KERALA STATE CIVIL SERVICE ACADEMY

Established under Centre for Continuing Education Kerala (CCEK)

MONTHLY CURRENT AFFAIRS MAGAZINE

August 2025

Scan the QR code

POLLUTION CONTROL BOARDS

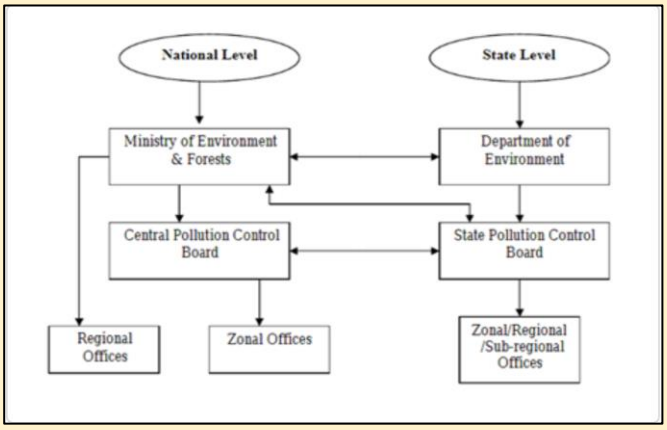
The Supreme Court has ruled that Pollution Control Boards (PCBs) have the authority to impose and collect restitutionary and compensatory damages to restore polluted air and waterbodies to their original state.
This power is derived from Sections 33A and 31A of the Water and Air Acts, respectively.
The Court directed that such powers must be exercised only after appropriate subordinate legislation (rules and regulations) is framed, ensuring the principles of natural justice are followed.
The ruling came in response to a Delhi Pollution Control Committee appeal, where the Delhi High Court had earlier ruled that it lacked authority to impose such damages.

Justice P.S. Narasimha emphasized the "polluter pays" principle, noting that restoration should closely resemble the damaged ecosystem.

Justice Manoj Misra added that PCBs hold broad statutory powers and responsibilities under the Water and Air Acts, including the ability to regulate or shut down polluting industries and services.
The judgment strengthens PCBs' role in environmental protection and enforcement actions.

Pollution Control Boards (PCBs):
Pollution Control Boards (PCBs) are statutory bodies established under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 to prevent, control, and abate pollution in India. There are two main types:

- Central Pollution Control Board (CPCB) – Functions at the national level under the Ministry of Environment, Forest, and Climate Change.
- State Pollution Control Boards (SPCBs) – Function at the state level.



Key Functions:

- Monitor and regulate pollution levels in air and water.
- Grant or revoke consent to industries for discharge of pollutants.
- Enforce environmental laws and standards.
- Promote pollution abatement technologies.
- Advise governments on environmental matters.

ANTI DEFECTION LAW

The Supreme Court has strongly criticized the Telangana Assembly Speaker for delaying the decision on disqualification petitions.

A Bench led by Chief Justice B.R. Gavai stated that anti-defection cases must be resolved within three months to uphold the dignity of the Speaker's office and prevent political defection from going unpunished. The Court noted that such proceedings often die a "natural death" due to intentional delays by Speakers, making a mockery of the Tenth Schedule (anti-defection law).

It criticized the Telangana Speaker for issuing notices only after the matter was brought to the Supreme Court in January 2025, despite a seven-month delay. Chief Justice Gavai emphasized that no constitutional immunity protects the Speaker from judicial review when acting under the Tenth Schedule, and questioned whether the Speaker acted in an expeditious manner as expected by Parliament.

52nd Amendment Act and Anti-Defection Law:

1. **52nd Amendment Act, 1985:**

- Added the Tenth Schedule to the Indian Constitution.
- Aimed at curbing political defections by legislators.
- Enacted during Rajiv Gandhi's tenure as Prime Minister.
- Came into effect on 1 March 1985.

2. **Anti-Defection Law (Tenth Schedule):**

- Provides for disqualification of legislators (MPs/MLAs) on grounds of:
  - Voluntarily giving up membership of their party.
  - Voting/abstaining against party directives (whip) without permission.
- Exceptions:
  - Merger provision: If 2/3rd members of a party merge with another, disqualification does not apply.
- Decision Authority:
  - The Speaker/Chairman of the House decides disqualification petitions.

GLOBAL PLASTIC TREATY

Over 190 countries are meeting in Geneva, Switzerland, for the 5th round of talks (INC-5) under the UN Intergovernmental Negotiating Committee to finalize a legally binding Global Plastics Treaty.

- **Objective**: To address plastic pollution at every stage—production, usage, and disposal—including capping production, reducing harmful chemicals, and improving recycling.
- **Context**:
  - Talks follow a breakdown in Busan (Dec 2023) due to disagreements on production limits and chemical additives.
  - A resolution to create this treaty was passed in Nairobi (2022) at the UN Environment Assembly.
- **Plastic Crisis**:
  - Global plastic production has doubled in two decades.
  - Plastic waste rose from 156 MT (2000) to 353 MT (2019).
  - OECD warns production may triple by 2060.
  - Health impacts include links to cancer, infertility, and cardiovascular diseases, costing the world $1.5 trillion annually.
- **Significance**: If adopted, the treaty could become the most impactful global environmental agreement since the Paris Climate Accord (2015).

Global Plastics Treaty

The Global Plastics Treaty is a proposed legally binding international agreement under negotiation by the United Nations Intergovernmental Negotiating Committee (INC) to address the full lifecycle of plastics—from production to disposal.

Background:

- Initiated by a resolution at the UN Environment Assembly in Nairobi (2022).
- Aims to tackle the growing plastic pollution crisis, which threatens ecosystems, human health, and economies.
- The process is being coordinated through a series of negotiation rounds called INC-1 to INC-5.

Objectives:

- To cap and reduce plastic production.
- Eliminate harmful chemicals in plastic products.
- Strengthen recycling and waste management systems.
- Promote a circular economy and sustainable alternatives.
- Hold producers accountable through extended producer responsibility (EPR).

Global Significance:

- Plastic waste has more than doubled in two decades.
- Production is projected to triple by 2060 under a business-as-usual scenario (OECD).
- The treaty is considered as significant as the 2015 Paris Climate Agreement for its potential environmental impact.

Challenges:

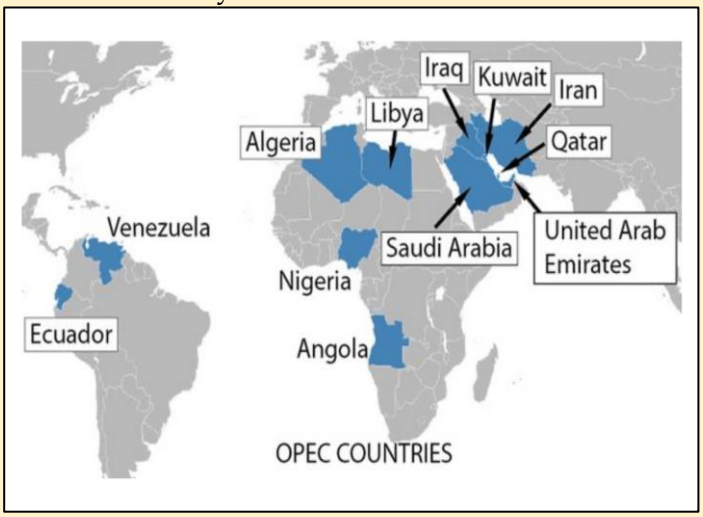
- Disagreements on binding commitments, especially production caps.
- Divergence between developed and developing countries on responsibility and financing.
- Influence of the petrochemical and plastics industry.

OPEC +

OPEC+ has agreed to significantly increase oil production by 547,000 barrels per day (bpd) starting September 2025

Key highlights:

- The total output hike, including a separate increase for UAE, totals around 2.5 million bpd, covering about 2.4% of global demand.
- This move marks a reversal of previous output cuts, aiming to stabilize global oil markets.
- A virtual meeting of eight OPEC+ members also discussed U.S. pressure on India to halt Russian oil imports.
- President Donald Trump wants progress on this issue by August 8.
- Despite increased output, oil prices remain high, with Brent crude nearing $70/barrel, up from $58 in April.
- OPEC+ may meet again on September 7 to consider reinstating cuts if necessary.



OPEC (Organization of the Petroleum Exporting Countries)

- **Established:** 1960
- **Headquarters:** Vienna, Austria
- **Founding Members:** Iran, Iraq, Kuwait, Saudi Arabia, Venezuela
- **Current Members (13 countries)** include:
  Saudi Arabia, Iraq, Iran, Kuwait, UAE, Venezuela, Nigeria, Libya, Algeria, Angola, Congo, Equatorial Guinea, and Gabon.

Objectives:

- Coordinate and unify petroleum policies among member countries
- Ensure stable oil markets and fair prices for producers and consumers
- Regulate oil production to balance global supply and demand

OPEC+

- **Formed:** 2016 (informal coalition)
- **Members:** All 13 OPEC members + 10 non-OPEC oil-producing countries
- **Key non-OPEC members:** Russia, Kazakhstan, Mexico, Oman, Azerbaijan, etc.

Purpose:

- Cooperate on oil production decisions to stabilize global oil markets
- Respond jointly to market crises (e.g., COVID-19 demand collapse, Russia-Ukraine conflict)

Key Differences:

Feature	OPEC	OPEC+
Members	13 (Only OPEC countries)	23 (OPEC + 10 non-OPEC countries)
Formation Year	1960	2016 (as a coordinated alliance)
Main Driver	Long-termoilpolicy coordination.	Short-term cooperation on production levels.

RED PANDA

The recent birth of red panda cubs at the Himalayan Zoological Park near Gangtok marks achievement. After seven years without successful births, this event revives hopes for the endangered species' conservation in the region.

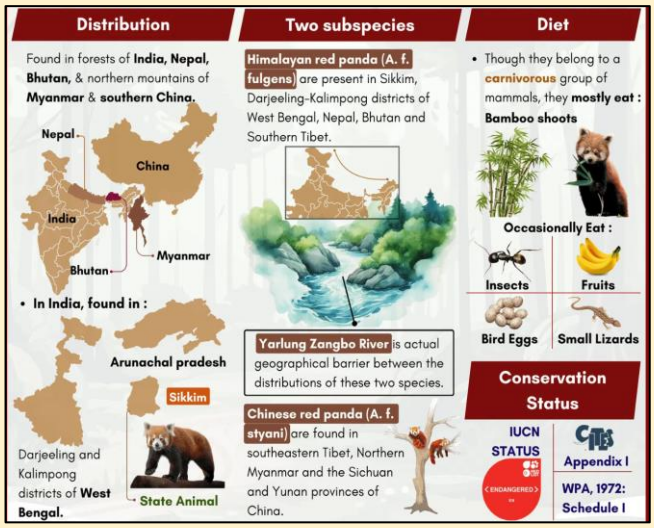
Conservation Programme

The Red Panda Conservation Programme began in 1997. It faced severe setbacks due to two canine distemper outbreaks, which nearly wiped out the captive population.

The breeding programme initially involved individuals from Rotterdam Zoo and Darjeeling's Padmaja Naidu Himalayan Zoological Park. Later, wild-origin red pandas were introduced to enhance genetic diversity.

