaboration with private healthcare providers, industry groups, academic institutions, cooperatives, NGOs and international partners. The new framework seeks to strengthen governance and monitoring mechanisms, ensuring sustained national action against antimicrobial resistance over the next five years.

LUPEX MISSION

A Japanese delegation recently held discussions with the senior leadership of the ISRO and visited the facilities of the space agency to review the status of the LuPEX mission.



About LuPEX Mission:

- Collaborating agencies: It is a collaborative mission between Indian Space Research Organisation (ISRO) and Japan Aerospace Exploration Agency (JAXA).
- Objective: It aims to explore the moon's southern polar region, investigating the presence of water and other elements, potentially in the form of surface ice.
- Scheduled launch: The mission is scheduled to launch in 2025.
- Uniqueness: The LUPEX will be a precursor to the ISRO's lunar sample return mission and for sending the first Indian to the moon by 2040.
- Launch vehicles: The mission will be launched by JAXA onboard its H3-24L launch vehicle, carrying the ISRO-made lunar lander, which will carry the MHI, Japan-made lunar rover.
- Focus on lunar night survival: It aims to showcase innovative surface exploration technologies. The special focus is on vehicular transport and lunar night survival.
- Functions of rover: The rover will drive on its own to search for areas where water is likely to be present and sample the soil by digging into the ground with a drill. It will be equipped with instruments for measuring the water content of regolith (lunar sand), drilling, and sampling.

- Instruments of other space agencies carried: The rover will carry not only the instruments of ISRO and JAXA but also those of the US space agency NASA and the European Space Agency (ESA).

LABOUR CODES

The four labour codes—Wages, Industrial Relations, Social Security, and Occupational Safety—have come into force, replacing 29 laws. They aim to simplify compliance, expand social security, formalise employment, and reshape India's labour market amid mixed reactions from firms and unions.



Main Arguments / Key Features

Code on Wages, 2019

- Merges laws on minimum wages, wage payment, bonus and remuneration.
- "Wages" now must constitute $\geq 50\%$ of total remuneration; boosts PF/ESIC contributions, enhancing post-retirement benefits.
- Centre can set a national floor wage; states cannot go below it.
- Mandatory appointment letters strengthen formalisation; aligns with ILO recommendations.

Industrial Relations Code, 2020

- Firms with up to 299 workers can retrench without government approval (earlier 100), increasing flexibility and possibly boosting manufacturing competitiveness.
- Mandatory 14-day strike notice across all industries curbs flash strikes.

- Promotes ease of doing business by rationalising dispute resolution and enabling fixed-term employment.

Social Security Code, 2020

- For the first time brings gig/platform workers and aggregators within legal social security.
- Aggregators to contribute 1-2% of turnover for worker welfare.
- FTEs eligible for gratuity after one year (earlier five).
- Expands benefits such as PF, ESIC, maternity benefits; aligns with NITI Aayog's gig workforce projections (23.5 million by 2030).

Occupational Safety, Health & Working Conditions Code, 2020

- Consolidates 13+ laws on workplace safety, migrant labour and contract labour.
- Allows women to work night shifts with consent and mandatory safety protections (transport, CCTV, security).
- Weekly cap of 48 hours; overtime at double wages.
- Covers audiovisual and digital media workers, plantation workers, and beedi/cigar workers.

Criticisms / Drawbacks

- **Job security concerns:** Raising the retrenchment threshold may increase precarious employment and limit workers' ability to negotiate.
- **Union rights diluted:** Mandatory strike notice, tighter union registration rules and expanded powers of registrars may reduce effective collective bargaining.
- **MSME compliance burden:** Higher PF/ESIC contributions raise cost pressures for small and unorganised firms, risking informalisation.
- **Centralisation concerns:** A nationwide floor wage may constrain states with diverse living standards.
- **Weak implementation capacity:** Labour being a concurrent subject, state-level readiness varies significantly – impacting consistency and enforcement.
-

- **Trade union criticism:** The codes are viewed as “negating rights secured over 150 years” and weakening democratic labour institutions