Red Panda Biology and Adaptations

Red pandas (Ailurus fulgens) have a distinct ruddy coat that camouflages them in fir tree canopies. They possess unique physical traits such as dense fur, bushy tails for balance and warmth, and semi-retractable claws. Their flexible ankles enable them to climb down trees headfirst. They have robust dentition and a pseudo-thumb to grasp bamboo, their main food source.



Taxonomy and Species Variations

Once classified with raccoons or bears, red pandas now belong to their own family, Ailuridae. Genetic studies identify two species – Ailurus fulgens fulgens and Ailurus fulgens styani. The latter is larger and darker. Red pandas are ancient carnivores closely related to skunks, raccoons, and weasels.

Habitat and Distribution

Red pandas inhabit temperate forests with bamboo understories across the Himalayas, including parts of India, Nepal, Bhutan, China, Myanmar, and Tibet. They live at high altitudes, often in dense, cool forests.

Diet and Feeding Habits

Bamboo constitutes 95% of their diet. They prefer leaf tips and tender shoots. Occasionally, they eat fruits, insects, and small animals. Their feeding method involves grasping bamboo with forepaws and stripping leaves with their mouths.

Behaviour and Reproduction

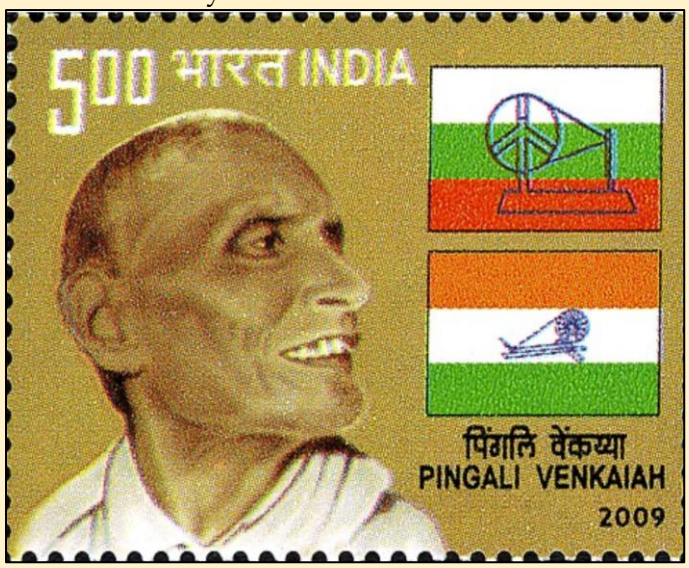
Red pandas are solitary except during breeding seasons, which vary by hemisphere. Females give birth to litters of typically two cubs after a gestation of about five months. Cubs remain with the mother for over a year and reach sexual maturity at 18 months. They communicate through subtle vocalisations and scent marking.

PINGALI VENKAYYA 149TH BIRTH ANNIVERSARY

Prime Minister Narendra Modi paid tribute to Pingali Venkayya on his birth anniversary, lauding his significant role in designing India's national flag, the Tricolour.

In a social media message, the Prime Minister highlighted that Pingali Venkayya is remembered for giving India its Tricolour, which stands as a symbol of the country's pride and unity.

The tribute underscores Venkayya's invaluable contribution to India's freedom movement and his lasting legacy in the nation's history.



Brief Note on Pingali Venkayya

- **Born:** 2 August 1876, near Machilipatnam, Andhra Pradesh
- **Died:** 4 July 1963

Key Contribution:

- Designer of the Indian National Flag (Tricolour).
- Presented the first version of the flag to Mahatma Gandhi in 1921 at the Indian National Congress session in Bezwada (now Vijayawada).
- The original design had two colors (red and green) representing Hindus and Muslims; Gandhi suggested adding white (for other communities) and the spinning wheel (charkha) as a symbol of self-reliance.

Background:

- A freedom fighter, Gandhian, and a polymath with interests in geology, agriculture, languages, and history.
- Also worked as a lecturer and served in the British Indian Army during the Boer War in South Africa.

FAKE ARYA SAMAJ SOCIETIES

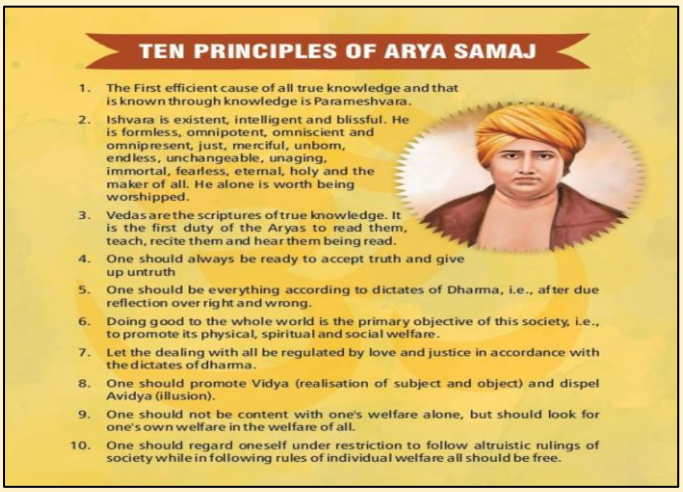
The Allahabad High Court recently directed the Uttar Pradesh government to investigate the rise of "fake Arya Samaj societies"

Key Points:

- Arya Samaj Marriages: Based on reformist Hindu values, they are quick, paperwork-light, and popular among interfaith or eloping couples. Established in 1875, Arya Samaj promotes "shuddhi" or reconversion to Hinduism.
- Legal Framework: The Arya Marriage Validation Act, 1937, protects such marriages even across castes and sub-castes. However, it does not bypass procedures under state anti-conversion laws or marriage registration rules.
- Concerns Raised: Courts and governments have flagged cases where Arya Samaj weddings were used to:
  - Avoid scrutiny under Special Marriage Act (SMA), which mandates a 30-day public notice.
  - Circumvent anti-conversion laws, especially when conversion rituals are incomplete or rushed.
  - Marry minors or without valid consent, especially in interfaith cases.
- Uttar Pradesh Prohibition of Unlawful Conversion of Religion Act, 2021:

Requires pre- and post-conversion declarations, verification of voluntariness, and penalizes coercive or fraudulent conversions.

- Court Observations: The judiciary noted misuse of Arya Samaj temples to issue fraudulent marriage certificates without proper documentation, particularly in interfaith unions.



Arya Samaj

The Arya Samaj was a Hindu reform movement founded by Swami Dayananda Saraswati in 1875 in Bombay (now Mumbai). It aimed to revive the Vedic way of life, rejecting superstitions, caste discrimination, and idol worship, and promoting rationalism, equality, and education.

Key Objectives:

- Return to the Vedas: Emphasized the authority of the four Vedas as the true source of knowledge.
- Opposition to orthodoxy: Rejected rituals, priestcraft, and idol worship.
- Promotion of social reforms:
  - Women's education and widow remarriage
  - Abolition of child marriage and untouchability
- National awakening: Encouraged self-reliance, swadeshi, and national pride.
- Shuddhi Movement: Re-conversion of non-Hindus back to Hinduism.

Key Contributions:

- Established Dayanand Anglo-Vedic (DAV) schools and colleges to combine Vedic values with Western education.
- Promoted Hindi in Devanagari script as a unifying national language.
- Influenced leaders like Lala Lajpat Rai and played a role in freedom struggle.

NATIONAL FILM AWARDS

The National Film Awards were established in 1954 by the Government of India to honor artistic and technical excellence in Indian cinema. Instituted under the Ministry of Information and Broadcasting, the awards aim to encourage the production of films of aesthetic, cultural, and educational value.

Key Milestones:

- 1954: First National Film Awards presented; initially known as the "State Awards for Films." Only a few categories existed, and "Shyamchi Aai" (Marathi) was the first winner of the President's Gold Medal for the All India Best Feature Film.
- 1967: The awards were renamed as National Film Awards, and regional films were officially included in competitive categories.
- 1973: The Directorate of Film Festivals (DFF) was established to organize the National Film Awards and the International Film Festival of India.
- Over time, the awards expanded to include categories for feature films, non-feature films, and best writing on cinema, encouraging excellence in cinema across India's diverse linguistic and cultural landscape.
- Awards are given by the President of India at a formal ceremony in New Delhi, and they hold the highest prestige among Indian film honors.

Present Structure:

- Divided into three sections: Feature Films, Non-Feature Films, and Writing on Cinema.
- Includes Golden Lotus (Swarna Kamal) and Silver Lotus (Rajat Kamal) trophies with cash prizes.
- Open to films certified by the Central Board of Film Certification (CBFC) in the previous calendar year.

BHASKAR (BHARAT STARTUP KNOWLEDGE ACCESS REGISTRY)

The BHASKAR (Bharat Startup Knowledge Access Registry) platform is a comprehensive digital ecosystem designed to strengthen collaboration and innovation across India's startup landscape.

Key Features:

- Centralized Networking: Connects startups, investors, mentors, service providers, and policymakers on a single platform, enabling seamless collaboration across sectors and regions.
- Personalized BHASKAR ID: Users receive a unique ID linked to verified, complete profiles—enhancing credibility, searchability, and secure interaction.
- Multi-Stakeholder Access: Open to diverse roles including entrepreneurs, investors, mentors, and support organizations, ensuring inclusivity.
- Enhanced Discoverability: Advanced search tools help users find partners, funding opportunities, programs, and schemes quickly and efficiently.
- Resource Hub: Offers centralized access to startup-related resources, events, and knowledge-sharing tools, eliminating system fragmentation.
- Digital & On-Ground Engagement: Facilitates both online collaboration and physical events to build relationships and market presence.
- Large-Scale Reach: With around 200,000 startups registered as of August 2025, BHASKAR is among the largest startup registries in the country.

BHASKAR acts as a secure, inclusive, and scalable digital backbone for India's startup ecosystem, accelerating innovation, connectivity, and growth.

RHISOTOPE PROJECT

Context: Attempt to Save Rhinos by Giving Them Radioactive Horns

To combat rhino poaching, scientists in South Africa have begun injecting radioactive isotopes into rhino horns as part of the Rhisotope Project.

Developed by the University of the Witwatersrand and supported by the IAEA, this method makes horns detectable at borders and toxic for human use without harming the animals.

Key Points:

- Low-dose radioactive isotopes are injected non-invasively, detectable by radiation scanners at airports and borders.
- The procedure is safe for rhinos and renders horns "useless" and "poisonous" for illegal use.
- Successfully tested on rhinos in the Waterberg Biosphere, with no negative health impact.
- Targets international wildlife trafficking by leveraging radiation detection infrastructure.
- Tackles rampant poaching: Over 27,000 rhinos killed since 2008, driven by illegal horn trade.

This innovative approach represents a scientific and security-based strategy to protect endangered rhinos by reducing the commercial value of their horns.

Rhinos

Rhinoceroses (Rhinos) are large, herbivorous mammals known for their thick skin and prominent horns. They are native to parts of Africa and Asia and are among the world's most endangered animals due to habitat loss and poaching for their horns, which are falsely believed to have medicinal value.