Reforms & Way Forward

1. **Balance flexibility with protection:** Introduce sector-specific retrenchment thresholds, strengthen severance norms and promote “flexicurity” models combining flexibility with robust social security.
2. **Strengthen social security delivery:** Operationalise gig/platform welfare funds with real-time digital tracking. Integrate e-Shram with PF/ESIC for portability of benefits, especially for migrant workers.
3. **Improve implementation capacity:** Expand inspectorate infrastructure, deploy digital inspection systems and multilingual worker awareness campaigns. Offer phased compliance and financial support for MSMEs.
4. **Enhance collective bargaining:** Ensure transparent and predictable union registration rules and revive tripartite consultations as recommended by ILO.
5. **Clarify provisions and reduce litigation:** Provide detailed rules on aggregator contributions, FTE benefits and wage components to ensure interpretational clarity and uniform adoption.

The labour codes represent a significant consolidation of India's labour laws aimed at improving formalisation, social security and ease of doing business. However, fears of weakened labour rights, uneven state capacity and increased precarity must be addressed through calibrated reforms, strong enforcement frameworks and genuine social dialogue to ensure inclusive and equitable labour governance.

DORJILUNG HYDROELECTRIC POWER PROJECT

Tata Power Company Ltd said it has signed commercial agreements with Druk Green Power Corporation Ltd (DGPC) for the development of Dorjilung hydroelectric power project in Bhutan.



About Dorjilung Hydroelectric Power Project:

- **Location:** It is a planned 1125 MW run-of-river project situated in the eastern Lhuentse and Mongar Districts of Bhutan.
- **Associated river:** It will be built on the Kurichhu River, a tributary of the Drangmechhu that flows into India.
- **Partnership:** Bhutan's Druk Green Power Corporation (DGPC) has signed an MoU with Tata Power Company Limited for the joint development of the project.
- **Use of SPV:** The Project will be implemented through a Special Purpose Vehicle (SPV), with DGPC and Tata Power holding equity shares of 60% and 40%, respectively.
- **Completion of the project:** The project is expected to be commissioned by early 2032.
- **Role of world bank:** The project is financed by the World Bank.
- **Power capacity:** At a height of approximately 139.5 m, the concrete-gravity dam channels nearly 287 m³/s through a 15 km headrace tunnel to an underground powerhouse housing six Francis turbines, designed to generate around 4.5 terawatt-hours (TWh) annually.
- **Estimated cost:** At a total project cost of ₹13,100 crore, Dorjilung will be Bhutan's second-largest hydropower project, and the largest Public-Private Partnership (PPP) hydro project ever undertaken in the country.

BRIHADEESWARAR TEMPLE

Marking World Heritage Week, the Archaeological Survey of India (ASI) organised a heritage walk and clean-up drive at the Brihadeeswarar Temple in Thanjavur.



About Brihadeeswarar Temple:

- **Location:** It is a Hindu temple dedicated to Shiva located in Thanjavur, Tamil Nadu.
- **Other names:** It is also known as Periya Kovil, RajaRajeswara Temple and Rajarajesvaram.
- **Dravidian temple:** It is one of the largest temples in India and is an example of Dravidian architecture during the Chola period.
- **Construction:** It was built by emperor Raja Raja Chola I and completed in 1010 AD.
- **Uniqueness:** It is part of the UNESCO World Heritage Site known as the "Great Living Chola Temples", with the other two being the Brihadeeswarar Temple, Gangaikonda Cholapuram and Airavatesvara temple.
- **Cultural Significance:** It has a repository of Tamil inscriptions detailing rituals, gifts, and the temple's construction overseen by Raja Raja Chola himself.
- **Use of granite:** The entire temple structure is made out of granite.
- **Structure:** The vimanam (temple tower) is 216 ft (66 m) high and is the tallest in the world. The Kumbham (the apex or the bulbous structure on the top) of the temple is carved out of a single rock and weighs around 80 tons.