Key Species:

1. **African Rhinos:**
   - White Rhino (Ceratotherium simum) – Larger, with a broad mouth for grazing.
   - Black Rhino (Diceros bicornis) – Smaller, hook-lipped for browsing shrubs.
2. **Asian Rhinos:**
   - Indian Rhino (Rhinoceros unicornis) – Also called the Great One-Horned Rhino, mostly found in Kaziranga National Park, Assam.
   - Javan Rhino – Critically endangered, found in Indonesia.
   - Sumatran Rhino – Smallest and most endangered, with only a few dozen individuals left.

Conservation Status:

- Most species are endangered or critically endangered (IUCN Red List).
- Protected under CITES Appendix I, banning international trade in rhino horns.
- Conservation efforts include habitat protection, anti-poaching laws, and rhino translocation programs.

Threats:

- Poaching for horns, primarily driven by demand in Asia.
- Loss of habitat due to agriculture and urban development.
- Weak law enforcement and illegal wildlife trade networks.

Rhinos play a crucial ecological role by maintaining grassland and forest balance, and their protection is vital for broader biodiversity conservation.

Radioisotopes

Radioisotopes, or radioactive isotopes, are atoms that have unstable nuclei and emit radiation as they decay into more stable forms. These isotopes can be naturally occurring or artificially produced in reactors or particle accelerators.

Key Features:

- Unstable nucleus emits alpha (α), beta (β), or gamma (γ) radiation.
- Decay occurs at a predictable rate (half-life).
- Used in medicine, industry, research, and now even in wildlife conservation.

Major Applications:

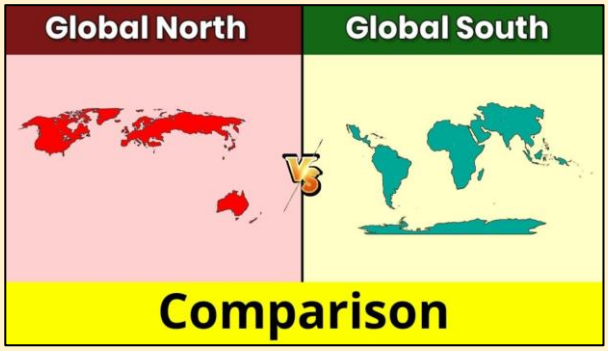
1. **Medical:**
   - Diagnosis (e.g., Technetium-99m in imaging).
   - Treatment (e.g., Cobalt-60 for cancer radiotherapy).
2. **Industrial:**
   - Detecting leaks in pipelines.
   - Gauging thickness of materials.
3. **Agriculture:**
   - Improving crop varieties via mutation breeding.
   - Tracing nutrient pathways.
4. **Research:**
   - Tracing chemical and biological processes.
5. **Wildlife Conservation:**
   - As seen in the Rhino isotope tagging project, low-dose radioisotopes are used to make horns detectable at borders and less valuable for poachers.

Safety & Regulation:

- Handled under strict guidelines due to health and environmental risks.
- Regulated by bodies like the International Atomic Energy Agency (IAEA) and national atomic regulatory boards.

INDIA-UN GLOBAL CAPACITY BUILDING INITIATIVE

India recently launched the first four projects under the India-UN Global Capacity Building Initiative. This programme aims to help Global South countries achieve Sustainable Development Goals (SDGs). The initiative builds on India's expertise in capacity building and strengthens South-South cooperation.



Background

The initiative was announced in September 2023 during the 78th UN General Assembly. It extends India's development partnership efforts. The MEA leads the programme in collaboration with several UN agencies.

Core Framework and ITEC Role

The Indian Technical and Economic Cooperation (ITEC) programme underpins the initiative. ITEC offers over 12,000 training slots annually to nearly 160 countries. More than 225,000 professionals have been trained through over 400 specialised courses. Under the new initiative, UN agencies identify SDG-focused projects with host governments. Training is delivered through Indian institutes linked to ITEC.

First Phase Projects

The initial four projects cover diverse sectors and countries. In Nepal, the World Food Programme supports rice fortification and supply chain management. Zambia and Lao PDR receive digital health platform development assistance from the United Nations Development Programme (UNDP).

Census preparedness training is planned for Belize, Barbados, St Kitts & Nevis, Suriname, and Trinidad & Tobago, in partnership with the UN Population Fund. UNESCO supports vocational training in South Sudan.

Implementation and Timeline

Training courses for these projects will start in September 2025. The courses will be conducted by designated Indian training institutes under the ITEC framework. The initiative aims to build human resource capacity in partner countries. It focuses on practical skill development aligned with SDG priorities.

Significance for South-South Cooperation

This initiative marks India's role in global development cooperation. It leverages India's experience to support developing nations. The collaboration with UN agencies ensures alignment with global development goals. It strengthens diplomatic ties and promotes sustainable progress in partner countries.

AI-POWERED ANGANWADI CENTRE

The Maharashtra government inaugurated the nation's first AI-powered Anganwadi centre in Waddhamna village, Nagpur district.

This pilot project under Mission Bal Bharari introduces advanced digital tools to early childhood education in rural India. It aims to bridge the rural-urban education divide by offering immersive and technology-driven learning experiences to underprivileged children.

Anganwadi Centres

Anganwadi centres are grassroots childcare and preschool units. They serve children aged 0–6 years, especially in rural and underprivileged areas. Traditionally, these centres focus on healthcare, nutrition, and early education. They play important role in holistic child development across India's rural landscape.

Introduction of AI and VR Technologies

The Waddhamna Anganwadi integrates artificial intelligence dashboards and virtual reality headsets. These tools create interactive and immersive learning environments. Children engage with poems, songs, and foundational curriculum through AI-guided content. This technology transforms routine lessons into joyful and effective learning experiences.

Training Anganwadi Workers

Anganwadi workers received extensive training to operate AI-enabled smart systems. This ensures smooth classroom management and maximises learning outcomes. The training empowers educators to deliver adaptive, high-quality education tailored to each child's needs.

Bridging the Digital Divide in Rural Education

The initiative addresses the rural-urban gap in access to quality education. It brings premium learning tools, previously limited to elite urban schools, to rural children. This move promotes equity in early childhood education and nurtures curiosity and confidence among village learners.

Expansion Plans

Following the successful pilot, Maharashtra plans to establish 40 more AI-powered Anganwadi centres across Nagpur district. This expansion aims to scale inclusive, technology-driven education for rural children. The project sets a precedent for other states to adopt similar innovations in public education.

Significance for Early Childhood Development

By combining technology with traditional Anganwadi services, the centre enhances early learning and development. It encourages creativity, participation, and joyful learning. The model promises a transformative shift in how India supports its youngest learners, especially in marginalised communities.

MAHANADI RIVER WATER-SHARING DISPUTE

Recent developments have brought hope to the decade-old Mahanadi river water-sharing dispute between Odisha and Chhattisgarh. Both states have expressed willingness to resolve the issue through negotiations.

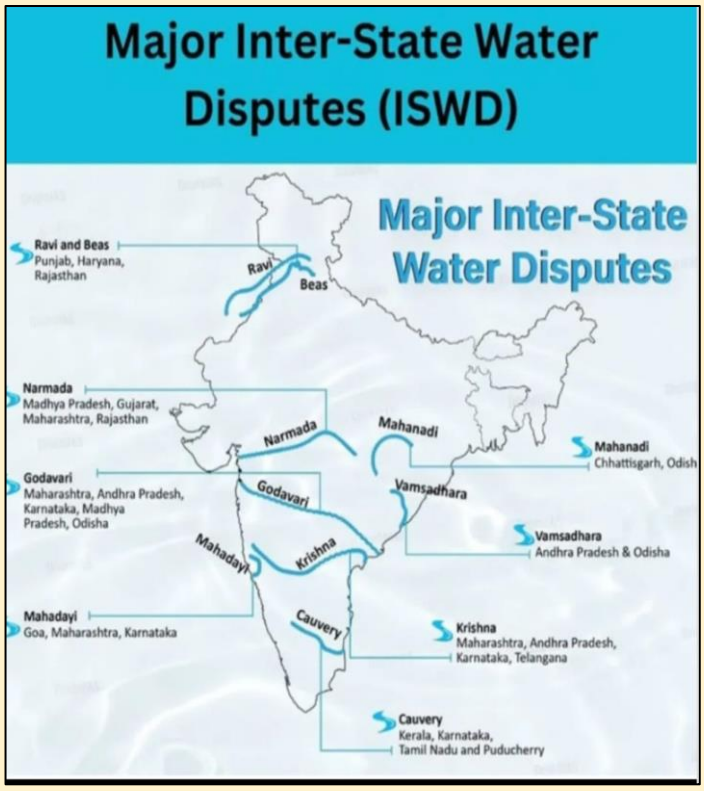
The Mahanadi Water Disputes Tribunal has granted additional time for talks and scheduled the next hearing for September 6, 2025. This marks shift from prolonged legal battles to political dialogue.

Background

The dispute centres on water sharing from the Mahanadi river, which flows from Chhattisgarh to Odisha. Odisha alleges that Chhattisgarh's construction of upstream dams and barrages restricts water flow. This affects agriculture and livelihoods in Odisha's lower basin, especially outside the monsoon season. The conflict has persisted for nearly ten years with limited progress.

Legal Proceedings

Odisha approached the Supreme Court in 2016 seeking a tribunal under the Inter-State River Water Disputes Act, 1956. The Centre formed the Mahanadi Water Disputes Tribunal in 2018. The tribunal's work involved data submissions, inspections, and hearings. However, progress has been slow, with only one witness examined by 2024 and many issues unresolved



About Mahanadi River

- Mahanadi is a prominent eastward-flowing river in peninsular India
- Renowned for its heavy silt load, frequent historical floods, and its agricultural significance.

- Name derived from Sanskrit: **"Maha"** = Great, **"Nadi"** = River → "**Great River**".
- States Covered by the River Basin are
  - **Chhattisgarh** – Covers the upper and middle basin
  - **Odisha** – Hosts the lower basin and delta
  - **Marginal regions**: Jharkhand, Maharashtra, Madhya Pradesh
- **Total Length**: Around 900 km
- **Source and Course**
  - **Origin**: Near Pharsiya village, Nagri Sihawa Hills, Dhamtari district, Chhattisgarh
  - **Drains into**: Bay of Bengal near Paradip, Odisha, through a network of distributaries
- **Drainage Basin Area**: Roughly 32 lakh sq. km
- **Left-Bank Tributaries:** Seonath (Shivnath), Hasdeo, Mand and Ib
- **Right-Bank Tributaries:** Ong, Tel and Jonk

NASA–ISRO SYNTHETIC APERTURE RADAR (NISAR) SATELLITE

India successfully launched the NASA–ISRO Synthetic Aperture Radar (NISAR) satellite aboard GSLV-F16 from Sriharikota on July 31, 2025.

- It marks the first joint Earth-observation mission between ISRO and NASA, symbolizing deep Indo-US space collaboration.

About India Successfully Launched The NASA–ISRO Synthetic Aperture Radar (NISAR) Satellite:

- **What is NISAR?**
  - **Full Form – NASA–ISRO Synthetic Aperture Radar:** Joint Earth observation satellite using dual-frequency SAR tech for land and ice monitoring.
  - **Mission Life – 5 years (2025–2030):** Designed to capture Earth data over five years with 12-day revisit cycles.
  - **Orbit – Sun-synchronous polar orbit (747 km):** Ensures consistent lighting for accurate change detection across the globe.
  - **Launch Site – Satish Dhawan Space Centre, Sriharikota:** Launched aboard GSLV-F16, marking ISRO's first polar orbit GSLV mission.
- **Objectives Of the Nisar Mission:**
  - Detect minute land and ice surface movements with centimetre-level precision.
  - Monitor natural disasters such as earthquakes, floods, landslides, and volcanic activity.
  - Track changes in forests, glaciers, wetlands, and soil moisture.
  - Support agriculture, infrastructure, coastal, and climate management through actionable data.
- **Key Features of the Nisar Mission:**
  - **Dual-Frequency SAR**: First satellite to use both L-band (NASA) and S-band (ISRO) radars.
  - **Wide Swath & High Resolution:** Scans 242 km swath with detailed spatial mapping every 12 days.
  - **All-Weather, 24/7 Imaging:** Operates day-night, even through cloud cover and storm conditions.

- **12-metre Deployable Reflector Antenna:** Enables advanced SweepSAR technology for surface deformation detection.

- **Contributions: INDIA vs. USA**
  - **NASA:** L-band radar, deployable boom, reflector antenna, GPS, solid-state recorder, and telecom system.
  - **ISRO:** S-band radar, satellite bus (I-3K), GSLV-F16 launcher, solar arrays, data handling, and ground control.
  - **Mission Management:** Jointly executed via NASA's JPL and ISRO's multiple centers (SAC, URSC, VSSC, NRSC).
- **Significance Of Nisar Mission:**
  - **Scientific Edge:** Enables global-scale, real-time Earth system monitoring and disaster forecasting.
  - **Strategic Diplomacy:** Strengthens Indo-US civil space cooperation under "science diplomacy."
  - **Climate Action & SDGs:** Assists in global efforts towards climate adaptation, sustainable agriculture, and resource governance.
  - **Knowledge Export:** Open data policy supports developing nations and global researchers in Earth sciences.

NISAR is a landmark in Indo-US space partnership, blending high-end technology with societal impact. It transitions India from utility-driven to knowledge-led space applications. Through NISAR, India affirms its leadership in Earth observation, sustainability, and global science cooperation.

BHISHM CUBES

India recently gifted two BHISHM cubes to the Maldives on its 60th Independence Day. This gesture marks India's regional cooperation and healthcare diplomacy in the Indian Ocean. The BHISHM cubes are portable medical units designed for rapid emergency response. They enhance disaster preparedness in vulnerable island nations like the Maldives.

BHISHM Initiative and Its Purpose

BHISHM stands for Bharat Health Initiative for Sahyog, Hita & Maitri. It is part of India's Aarogya Maitri mission launched in 2024.

The initiative aims to provide timely healthcare support in disaster-hit and developing countries. The cubes are self-contained medical units ready for quick deployment in emergencies and conflict zones.

Structure and Composition of BHISHM Cubes

The system is modular and scalable. Thirty-six mini cubes form one mother cube. Two mother cubes combine to create a full BHISHM Cube. Each full cube can manage about 200 emergency cases, including surgeries. The cubes contain medicines, trauma supplies, surgical tools, and AI-powered coordination systems.

Deployment and Operational Features

BHISHM Cubes can be set up within 12 minutes, crucial for the golden hour in emergencies. They consist of 72 lightweight, waterproof components. These can be transported by hand, bicycle, drone, or airdrop. The cubes are designed for harsh conditions and versatile emergency scenarios.

Technology Integration and Management

The cubes use RFID for inventory tracking. A dedicated tablet app supports 180 languages and offers real-time stock updates. AI and data analytics aid in disaster response coordination. This technology ensures efficient management of medical supplies and services in the field.

Benefits to the Maldives

The Maldives faces unique healthcare challenges due to its geography of 1192 coral islands and no land connectivity. The BHISHM cubes improve emergency medical capacity for natural disasters and climate-related events. They provide essential care across remote islands quickly and effectively.

Medical Capacity and Support Features

Each BHISHM Cube supports trauma care, burns, fractures, and shock treatment. It can perform 10-15 basic surgeries daily. The cubes generate limited power and oxygen independently. They also provide shelter and food for a five-person crew for 48 hours, ensuring sustained operations.

VEER PARIVAR SAHAYATA YOJANA

The National Legal Services Authority (NALSA) launched the Veer Parivar Sahayata Yojana. This scheme aims to provide free legal aid to defence personnel and their families.

It was revealed during the North Zone Regional Conference in Srinagar. The initiative strengthens legal support through dedicated clinics linked with Sainik Boards at district, state, and central levels.

Background and

Defence personnel often face legal challenges while posted in remote areas. Issues such as land disputes, matrimonial conflicts, and service entitlements become difficult to manage from afar. The scheme recognises this gap and offers a legal support network to ease these burdens. It honours the sacrifices of soldiers and ensures their families receive timely legal assistance.

Structure and Implementation

The scheme builds on existing legal services clinics. It establishes a dedicated network within Sainik Boards across all administrative levels. These Boards are already welfare hubs for serving and retired personnel. Now, they will also provide legal guidance.

Panel lawyers and para-legal volunteers will actively assist defence families. This creates a robust support system tailored to their unique needs.

Scope and Beneficiaries

Veer Parivar Sahayata Yojana covers serving soldiers, ex-servicemen, and paramilitary forces. This includes personnel from the Border Security Force (BSF), Central Reserve Police Force (CRPF), Indo-Tibetan Border Police (ITBP), and others.

The scheme ensures legal aid reaches those in isolated and high-risk postings. It addresses both civil and service-related legal issues.

Significance and Impact

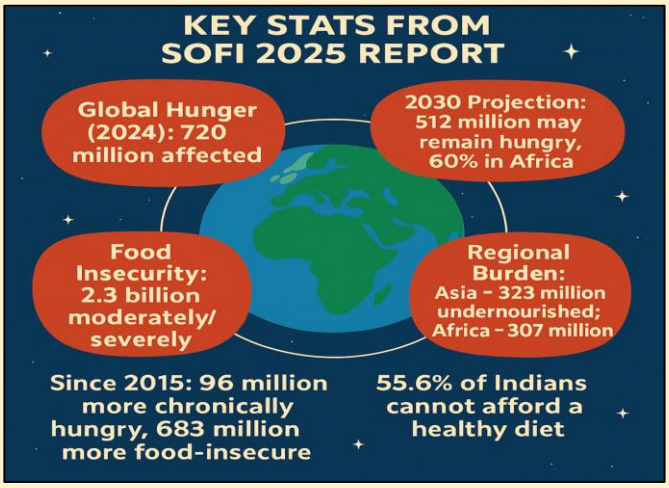
This is the first initiative in India to provide proactive legal assistance to defence families. It relieves soldiers from managing legal matters remotely. The scheme reflects a commitment by the judiciary to support the armed forces beyond traditional roles.

It also involves defence families as paralegal volunteers, encouraging community participation. The scheme was launched on Kargil Vijay Diwas, symbolising tribute to soldiers' sacrifices.

STATE OF FOOD AND NUTRITION IN THE WORLD (SOFI) REPORT

The 2025 edition of the State of Food and Nutrition in the World (SOFI) report reveals that hunger affected 720 million people worldwide in 2024. This represents about 8.2 per cent of the global population.

Although this is a slight improvement from previous years, the overall progress remains uneven across regions. The report marks persistent food insecurity, especially in Africa and parts of Asia, and warns of the difficulties in achieving the UN's zero-hunger goal by 2030.



Key Features of SOFI 2025 Report:

- **Global Underperformance:** Despite marginal improvements, global hunger levels in 2024 remain above pre-pandemic benchmarks, jeopardising the 2030 SDG-2 target.
- **Regional Disparities:** Africa, though home to fewer people than Asia, sees over 20% of its population undernourished, reflecting stark regional imbalances.
- **Asia's Burden:** Asia continues to host nearly half of the world's food-insecure population due to sheer numbers, despite modest regional improvements.
- **Southeast Progress:** Countries in Southeast Asia and South America registered slight declines in hunger, driven by social protection and agri-nutrition reforms.
- **Diet Affordability:** Over 3 billion people globally are unable to afford a healthy diet, pushing them toward calorie-dense but nutrient-poor options.
- **Climate & Conflict Linkages:** Ongoing wars and climate events like droughts and floods remain primary catalysts for hunger post-2020.
- **Sluggish Recovery:** Only a 65 million decline in undernourishment is projected by 2030—nowhere close to the 'zero hunger' ambition.

India and SOFI 2025 Report:

- **Affordability Crisis:** 55.6% of India's population cannot afford a nutritious diet, indicating a failure in food access despite surplus grain stocks.
- **Rural–Urban Divide:** Urban food access has improved due to income recovery, while rural India suffers due to PDS inefficiencies and price volatility.
- **Child Malnutrition:** India still ranks among the highest in child stunting and wasting, indicating persistent early-age nutritional failure.
- **Hidden Hunger:** Micronutrient deficiencies remain rampant due to cereal-heavy diets with inadequate intake of fruits, vegetables, and proteins.
- **Policy Shift Needed:** Experts demand inclusion of millets, pulses, and fortified foods into public schemes to tackle undernutrition holistically.

Analysis of Report:

- **Positive Developments:**
  - **Global Gains:** Hunger prevalence declined from 8.7% (2022) to 8.2% (2024), showing slow but visible improvement.
  - **Regional Recovery:** Progress in Southeast Asia and Latin America offers hope for replicable best practices in targeted interventions.

- **Diet Awareness:** Governments and civil society have amplified focus on diet quality and nutrition education globally.
- **Institutional Convergence:** The collaboration of FAO, WFP, IFAD, WHO, and UNICEF fosters comprehensive, multi-sectoral responses.
- **Data Systems:** Hunger mapping and nutrition tracking technologies enable quicker and more targeted interventions.

- **Negative Trends:**
  - **Post-COVID Setback**: The pandemic reversed a decade of gains, leaving 96 million more people hungry than in 2015.
  - **Africa's Challenge**: By 2030, 60% of global undernourished will be in Africa, highlighting the urgency for continental support.
  - **SDG Drift:** With just a 65 million projected decline by 2030, the pace is too slow to meet global targets.
  - **Inequality Spike:** The cost of healthy food has risen disproportionately, hurting low-income groups most severely.
  - **Persistent Undernourishment:** Despite surplus global production, equitable distribution remains a major bottleneck.

Way Ahead:

- **Nutrition-centric PDS:** Revamp India's food system by adding diverse, locally grown, and nutrient-rich foods into subsidised channels.
- **Diversify Agriculture:** Move beyond rice-wheat dominance to include millets, pulses, and horticulture to improve dietary balance.
- **Resilient Food Systems:** Invest in region-specific, climate-adaptive food systems to enhance food security and reduce disaster-linked hunger.
- **Global Coordination:** Support Africa and South Asia through climate finance, food aid, and region-focused SDG cooperation.
- **Improve Affordability:** Align food prices with income growth via minimum wages, inflation targeting, and better supply chains.

The SOFI 2025 report serves as a reality check on SDG-2, highlighting the growing gap between commitments and outcomes. For India, tackling hidden hunger and diet affordability must be policy priorities. True food security lies not in quantity alone but in nutrition and equity.