- **Area:** The temple complex spans over 40 acres and is decorated with masses of sculptures and inscriptions that spotlight the era's devotion and craftsmanship.
- **Nandi statue at entrance:** There is a big statue of Nandi (sacred bull), carved out of a single rock measuring about 16 ft (4.9 m) long and 13 ft (4.0 m) high at the entrance.

AFRICAN GREY PARROT

Recently, RTI responses revealed that State Forest Departments across India have no record of African grey parrot trade.

About African Grey Parrot:

- **Nature:** It is a medium-sized, dusty-looking grey bird.
- **Scientific Name:** Its scientific name is *Psittacus Erithacus*.
- **Uniqueness:** It is one of the most talented talking/mimicking birds on the planet.

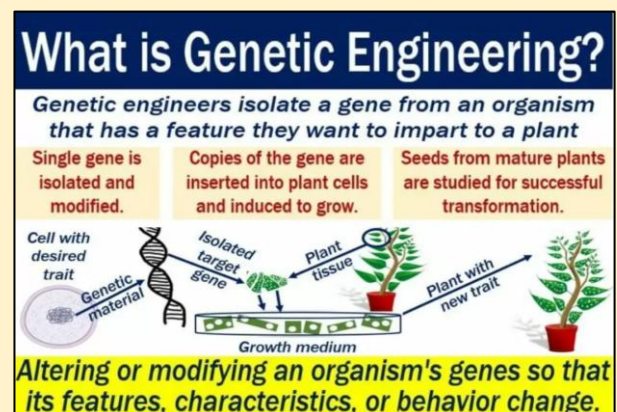


- **Distribution:** African grey parrots are native to West and Central Africa. They are kept as pets in many parts of the world, and their popularity dates back centuries.
- **Habitat:** They inhabit different types of lowland forest, including rainforest, woodlands, and wooded savannah. They can be seen along forest edges and in clearings as well, and sometimes feeding in gardens and cultivated fields.

- **Lifespan:** Usually, they live for more than 50 years.
- **Features:** It is a mottled grey-coloured, medium-sized parrot. It has a large black bill and white mask enclosing a yellow eye and has a striking red vent and tail.
- **Difference between males and females:** Females have a pale grey crown with dark gray edges, a grey body, and scarlet tail feathers. The male looks similar to the female but becomes darker with age.
- **Conservation Status:**
 - It is classified as 'Endangered' under the IUCN Red List.
 - It is listed under Appendix I of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES).

WHY INDIA NEEDS GENETIC ENGINEERING

India's projected **1.7 billion population by 2060**, coupled with shrinking agricultural land, water stress, and climate volatility, makes genome editing and modern biotechnology essential tools to secure long-term food supply, nutrition, and farmer resilience.



Main Arguments: Why India Needs Genetic Engineering?

- **Productivity Plateau:** India's crop yields have stagnated, and genome-edited varieties can reverse this trend at a time when the country spends **\$20 billion annually on edible oil imports**.

- **Climate Resilience:** CRISPR-edited drought-, heat-, and salinity-tolerant lines like the improved *Samba Mahsuri* offer crucial protection amid rising climate shocks.
- **Nutrition Security:** Genome editing can enhance micronutrient density in staples, essential when **one-third of Indian children remain stunted** due to persistent malnutrition.
- **Indigenous Technology:** ICAR's new **TnpB-based editing tool** strengthens India's seed sovereignty by reducing dependence on CRISPR technologies controlled by foreign institutions.
- **Resource Efficiency:** GE crops improve water- and nutrient-use efficiency – critical as India is expected to enter **severe water scarcity (<1,000 m³ per capita)** by 2050.

Challenges Hindering Adoption

- **Regulatory Uncertainty:** Overlapping GM-GE rules and prolonged approval timelines discourage researchers and delay deployment of safe, non-transgenic innovations.
- **Activist Opposition:** Ideological resistance masquerading as environmentalism fuels distrust and blocked earlier breakthroughs like GM mustard.
- **Perceived Monopolies:** Concerns over corporate control persist even when the technologies (like TnpB) are public-sector and indigenously developed.
- **Information Deficit:** Low public awareness and circulating misinformation create political hesitancy and slow acceptance of GE crops.
- **Scientific Demoralisation:** Two decades since **Bt Bollgard-II (2006)** without new approvals have weakened morale among agricultural scientists and stalled innovation pipelines.

Way Forward

- **Regulatory Clarity:** India needs a differentiated, science-based framework – similar to Japan and Argentina – that fast-tracks approvals for non-transgenic genome-edited crops.

- **Public-Sector Leadership:** Greater ICAR funding and open-licensing models can ensure that genome-edited seeds remain affordable for small and marginal farmers.
- **Field Validation:** Large-scale demonstrations through Krishi Vigyan Kendras must highlight real-world improvements in yields, stress tolerance, and reduced chemical use.
- **Scientific Literacy:** A national GE awareness mission should counter misinformation through transparent communication involving universities, panchayats, and extension workers.
- **Innovation Ecosystem:** An integrated agri-biotech corridor connecting start-ups, ICAR labs, incubators, and seed companies can accelerate safe, equitable dissemination.

India's future food and nutrition security will depend on its readiness to embrace safe, indigenous, precision breeding technologies. Rejecting genome editing due to misplaced fears risks deepening rural distress, increasing import dependence, and weakening the scientific foundations of Indian agriculture.

SANGAI FESTIVAL

Recently, the Sangai Festival in Manipur began amid a protest by internally displaced persons (IDPs) and members of NGOs, impacting attendance.



About Sangai Festival:

- **Location:** It is celebrated in the state of Manipur.
- **Nomenclature:** It is an annual festival, started in the year 2010, which is named after the state animal, the Sangai.

- **Objective:** It aims to showcase Manipur's rich cultural heritage and indigenous tradition. The festival promotes the cultural extravaganza of Manipur through music, dance and various native art forms that are part of the Manipuri tribes and people.
- **Use of Ras Leela:** The state's classical dance form, 'Ras Leela,' renowned for its distinctiveness, takes centre stage during the festival.
- **Theme:** The themes of 2025 is "Where blossoms breathe harmony."

About Sangai:

- **Endemic to Manipur:** It is a subspecies of Eld's deer endemic to Manipur. It also has immense cultural relevance to Manipur.
- **Distribution:** It is found only in Keibul Lamjao National Park – the largest single mass of phumdi is in the Loktak Lake – in Manipur's Bishnupur district.
- **Appearance:** It is a medium-sized deer, with uniquely distinctive antlers, with extremely long brow tine, which form the main beam.
- **Uniqueness:** The animal's coat is a dark reddish brown during winter months and it becomes a much lighter shade in summer.
- **Also known as dancing deer:** It walks on the hind surface of its pasterns with mincing and hops over floating foliage. Therefore, it also called the dancing deer.
- **Threat:** While the habitats have been encroached for grazing, cultivation, and fish farming, the animals are highly threatened by a hydro-electric project in the lake.
- **Conservation status**
 - CITES: Appendix I
 - IUCN: Critically Endangered
 - Wildlife Protection Act 1972: Schedule-1

SUKHNA WILDLIFE SANCTUARY

Recently, 9-day wildlife census began in Sukhna wildlife sanctuary.