DRONE PRAHAR

The Indian Army recently conducted Exercise Drone Prahar in Arunachal Pradesh's East Siang district. This high-tech military drill validated the use of drone technology in tactical battlefield scenarios.

The exercise demonstrated the effective application of drones for intelligence, surveillance, reconnaissance, and precision targeting under realistic operational conditions.

Objective of Exercise Drone Prahar

The primary aim was to enhance command reach and situational awareness for tactical commanders. Drones provided layered surveillance and supported dynamic decision-making on the ground. This marked step towards modernising combat capabilities by integrating emerging technologies into battlefield operations.

Operational Demonstrations

The exercise showcased real-time sensor-to-shooter coordination using drones. It brought into light precision targeting capabilities based on live intelligence and surveillance data. The use of drones enabled faster and more accurate responses to battlefield threats, improving operational efficiency.

Key Technical Evaluations

Critical aspects such as airspace deconfliction were tested to avoid interference among multiple aerial platforms. Secure communication channels ensured reliable data transmission between drones and ground units. Coordination protocols were established among various arms and services to enable seamless drone integration.

Strategic Importance

Exercise Drone Prahar reflects the Indian Army's focus on innovation and adaptability. It advances the goal of becoming a fully technology-enabled force. The exercise prepares the army to meet future challenges on modern battlefields by leveraging cutting-edge technologies and enhancing operational superiority.

Future Implications

The success of this exercise paves the way for wider deployment of drone technology in Indian military operations. It will influence doctrine, training, and procurement strategies. Continued development in this area is expected to improve battlefield awareness, reduce risks to personnel, and increase mission success rates.

GREAT INDIAN BUSTARD

The Supreme Court-appointed committee in 2024 has proposed dedicated corridors for power lines in Rajasthan and Gujarat to protect the critically endangered Great Indian Bustard (GIB). This move aims to balance renewable energy growth with wildlife conservation.

The committee suggested rerouting existing lines and burying some underground to reduce bird collisions. The recommendations are set for Supreme Court review soon.

Background on Great Indian Bustard Conservation

The Great Indian Bustard is critically endangered with fewer than 150 individuals left in the wild. Its population has declined due to hunting, habitat loss, egg poaching, predation, and low reproduction rates.

Renewable energy infrastructure expansion in its habitat has increased risks. The birds often collide fatally with power transmission lines due to poor frontal vision and heavy bodies.

Supreme Court Mandate and Committee Formation

In March 2024, the Supreme Court modified a previous order requiring underground power lines over 80,000 sq km in Rajasthan and Gujarat.

The court recognised the importance of renewable energy and tasked a seven-member expert committee to find a balanced solution. The committee was asked to assess the feasibility of overhead and underground lines and propose conservation measures for the GIB.

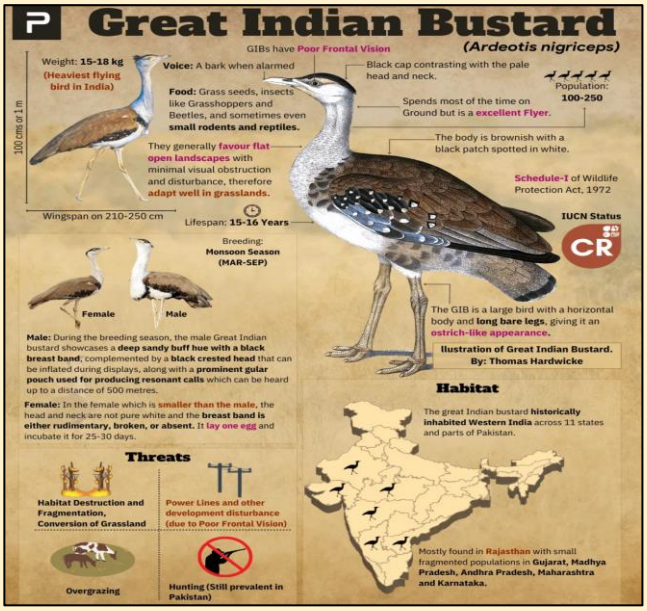
Committee Recommendations on Power Line Corridors

The committee proposed designated power corridors in Rajasthan and Gujarat to channel most power lines. This would reduce line criss-crossing and risks to the GIB. Some existing lines near critical habitats should be rerouted through these corridors.

A joint committee of forest departments, Central Electricity Authority, and Wildlife Institute of India will identify these stretches based on ecology and technical feasibility.

Specific Corridor Proposals in Rajasthan and Gujarat

In Rajasthan, a 5 km wide corridor is proposed south of Desert National Park for east-west connectivity across the GIB priority conservation area. Planned power projects lie west of this zone. Gujarat will have two corridors – one for evacuating wind power in Kutch coastal areas and another for a 400 kV high-voltage line in northern Kutch within the GIB habitat.



Mitigation Measures and Urgent Actions

The committee recommended insulating high-voltage lines and burying certain sections underground. About 80 km of lines near bustard enclosures and past death sites in Rajasthan are prioritised for immediate undergrounding. Similar urgent measures apply to identified sections in Gujarat. These steps aim to reduce bird electrocution and collisions.

Revised GIB Habitat Priority Areas

The committee revised the GIB priority area to 14,013 sq km in Rajasthan by retaining the original zone and adding 850 sq km from additional important areas. Some areas with fewer sightings were excluded to allow power transmission. In Gujarat, the priority area increased from 500 sq km to 740 sq km, excluding fragmented northern parts of the habitat.

GREATER ADJUTANT STORK

Recent efforts have seen the successful Assam conservation model for the greater adjutant stork adapted in Cambodia. This initiative focuses on the Prek Toal Bird Sanctuary within the Tonle Sap Biosphere Reserve.

It aims to empower local communities, especially women, to protect endangered stork species and wetland biodiversity. The programme was led by Dr Purnima Devi Barman, founder of Assam's Hargila Army and United Nations Environment Programme Champion of the Earth.

Background of the Assam Hargila Army

The Hargila Army is a women-led conservation movement in Assam. It protects the endangered greater adjutant stork through community participation.

The movement combines scientific knowledge with cultural traditions. It has successfully changed local attitudes towards the stork, once seen as a nuisance. The initiative integrates education, local customs, and ecological science.

Training Programme in Cambodia

On 28 July 2025, 20 Cambodian women conservationists and park rangers were trained in the Hargila Army model. The programme was hosted by the Wildlife Conservation Society (WCS) Cambodia. It included leadership exercises to identify women's strengths in conservation.

Activities connected local culture with environmental values. A textile hunt explored nature motifs in traditional fabrics. A web of life game illustrated biodiversity interdependence.

Educational Outreach and Community Engagement

Educational posters featuring the behavioural ethogram of the greater adjutant stork were revealed. These posters aim to raise awareness and promote coexistence with storks and wetland wildlife. Local community members and rangers participated in the inauguration. This marked a new phase of grassroots conservation in the Prek Toal Bird Sanctuary.

IUCN : NEAR THREATENED

Global Collaboration and Network Formation

The event led to the creation of the Sisters and Brothers of Storks network. This global alliance will work alongside the Hargila Army. Their goal is to protect greater adjutant storks and other stork species worldwide. The network promotes cross-border collaboration and shared conservation strategies.

Significance of Women's Leadership in Conservation

The initiative emphasises empowering women as guardians of nature. It weaves conservation into the fabric of culture and daily life. Women's leadership is central to building sustainable community-driven conservation. This approach enhances both biodiversity protection and social inclusion.

South-South Cooperation and Ecological Ties

This initiative represents a breakthrough in South-South cooperation. It strengthens ecological and cultural ties between Assam and Cambodia. The partnership aims to replicate and adapt successful conservation models across regions. It also advances biodiversity protection in globally important wetlands.

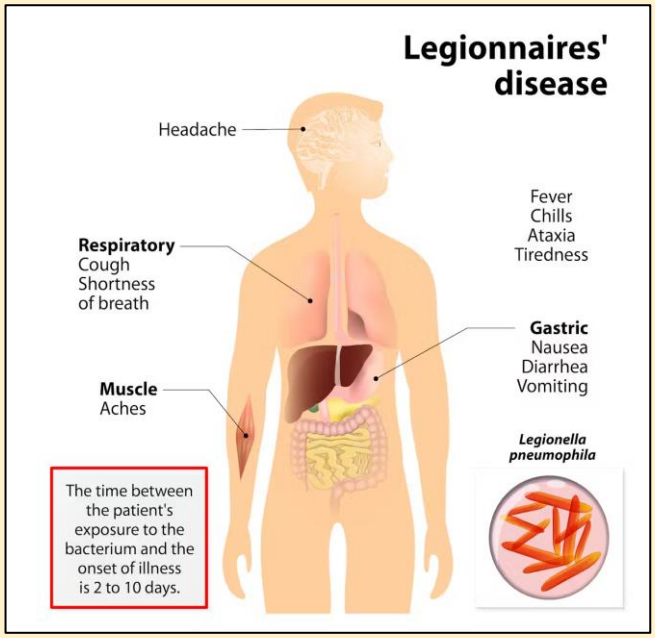
LEGIONNAIRES' DISEASE

Recent reports from New York City reveal an outbreak of Legionnaires' disease in Central Harlem. Since late July 2025, five confirmed cases have emerged. Health authorities are investigating water sources in affected areas. Residents are advised to remain vigilant and seek prompt medical care if symptoms arise.

About Legionnaires' Disease

Legionnaires' disease is a severe pneumonia caused by Legionella bacteria. The bacteria thrive in warm water environments such as cooling towers, hot tubs, and large plumbing systems.

Infection occurs by inhaling contaminated water droplets. The disease is not contagious and cannot spread from person to person. Early diagnosis and antibiotic treatment are crucial for recovery.



Symptoms and Risk Groups

Symptoms usually develop 2 to 14 days after exposure. Common signs include high fever, persistent cough, headaches, muscle pain, and shortness of breath. Some patients may experience nausea, diarrhoea, or confusion. People aged 50 and above, smokers, and those with chronic lung diseases are at higher risk of severe illness. A milder form called Pontiac fever causes flu-like symptoms and resolves within a week.

Sources and Transmission

Legionella bacteria naturally inhabit freshwater bodies like lakes and rivers. They also colonise man-made water systems including cooling towers, fountains, and plumbing in large buildings. Inhalation of aerosolised contaminated water droplets is the primary mode of transmission. Aspiration of contaminated water into the lungs can also cause infection. Drinking water does not transmit the disease.

Public Health Response in Harlem

The New York City Department of Health is conducting extensive testing of water systems in ZIP codes 10027, 10030, 10035, and 10037. Cooling towers and other potential sources are being sampled for Legionella presence. Health officials urge residents with flu-like symptoms to seek medical advice promptly, especially if COVID-19 tests are negative. No deaths have been reported so far, but hospitalisation has been necessary in all confirmed cases.

Global Context and Surveillance Challenges

Legionnaires' disease occurs worldwide but is often underreported due to diagnostic challenges. Countries with robust surveillance detect 10 to 15 cases per million people annually. Outbreaks have been linked to public bathhouses, water tanks, and air conditioning systems globally. The World Health Organization marks the need for better detection and prevention strategies to reduce incidence.

STRAY DOG ISSUE AT NCR

Stray-dog bites in Delhi-NCR are a critical public health concern—evidenced by tens of thousands of bites annually and rising rabies cases. The Supreme Court directed municipal authorities to house stray dogs in shelters, highlighting urgent legal and humanitarian dimensions of this issue.

Problems & Challenges

1. **Public Health Crisis**
   - Delhi records over 68,000 dog-bite cases in 2024, with 49 recorded human rabies deaths by July 2025.
   - Human rabies remains nearly 100% fatal—prompt and effective animal and human interventions are urgent.
2. **Infrastructure & Institutional Gaps**
   - Municipal capacities are severely overstretched; NCR-wide dog populations run into tens of thousands, but shelter infrastructure is grossly inadequate.
   - Financial resources, skilled personnel (veterinarians, handlers), and land for humane shelters are lacking.
3. **Urban Drivers Sustaining Stray Populations**
   - Open garbage, wet-waste mismanagement, offal from slaughterhouses, construction waste, and irresponsible pet abandonment create feeding grounds that support and sustain the stray dog population.
4. **Policy–Operational Disconnect**
   - The Animal Birth Control (ABC) Rules, 2023, mandate catch–neuter–vaccinate–**return-to-locality** (CNVR), whereas the recent SC order urges detention in shelters. This conflict threatens implementation.
5. **Data and Coordination Deficits**
   - No comprehensive dog census or microchipping system exists; bite and rabies case reporting is patchy; coordination between health, municipal, and animal welfare departments is weak.

Supreme Court Judgments & Legal Context

1. **Supreme Court Principles**
   - In *A. Nagaraja* (2014), the SC affirmed animals' dignity, and under Articles 51A(g),(h), upheld citizens' and the State's duty to practice compassion and scientific temper in animal management.
2. **Recent SC Direction (Aug 2025)**
   - A Bench ordered authorities to pick up stray dogs and house them in shelters, addressing public safety imperatives.

Implementation Challenges

1. **Resource Constraints**: Significant capital and operational investments required for building and maintaining humane shelters.
2. **Policy Tensions**: CNVR vs. sheltering debate; need clarity on handling aggressive or unfit-to-release dogs.
3. **Welfare Risks**: Overcrowding and disease outbreaks in shelters pose animal welfare risks—defeat cruelty objective.
4. **Community Conflicts**: Neighbourhoods vs. feeders; risks of vigilantism; slack grievance redress systems.
5. **Fragmented Governance**: Lack of unified command between departments—health, municipal, environment, NGOs.
6. **Data Scarcity**: Planning is hampered without reliable data on dog numbers, bites, or vaccination status.

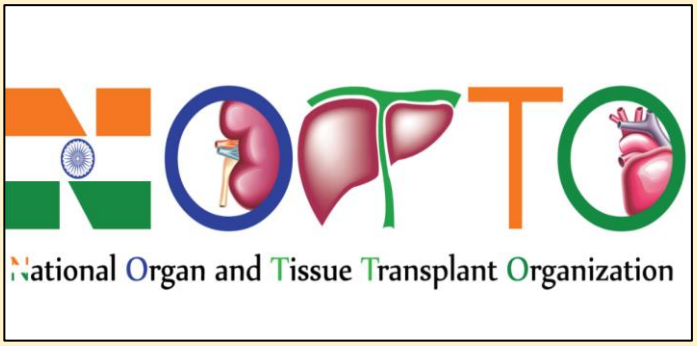
Way Forward (Reforms & Actions)

1. **Mass Vaccination & Targeted CNVR**
   - Achieve >70% dog vaccination (WHO benchmark) combined with behaviour-based release; unadoptable or aggressive dogs to humane shelters.
2. **Sacrificial Infrastructure—Shelters with Standards**
   - Modular, sanitary shelters with capacity for quarantine, veterinary care, behavioural assessment, and adoption programs.
   - Build through PPPs/NGOs under service-level agreements for sustainability.
3. **Waste & Environmental Management**
   - Enforce wet-waste segregation and manage offal; clamp down on illegal dumping; regulate pet-living areas and pet-food waste.
4. **Pet Ownership Regulations**
   - Mandatory pet registration and microchipping; licensing for breeders and pet shops; enforce anti-abandonment fines.
5. **Bite-Response & Human Health Protocols**
   - Ensure steady ARV/HRIG supply; train healthcare staff in bite management; conduct awareness drives in schools and communities.
6. **Data-Driven Governance**
   - Implement a dog census with microchipping, vaccination records, bite/rabies case tracking; transparent dashboards for public tracking.
7. **Community Engagement & Social Harmony**
   - Designate feeder points; burnish feeder-community agreements; mediate conflicts; encourage adoption; train municipal and police staff on humane management.
8. **One Health Coordination**
   - Create inter-departmental Task Forces combining health, veterinary, municipal, education, and NGOs to drive integrated interventions.

The issue of dog bites in NCR demands a balanced One Health approach—one that ensures **public safety** without compromising animal dignity. Ethics demands that India treat even its stray dogs with compassion and scientific rationality—reflecting both constitutional duty and public health necessity.

NATIONAL ORGAN AND TISSUE TRANSPLANT ORGANISATION (NOTTO)

India's organ transplant system has seen a major policy update in 2025. The National Organ and Tissue Transplant Organisation (NOTTO) has issued a 10-point advisory to reduce gender disparity among transplant recipients. Women patients and relatives of deceased donors will now receive priority in organ allocation. This move aims to create a fairer and more transparent organ donation and transplantation process.



Recent Policy Changes

NOTTO's advisory instructs states and Union Territories to give additional points in organ allocation to women on waiting lists. It also suggests prioritising near relatives of deceased donors who need transplants.

The goal is to address longstanding gender imbalances in organ transplantation. The advisory calls for dignified funerals and public felicitation of deceased donors and their families to honour their contribution.

Allocation Criteria and Transparency

Current organ allocation follows criteria such as disease duration, waiting time, illness severity, and compatibility factors like blood group and size. NOTTO mandates a unique ID for every organ donor and recipient to ensure transparency.

Data from all transplant centres must be submitted to a national digital registry. Non-compliance may lead to legal action under the Transplantation of Human Organs and Tissues Act, 1994.

Infrastructure and Training Enhancements

The advisory urges states to establish permanent posts for transplant coordinators in hospitals performing organ transplants or retrievals. It also recommends developing organ retrieval facilities in trauma centres and medical colleges in phases.

Training emergency responders and ambulance staff is emphasised to identify potential deceased donors early, especially among accident and stroke victims.

Public Awareness and Participation

Since launching an Aadhaar-based online pledge system in 2023, over 3.3 lakh citizens have committed to organ donation. In 2024, India recorded a historic high of 18,900 organ transplants, rise from fewer than 5,000 in 2013.

The government plans to appoint state-level brand ambassadors to boost awareness and dispel myths surrounding organ donation.

Legal and Ethical Framework

The Transplantation of Human Organs and Tissues Act (THOTA), 1994, governs organ donation in India. The new advisory strengthens enforcement by linking compliance with legal consequences. It also stresses the need for equity and dignity in the transplant process. The policy aims to balance medical urgency with social justice, ensuring organs reach those most in need while reducing bias.

What Does the THOT Act, 1994 Say?

- **About:**
  - The law governs the transplantation of human organs and tissues in India, **including the donation of organs after death.**
  - It lays down regulations governing healthcare providers and hospitals, and stipulates penalties for violations.
- **Organ Donors and Recipients:**
  - A transplant can be **either from a pool of organs of deceased persons donated by their relatives or from a living person** who is known to the recipient.
  - In most cases, **the Act allows living donations from close relatives** such as parents, siblings, children, spouses, grandparents, and grandchildren.
- **Donations From Distant Relatives and Foreigners:**
  - **Altruistic donations from distant relatives,** in-laws, or long-time friends are allowed **after additional scrutiny** to ensure there is no financial exchange.

- Living donations from close relatives **involving Indians or foreigners** must be accompanied by documents establishing their identities, family trees, and pictures that prove the donor-recipient relationship.
    - **Donors and recipients are also interviewed.**

- **Donations from Unrelated Persons:**
    - Donations from unrelated persons **require documents and photographic evidence** to prove their long-term association or friendship with the recipient.
    - These are **examined by an external committee** to prevent illegal dealings.
- **Fines and Punishments:**
    - Offering to pay for organs or supplying them for payment; initiating, negotiating, or advertising such arrangements; looking for persons to supply organs; and abetting in preparing false documents can **attract a jail term up to 10 years and a fine up to Rs 1 crore.**

- **Formation of NOTTO:**
    - **National Organ and Tissue Transplant Organization (NOTTO)** is a National level organization set up under Directorate General of Health Services, Ministry of Health and Family.
    - This has been mandated as per the **Transplantation of Human Organs (Amendment) Act 2011.**
    - National Network division of NOTTO would function as apex centre for All India activities of coordination and **networking for procurement and distribution of Organs and Tissues** and registry of Organs and Tissues Donation and Transplantation in the country.

What Do the THOT Rules, 2014 Say?

- **Authorisation Committee:**
    - Rule 7 of the 2014 Rules provides for the **constitution of the Authorisation Committee** and the nature of enquiry and evaluation conducted by it.
    - Rule 7(3) says the **Committee must ensure there is no commercial transaction involved** in cases where the donor and recipient are not near relatives.
        - Rule 7(5) says that if a recipient is in a critical condition and needs transplantation within a week, the hospital can be approached for an expedited evaluation.
- **Living Donor Transplantations:**
    - For living donor transplantations, **Rule 10 describes the application process,** which requires joint applications by the donor and recipient.
    - **Rule 21 requires the Committee to personally interview applicants** and determine their eligibility to donate.

What is the Authorisation Committee?

- **About:**
    - The Authorisation Committee **oversees and approves organ transplant procedures** involving donors and recipients who are not near relatives.
    - This approval is crucial, **especially in cases where organs are donated for reasons of affection, attachment, or other special circumstances**, to ensure ethical compliance and prevent illegal practices.

- **Composition:**
  - **Section 9(4)** of the Act,1994 says the "composition of the Authorisation Committee shall be such as may be prescribed by the Central Government from time to time".
  - **State government and Union Territories** "shall constitute one or more Authorisation Committee consisting of such members as may be nominated by the State Government and the Union Territories."
- **Powers:**
  - Under Section 9(5), the Committee is **expected to conduct a thorough inquiry** while reviewing applications for transplant approval.
  - A crucial aspect of the inquiry is to **verify the authenticity of the donor and recipient**, and ensure that the donation is not driven by commercial motives.
- **Role of Parliament:**
  - Section 24 of the Act allows the Centre to make rules, **subject to parliamentary approval,** for carrying out the various purposes of the Act.
    - These can relate to the **manner and conditions under which a donor may authorise** the removal of their organs before death.
    - Also **how a brain-stem death is to be certified**, or the steps to be taken to preserve human organs removed from anyone, etc.

MERITE SCHEME

The Union Cabinet approved the MERITE Scheme to enhance technical education across India. It targets 275 government and government-aided institutions including engineering colleges, polytechnics, and technical universities.