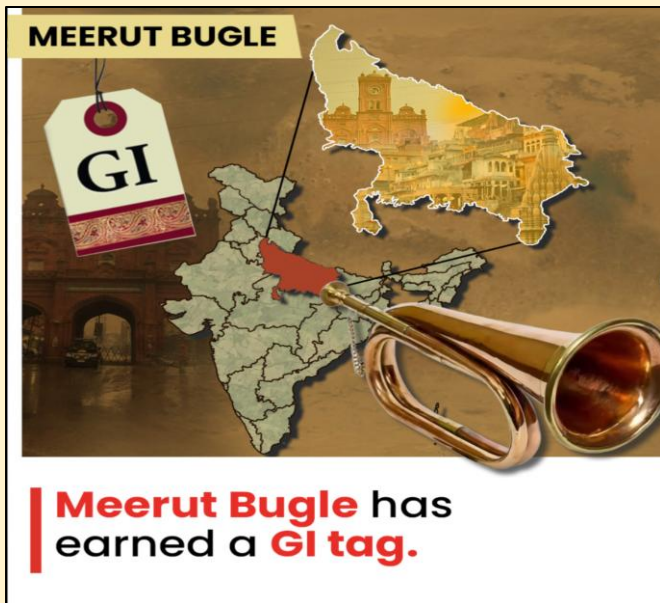


About Sukhna Wildlife Sanctuary:

- **Location:** It is a protected area located in Chandigarh, near the famous Sukhna Lake at the foothills of the Shivalik range.
- **History:** The lake was created by the architect Le Corbusier in 1958 by diverting the Sukhna Choe, a seasonal stream that flows down from the Shivalik hills. The sanctuary was developed as a result of afforestation done for soil conservation around the lake.
- **Area:** Spreading over an area of over 25.98 square km (about 6420 acres), Sukhna Wildlife Sanctuary was established in 1998.
- **Structure:** The place is quite unstable geographically and becomes prone to soil erosion by surface runoff during rains. It has sandy soil of Shivalik with pockets of clay embedded at places.
- **Vegetation:** It is characterized by a mix of forests, grasslands, and wetlands, with the Sukhna Lake forming an important part of the ecosystem.
- **Flora:** The common flora of the sanctuary includes Khair, Phulai, Kikar, Shisham, Moonj, Amaltas, Jhingan, Amla, Rati, Vasaka, and many more.
- **Fauna:** Squirrel, Common-Mongoose, Indian Hare, Porcupine, Jungle Cat, Jackal, Wild boar, etc, are the mammals found in the sanctuary. Peacock, Hill myna, Jungle crow, Black drongo, Parrots, Doves, and others are the common birds of this region.

MEERUT BUGLE

Meerut bugle, commonly used in military parades, earns GI tag.



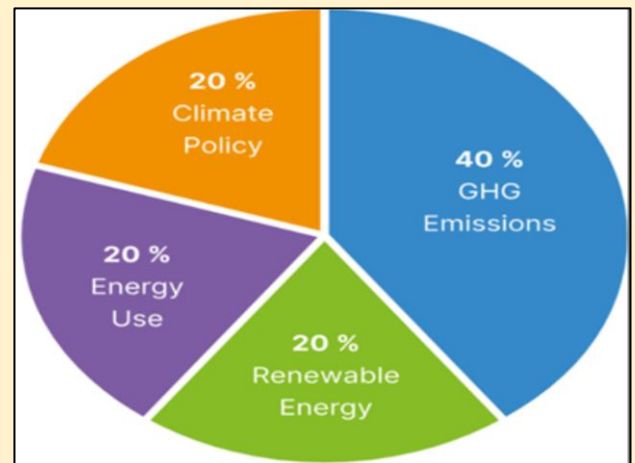
About Meerut Bugle:

- **Nature:** The Meerut bugle is a brass wind instrument used in military drills, parades, ceremonies, and signals across the Army, paramilitary forces, and police units in India.
- **Uses:** It is used in the drills of armed forces and in wars, ceremonies, and parades for decades. It is also used to signal the start of movements or events, and carries a deep historical imprint.
- **Origin:** The bugle-making in Meerut dates back to the late 19th century. The bugle's story is closely linked to the development of India's military traditions.
- **Meerut as centre of bugle making:** Over time, the craft of bugle making has evolved into a specialised local industry, making Meerut one of India's main centres for handmade bugles.
- **Making:** The making of a bugle is entirely manual. A brass sheet is cut and hammered into shape using a specialised die. The sheet is moulded and processed through several stages to achieve a smooth finish, and finally fitted with a mouthpiece.

- **Significance:** It represents a living military heritage linking colonial-era communication tools to modern ceremonial functions.
- **Types of bugles manufactured:**
 - Copper bugle: the highest in demand across India.
 - Gold-finish bugle: featuring a polished gold-like surface.
 - Silver-finish bugle: Produced on request.