The scheme aligns with the National Education Policy-2020 (NEP-2020) and aims to improve quality, equity, and governance in technical education.

MERITE Scheme

The MERITE (Multidisciplinary Education and Research Improvement in Technical Education) Scheme is a Central Sector initiative. It has a budget of Rs.4200 crore for 2025-26 to 2029-30. Half of the funding, Rs.2100 crore, comes as a World Bank loan.

The scheme covers all States and Union Territories, focusing on government engineering institutions, polytechnics, and affiliating technical universities.

Objectives and Key Benefits

MERITE aims to boost the quality and inclusivity of technical education. It promotes digitalisation, multidisciplinary programmes, and research innovation. Around 7.5 lakh students will benefit through enhanced learning and employability skills. The scheme supports faculty development, gender equity, and improved governance in technical institutions.

Implementation Strategy

The scheme will be implemented via a Central Nodal Agency. Funds will be transferred directly to participating institutions. Collaboration with premier bodies such as IITs, IIMs, AICTE, and NBA will ensure effective execution. State and UT departments will also receive support to strengthen local technical education ecosystems.

Employability and Skill Development

MERITE prioritises improving student employability. It includes curriculum updates aligned with industry needs, internships, and faculty training. Research hubs, incubation centres, skill labs, and language workshops will be established. These efforts aim to increase placement rates and reduce graduate unemployment in technical fields.

Research Enhancement

The scheme emphasises a strong research environment. It supports innovation through upgraded academic standards and multidisciplinary approaches. Development of future academic administrators, especially women faculty, is a key feature. Quality assurance and accreditation processes will be strengthened to sustain long-term improvements.

Alignment with National Education Policy-2020

MERITE's interventions reflect NEP-2020 reforms. These include revamping curricula, pedagogy, and assessments. The scheme addresses digital divides and gender gaps in technical education. Stakeholder consultations with States and UTs have shaped the scheme's design and focus areas.

CLIMATE CHANGE AFFECTING ALBEDO

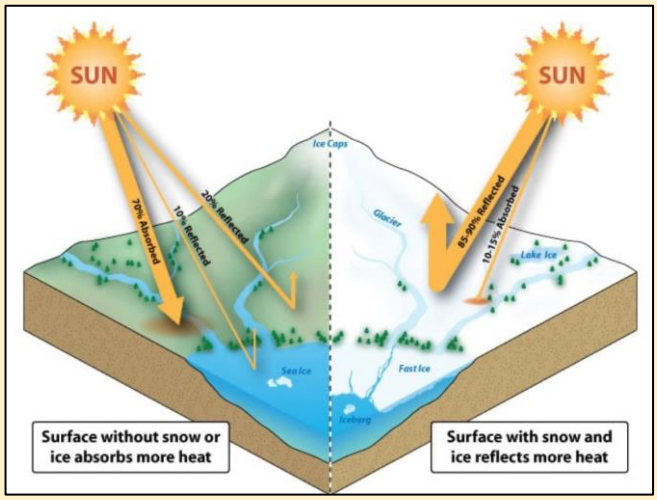
Albedo is a measure of the proportion of incoming sunlight that is reflected by a surface. It is a fundamental concept in climate science, influencing the Earth's energy balance, surface temperatures, and feedback processes such as ice–albedo interactions.

Variations in albedo occur naturally and through human activity, making it an important parameter in understanding and mitigating climate change.

Definition and Measurement

Albedo is expressed as a fraction between 0 and 1, where 0 represents a perfect absorber (a black body) and 1 represents a perfect reflector.

Surface albedo is calculated as the ratio of radiosity (total reflected radiation) to irradiance (total incident radiation) received by a surface. It depends not only on surface properties but also on the spectral and angular distribution of solar radiation, which vary with atmospheric conditions, location, and time of day.



Unless specified as spectral albedo (measured for a particular wavelength), the term refers to reflectance over the full solar spectrum, typically between 0.3 μm and 3 μm. For example, fresh snow can have an albedo of around 0.9, while charcoal reflects as little as 0.04. Earth's average albedo is approximately 0.3, with contributions from clouds, land, and ocean surfaces.

Types of Albedo

For land surfaces, albedo can be categorised as:

- **Black-sky albedo:** Reflectance under direct sunlight at a given solar zenith angle.
- **White-sky albedo:** Reflectance under diffuse light.
- **Blue-sky albedo:** A combination of the two, weighted by the proportion of direct and diffuse light.

The bidirectional reflectance distribution function (BRDF) is used to model how surface reflectance changes with viewing and illumination angles, enabling satellite-based albedo estimates.

Albedo and Climate Feedbacks

The ice–albedo feedback is a positive feedback mechanism in which melting ice reduces surface reflectivity, leading to further warming and additional ice loss.

Arctic ice, which is highly reflective, is particularly important in this process. As snow and ice retreat, darker surfaces such as ocean water or bare ground absorb more heat, accelerating regional and global warming.

Geographic and seasonal variations influence albedo's temperature effects. High-albedo polar regions remain cold due to low insolation, while deserts with similarly high albedo are hot due to intense sunlight. In tropical zones, changes in albedo can cause significant temperature fluctuations.

Human Influence on Albedo

Human activities such as deforestation, farming, and urbanisation alter local and regional albedo. Urban areas generally have lower albedo than surrounding croplands, contributing to the urban heat island effect. Increasing urban albedo by 0.1 globally has been estimated to produce a cooling effect equivalent to offsetting around 44 gigatonnes of CO_2 emissions.

Some large-scale land changes have produced measurable climatic effects. For example, the extensive greenhouses in Spain's Almería province increase local albedo, leading to slight surface cooling. Strategies such as Passive Daytime Radiative Cooling (PDRC) aim to enhance surface albedo and thermal emittance to counter global warming.

Recent Observations

Satellite data from instruments such as NASA's MODIS and CERES have enabled global albedo monitoring. Between 1998 and 2017, Earth's reflectivity decreased by about 0.5%, partly due to reduced cloud cover over the eastern Pacific. This dimming may have contributed to a 1.7 W/m² warming effect since 2010, equivalent to a rise in atmospheric CO_2 concentration of about 138 ppm.

TATO-II HYDRO ELECTRICAL PROJECT

Cabinet Approves 700 MW Tato-II Hydro Electric Project in Arunachal Pradesh

Project Highlights:

- **Capacity:** 700 MW (4 units of 175 MW each)
- **Annual Energy Output:** Approximately 2,738 million units
- **Implementing Agency:** Joint venture between North Eastern Electric Power Corporation Ltd. (NEEPCO) and the Government of Arunachal Pradesh
- **Budget Support:** Funds allocated for infrastructure including roads, bridges, transmission lines, and local area development
- **Completion Timeline:** 6 years

Benefits and Impact:

- Strengthens power supply in Arunachal Pradesh and contributes to national grid stability
- Arunachal Pradesh receives 12% free power and 1% for Local Area Development Fund (LADF)
- Infrastructure development including 33 km of roads and bridges, and support for local hospitals, schools, and markets.
- Promotes socio-economic growth via job creation, compensation, CSR activities, and support for local suppliers and MSMEs.

Recent Hydroelectric Projects in India

India has been actively expanding its hydroelectric capacity as part of its clean energy and regional development goals. Several major hydroelectric projects have been approved or are under construction since 2023, contributing to energy security, regional growth, and sustainable development.

Key Recent Hydroelectric Projects:

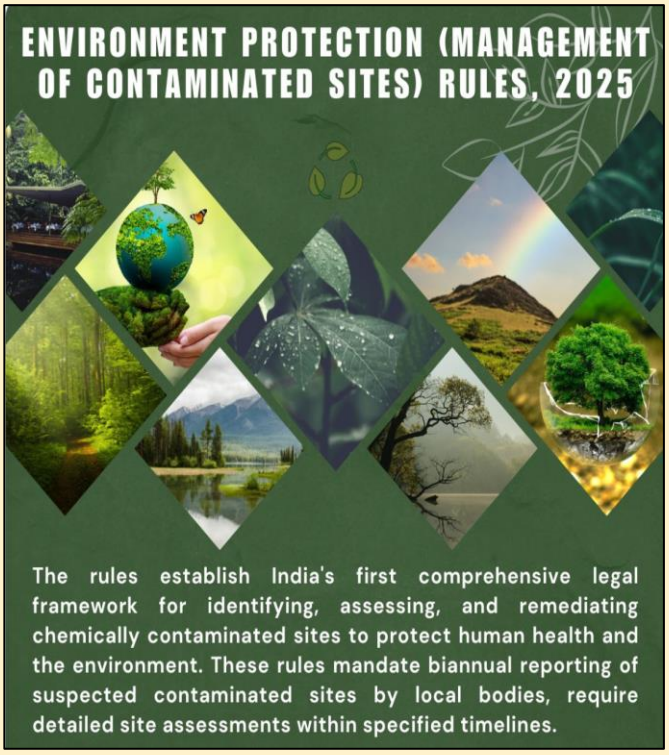
1. **Tato-II Hydro Electric Project, Arunachal Pradesh**
    - Capacity: 700 MW
    - Approved in 2025 with an investment of ₹8,146 crore
    - Focus on infrastructure development and local benefits including free power and employment
    - Expected completion: Within 6 years
2. **Subansiri Lower Hydro Electric Project, Arunachal Pradesh**
    - Capacity: 2,000 MW
    - Under construction with phased commissioning ongoing
    - Will be India's largest hydropower project upon completion
    - Key for grid stability and flood control in the Brahmaputra basin
3. **Dibang Multipurpose Project, Arunachal Pradesh**
    - Capacity: 2,880 MW
    - Construction progressing with focus on power generation, irrigation, and flood control
    - Strategic for Northeast's energy needs and flood management
4. **Teesta Stage IV Hydro Electric Project, Sikkim**
    - Capacity: 520 MW
    - Recently commissioned in parts since 2023
    - Enhances power supply in the Northeastern region and promotes local development
5. **Nathpa Jhakri Extension, Himachal Pradesh**
    - Capacity: 800 MW
    - Under construction to augment existing Nathpa Jhakri capacity
    - Aims to improve power generation efficiency in the Sutlej basin
6. **Bhakra Beas Management Board (BBMB) Projects, Himachal Pradesh and Punjab**
    - Several modernization and capacity enhancement projects ongoing since 2023
    - Focus on optimizing water resource utilization and electricity generation.

ENVIRONMENT PROTECTION (MANAGEMENT OF CONTAMINATED SITES) RULES, 2025

The Environment Ministry introduced the Environment Protection (Management of Contaminated Sites) Rules, 2025

The Environment Ministry introduced the Environment Protection (Management of Contaminated Sites) Rules, 2025. These rules provide a legal framework to identify, assess and remediate chemical contamination at hazardous sites across India.

Until now, such sites lacked a formal process despite their risks to health and environment. The new regulations mark step in addressing this longstanding issue.



Definition of Contaminated Sites

Contaminated sites are locations where hazardous wastes were dumped historically. These wastes have polluted soil, groundwater and surface water.

The pollution poses risks to human health and ecosystems. Such sites include landfills, waste dumps, spill areas, and chemical storage facilities. Many were established before regulations existed. Currently, 103 contaminated sites have been identified nationwide.