CLIMATE CHANGE PERFORMANCE INDEX (CCPI)

India slipped 13 ranks to figure at the 23rd position in the latest Climate Change Performance Index (CCPI).



About Climate Change Performance Index (CCPI):

- **Publishing agency:** It is published by think tanks German watch, New Climate Institute, and Climate Action Network International. It was first published in 2005.
- **Objective:** It tracks the progress of the world's largest emitters in terms of emissions, renewables, and climate policy.
- **Assessment in 4 categories:** The performance of countries is assessed in four categories with 14 indicators- Greenhouse Gas Emissions (40% of the overall score), Renewable Energy (20%), Energy Use (20%), and Climate Policy (20%).

- Key highlights of the Climate Change Performance Index 2026:
 - Denmark, the UK and Morocco took the lead in this year's CCPI.
 - China (54th), Russia (64th), the US (65th) and Saudi Arabia (67th) are the G20's worst-performing countries, receiving an overall very low score.
 - India fell 13 places from its previous ranking of 10th to stand at 23rd in the latest global climate change performance with a score of 61.31.
 - It's the biggest fall of India on the CCPI ranking in the recent past even as it remained in the top 10 high-performing countries for six years in a row till 2024. India, which ranked 31st in 2014, entered the top 10 list for the first time in 2019.
 - It also labelled India among the biggest producers of oil, gas, and coal worldwide, leading it to fall from a 'high performer' to a 'medium' one in this year's CCPI.

BIRSA 101

Union Minister Dr. Jitendra Singh launches India's first indigenous "CRISPR" based gene therapy named 'BIRSA 101' for Sick Cell Disease.



About BIRSA 101:

- Nomenclature: The therapy has been named Birsa-101 in honour of the tribal leader Birsa Munda.
- Uniqueness: It is India's first indigenous CRISPR-based gene therapy, designed to treat Sick Cell Disease (SCD).

- Development: It is developed by the CSIR-Institute of Genomics and Integrative Biology (IGIB) in partnership with the Serum Institute of India (SIPL) for technology transfer, scale-up, and affordable national deployment.
- Objective: It aims to support India's mission of becoming Sick Cell-Free by 2047, as envisioned by the Prime Minister.
- Use of CRISPR Technology: It utilizes the CRISPR-Cas9 gene-editing tool to correct the genetic mutation causing Sick Cell Disease.
- Affordable: It is priced significantly lower than global CRISPR treatments, making it more accessible to the poorest populations.
- Mechanism: It edits defective genes inside the patient's cells and corrects the mutation responsible for producing sickle-shaped red blood cells, thereby enabling normal haemoglobin production.
- One time infusion: The therapy has to be given as a one-time infusion, after which the body should start producing normal red blood cells instead of sickle-shaped ones.

INDIRA GANDHI PEACE PRIZE

Recently, the Indira Gandhi Prize for Peace, Disarmament and Development for 2024 was presented to Michelle Bachelet, the first and only woman President of Chile.



About Indira Gandhi Peace Prize:

- **Establishment:** It was instituted in the memory of the former Prime Minister Indira Gandhi by a trust in her name in 1986.
- **Nomenclature:** It is also known as the Indira Gandhi Prize for Peace, Disarmament, and Development,
- **Composition:** It consists of a monetary award of 25 lakh rupees along with a citation.
- **Significance:** The prize is awarded annually and is considered one of the highest honours in the field of peace and development.
- **Eligibility criteria:** It is awarded annually to a person or organization without any distinction of nationality, race or religion, in recognition of creative efforts towards:
 - Promoting international peace and disarmament, racial equality, and goodwill and harmony among nations;
 - Securing economic co-operation and promoting a new international economic order;
 - Accelerating the all-round advancement of developing nations;
 - Ensuring that the discoveries of science and modern knowledge are used for the larger good of the human race; and Enlarging the scope of freedom and enriching the human spirit.

TRADE INTELLIGENCE & ANALYTICS (TIA) PORTAL

Recently, Union Minister of Commerce and Industry launched the Trade Intelligence & Analytics (TIA) Portal in New Delhi.



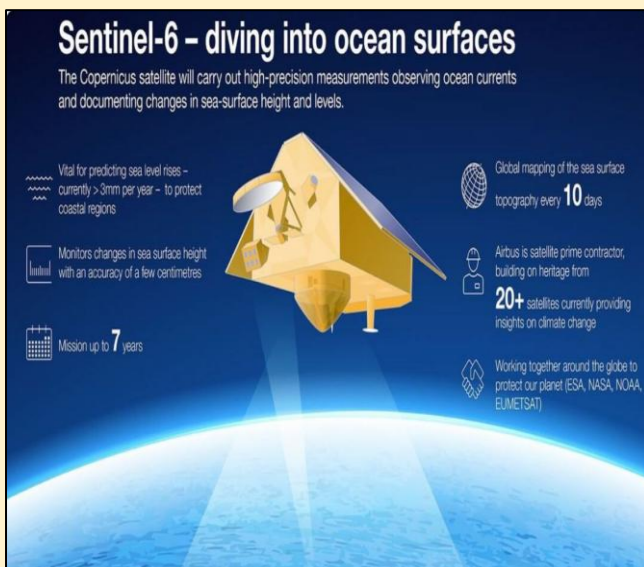
About Trade Intelligence and Analytics (TIA) Portal:

- **Nature:** It is a one-stop trade intelligence and analytics platform that integrates multiple global and national databases.
- **Development:** It is developed by the Department of Commerce, Minister of Commerce and Industry.
- **Objective:** The portal aims to make trade data more transparent, accessible, and useful for stakeholders across India. It seeks to help importers, exporters, MSMEs, and startups make informed and data-driven decisions.
- **Significance:** The new and more exhaustive capabilities of the TIA Portal significantly improve accessibility and usability of trade data at one place.
- **Centralised digital hub:** It serves as a centralized digital hub that consolidates diverse trade databases – both global and bilateral – into a single integrated system. It is designed to enhance trade analytics and foster data-driven evidence-based policymaking through a comprehensive and integrated platform.
- **Real time insights:** It offers more than 270 interactive visualisations across over 28 dashboards. It provides real-time, interactive insights on India and global trade, commodities and sectoral analytics, market intelligence.

- Includes PLI sectors: It also includes automated trade reports and tracking of trade trends for the production-linked incentive (PLI) sectors and critical minerals. It also provides tools to compare and contrast macroeconomic, trade and investment indicators across countries.
- Trade indices: It incorporates trade indices such as
 - Trade Complementarity Index: It assesses alignment between India's export profile and partner countries' import needs.
 - Revealed Comparative Advantage index: It highlights products where India holds a competitive edge.
 - Trade Intensity Index: It measures the strength of bilateral trade relationships relative to global flows.

SENTINEL-6B

Sentinel-6B was launched recently from the Vandenberg Space Force Base in California.



About Sentinel-6B:

- Nature: It is a joint mission between the United States' NASA and NOAA, and the European Space Agency. It is the latest in a series of satellites launched since the 1990s, mainly by NASA, to measure the sea-level changes from space.

- Objective: It is an ocean-tracking satellite which will measure the rising sea levels and its impacts on the planet. It will provide primary sea level measurements down to approximately an inch from over 90% of all the oceans.
- Launch: It was launched aboard a SpaceX Falcon-9.
- Continues legacy of Sentinel-6: It is set to carry forward the legacy of Sentinel - 6 Michael Freilich, launched in November 2020.
- Orbiting speed: It will orbit Earth at a speed of 7.2 km per second, completing one revolution every 112 minutes. It is expected to spend the next 5.5 years in orbit.
- Coverage: It maps more than 90% of the world's ice-free oceans every 10 days.
- Components: It consists of six onboard science instruments. It has two fixed solar arrays, plus two deployable solar panels, and will travel in a longitude direction around Earth in a non-Sun-synchronous orbit.
- Significance: It observes Earth's oceans, measuring sea levels to improve weather forecasts and flood predictions. It also safeguards public safety, benefits commercial industry, and protects coastal infrastructure.

RAULANE FESTIVAL

Recently, raulane festival, a unique and sacred winter festival was celebrated in Himachal Pradesh's Kinnaur district.



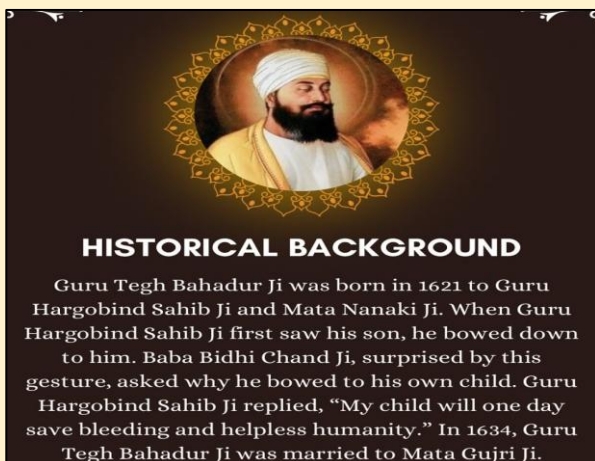
RAULANE FESTIVAL IN HIMACHAL'S KINNAUR CELEBRATES WINTER FAIRIES

About Raulane Festival:

- **Location:** It is a traditional festival celebrated in Kalpa, Kinnaur district, Himachal Pradesh, in winter or early spring.
- **History:** This ancient festival is believed to be around 5,000 years old. It honours celestial fairies, known as Saunis, said to be radiant and gentle beings.
- **Faith:** Locals believe that the Saunis protect villagers during harsh winters by offering warmth and guidance.
- **Symbolic marriage ceremony:** During the festival, two men symbolically “marry” and become vessels for the Saunis, embodying a divine couple, the Raula (groom) and the Raulane (bride).
- **Use of heavy costumes and masks:** They get dressed in heavy woollen robes, ornaments and unique face masks.
- **Ritual dance:** They also perform a slow, meditative dance at the Nagin Narayan Temple, and the whole community joins in.
- **Significance:** The Raulane festival preserves ancient Himalayan culture and traditions, with villagers coming together to honour their protectors

SRI GURU TEGH BAHADUR

Prime Minister Narendra Modi led national commemorations in Kurukshetra to mark the 350th martyrdom anniversary of Sri Guru Tegh Bahadur, releasing a commemorative postage stamp, special coin and a coffee-table book dedicated to the Ninth Sikh Guru.



National Tribute at Kurukshetra

The state-level event, organised by the Haryana government under chief minister Nayab Singh Saini, drew thousands of devotees from across Haryana and neighbouring states. A grand venue at Jyotisar village was created to host the gathering, supported by extensive security, traffic and logistical arrangements to manage the large crowds.

Interfaith Harmony and Gurbani Recital

A notable feature of the ceremony was an interfaith Gurbani recitation by 350 students from a Patiala school representing Hindu, Muslim, Sikh and Christian communities.

They rendered kirtan in unison for about half an hour, symbolising harmony and shared reverence for Guru Tegh Bahadur’s message of faith, sacrifice and protection of religious freedom.

PM’s Address on Sikh Heritage and National Values

In his address, the Prime Minister linked Kurukshetra’s sacred legacy with Sikh tradition, recalling that many Sikh Gurus visited the region. He described Guru Tegh Bahadur as “Hind Di Chadar”, highlighting his defiance of forced conversions under Mughal rule and praising Bhai Jaita (Bhai Jeevan Singh) for carrying the Guru’s severed head to Anandpur Sahib.

Modi underlined government efforts to honour Sikh heritage, citing major Prakash Gurburb celebrations, the Kartarpur Sahib Corridor, Hemkund Sahib ropeway and expansion of Virasat-e-Khalsa.





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