Need for Legal Framework

Earlier efforts included creating an inventory of sites and guidance for assessment and remediation. However, no legal structure existed to enforce cleanup or assign responsibility.

The 2025 rules fill this gap. They ensure accountability and establish clear procedures for managing contaminated sites. This legal backing is key to effective pollution control and environmental protection.

Assessment and Remediation Process

District administrations must submit half-yearly reports on suspected contaminated sites. State pollution boards or designated expert bodies conduct preliminary assessments within 90 days.

A detailed survey follows within three months to confirm contamination and measure hazardous chemical levels. The rules cover 189 hazardous chemicals identified under previous regulations. Confirmed contaminated sites are publicly notified and access may be restricted.

Responsibility and Funding

The expert body prepares a remediation plan for each site. The State board identifies polluters responsible for contamination within 90 days.

Those found liable must bear remediation costs. If polluters cannot pay, the Central and State governments fund cleanup. Criminal liability applies if contamination causes death or damage, under provisions of the Bharatiya Nyaya Sanhita (2023).

Exemptions and Limitations

The rules exclude radioactive waste, mining pollution, marine oil pollution and solid waste from dump sites. These are governed by separate laws. Another limitation is the absence of strict deadlines to complete remediation once a site is identified. This may affect timely restoration of contaminated lands.

BLUE PINKGILL

The Kagaznagar forest division in Komaram Bheem Asifabad district of Telangana has witnessed a rare burst of colourful fungi. The most remarkable discovery is the Blue Pinkgill mushroom (Entoloma hochstetteri), a species native to New Zealand.

This vivid blue mushroom is notable for its rare azulene pigments. Alongside, the shuttlecock mushroom (Clathrus delicatus) was recorded in the Kawal Tiger Reserve, marking its first sighting in the Eastern Ghats. These findings show the exceptional fungal diversity and ecological uniqueness of Telangana's forests.

Blue Pinkgill Mushroom

The Blue Pinkgill is also called the sky-blue mushroom. It has a striking bright blue cap and stems. The gills appear pink to purplish due to spores. Its colour comes from rare azulene pigments uncommon in fungi. Caps vary from flat to funnel-shaped. Gills can be pink or white, with spores producing a pink to salmon spore print. These features aid in its identification.

Native Habitat and Distribution

Originally native to New Zealand, the Blue Pinkgill grows in broadleaf forests. It thrives in soil rich with leaf litter. The mushroom appears mostly during monsoon when moisture is high and soil conditions are ideal. Its discovery in Telangana is unusual and suggests favourable ecological conditions in the forests of Komaram Bheem Asifabad district.

Ecological Significance

The recent sightings in Kagaznagar and Kawal Tiger Reserve reveal rich fungal biodiversity. The shuttlecock mushroom's presence in the Eastern Ghats extends its known range beyond the Western Ghats.

This challenges earlier habitat assumptions and indicates ecological connections between different mountain ranges. Such findings are vital for understanding forest ecosystem health and fungal diversity in India.

Role of Monsoon in Fungal Growth

Monsoon rains saturate forest floors, creating ideal conditions for fungi. Moisture and temperature influence fungal fruiting. The burst of colourful mushrooms each monsoon reflects seasonal ecological cycles. This also supports forest biodiversity by aiding decomposition and nutrient cycling.

Scientific and Academic Importance

Documenting rare fungi like Blue Pinkgill and shuttlecock mushrooms enriches mycological knowledge. It helps map species distribution and understand ecological niches. These discoveries encourage further research on fungal diversity in lesser-studied regions like Telangana's forests. They also show the need for forest conservation to protect such unique biodiversity.

DARDANELLES STRAIT

Turkey recently suspended all shipping traffic through the Dardanelles Strait due to extensive forest fires in the Çanakkale province. The Ministry of Transport announced the temporary closure, affecting the usual flow of about 100 ships daily. This event marks the strait's ongoing strategic and environmental significance.

Geographical Overview

- The Dardanelles is a narrow strait in northwestern Turkey.
- It stretches 61 kilometres long and varies between 1.2 and 6.5 kilometres wide.
- It connects the Aegean Sea to the Sea of Marmara.
- The strait lies between the Gallipoli peninsula in Europe and the Asian mainland of Anatolia.
- Its depth averages 55 metres with a maximum of 90 metres in the narrowest part.
- The strait features a surface current flowing from the Sea of Marmara to the Aegean and an undercurrent moving in the opposite direction.

Strategic and Economic Importance

- The Dardanelles forms part of the Turkish Straits along with the Bosphorus.
- These straits link the Mediterranean and Aegean Seas to the Black Sea.
- This route is crucial for maritime trade and naval passage.
- Important ports on the strait include Gallipoli, Eceabat, and Çanakkale.
- The waters are rich in fish species migrating between seas.
- The strait's control has long impacted regional power dynamics and commerce.

Historical Significance

Historically known as the Hellespont, the strait has deep cultural and military importance. It features in Greek mythology through the legend of Hero and Leander. The ancient city of Troy guarded its Asian shore.

In 480 BCE, Xerxes I's Persian army crossed it via a bridge of boats. Alexander the Great followed in 334 BCE. The strait was a focal point in many conflicts, including World War I, when Allied forces attempted to seize control. Its strategic position as a gateway to Istanbul and the Black Sea has shaped international politics.

Environmental and Recent Crisis

Recently, severe forest fires near Sarıcaeli village led to the closure of the strait. The fires spread rapidly from agricultural land into forests. Emergency services evacuated a care home and university campus nearby.

Firefighters faced extreme challenges, including abandoning vehicles due to advancing flames. Weather warnings forecast strong winds, which could worsen the fires. The closure disrupted maritime traffic and raised concerns about environmental damage and economic impact.

SEA OF GALILEE

The Sea of Galilee in Israel displayed an unusual red hue over several days. Israeli authorities have investigated and explained the phenomenon as a natural occurrence linked to algae growth. The event marks growing concerns about climate change and its impact on freshwater ecosystems worldwide.

Red Colouration

The Sea of Galilee, Israel's largest freshwater lake, changed colour to red due to an algal bloom. Officials confirmed the water remains safe for humans. The green algae Botryococcus braunii, common in the lake, produces red pigments under sunlight. This pigment accumulation caused the striking red tint. The Water Ministry continues to monitor the lake's water quality and ecosystem health.

Botryococcus Braunii

Botryococcus braunii is a green algae from the Chlorophyta group. It produces carotenoid pigments that turn red in sunlight. Known for producing hydrocarbons, this algae is studied for biofuel potential. Its sudden bloom in the Sea of Galilee is unusual but not harmful to humans. Similar algae blooms have been recorded in Israel before, including in the Dead Sea area in 2022.

Algae Blooms and Climate Change

Global warming increases sea and lake temperatures, creating ideal conditions for algae blooms. Nutrient levels, especially nitrogen and phosphorus, further boost algae growth. These blooms can harm aquatic ecosystems by blocking sunlight and reducing oxygen when algae decompose. The Sea of Galilee's red algae bloom is part of a wider pattern linked to climate change impacts on freshwater bodies.

Geographical and Historical Significance of the Sea of Galilee

The Sea of Galilee is about 21 km long and 13 km wide, covering 166 km². It lies 209 metres below sea level, making it the lowest freshwater lake on Earth.

Fed mainly by the Jordan River, it sits in the Jordan Rift Valley formed by tectonic plate movements. The lake is known by several names, including Lake Tiberias and Yam Kinneret. It holds biblical importance and remains a vital source of fish and tourism.

Ecological Concerns and Monitoring

Though the algae bloom does not pose a direct health risk, it threatens the lake's ecosystem. Thick algae layers reduce sunlight penetration, affecting underwater life. Oxygen depletion from algae decay can cause hypoxia, endangering fish and other organisms. Continuous monitoring by Israeli authorities aims to manage these risks and preserve the lake's ecological balance.

CONSTITUTION (ONE HUNDRED AND THIRTIETH AMENDMENT) BILL, 2025

The Constitution (One Hundred and Thirtieth Amendment) Bill, 2025, has recently stirred intense debate in the Indian Parliament. Amid uproar in the Lok Sabha, the Bill was referred to a Joint Parliamentary Committee for detailed examination.

The Bill proposes changes to Article 75 of the Constitution, focusing on the disqualification of ministers detained for serious offences. This article explains the Bill's provisions, parliamentary response, and the role of the Joint Committee.

Provisions of the 130th Amendment Bill

The Bill mandates that any minister arrested and detained for thirty consecutive days on charges of serious offences punishable by five years or more imprisonment shall lose their ministerial post.

The President will remove such a minister on the advice of the Chief Minister by the thirty-first day of detention. If the Chief Minister fails to advise removal, the minister will automatically cease to hold office. However, the Bill allows the minister to be reappointed after release from custody.

Amendment to Article 75

Article 75 currently outlines the appointment and responsibilities of the Council of Ministers. This amendment adds a clause to ensure ministers detained for serious criminal allegations cannot hold office beyond thirty days. The Bill aims to uphold constitutional morality and good governance by preventing detained ministers from exercising power.

Opposition Concerns

The Bill faced strong opposition in Parliament. Critics argue it violates the presumption of innocence by punishing ministers on arrest rather than conviction.

Opposition parties fear misuse of the Bill to target political rivals and destabilise state governments. Allegations were made that central investigative agencies could be used selectively against opposition leaders.

Leaders like Mamata Banerjee described the Bill as a threat to democracy and federalism, warning it could lead to authoritarian control. AIMIM's Asaduddin Owaisi criticised the Bill for undermining the separation of powers by making the executive act as judge and executioner.

Joint Parliamentary Committee

The Bill was referred to a Joint Parliamentary Committee (JPC) comprising members from both Houses of Parliament. The JPC's task is to scrutinise the Bill in detail and submit a report before the next parliamentary session.

Such committees are temporary and dissolve after completing their mandate. While their recommendations carry persuasive weight, they are not binding on the government.

Implications

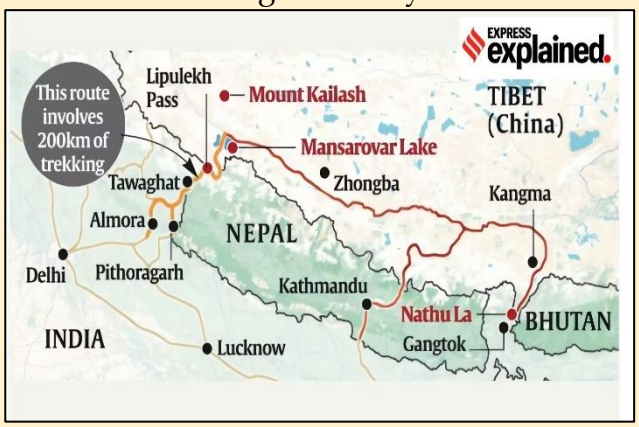
The Bill's focus on removal based on arrest challenges established legal principles, including the presumption of innocence. It introduces a new threshold for ministerial accountability, potentially increasing political instability.

The provision for reappointment after release offers some flexibility but does not fully address concerns about misuse. The Bill marks ongoing tensions between governance reforms and protection of democratic rights.

LIPULEKH PASS

India announced the resumption of border trade with China through the Lipulekh Pass in Uttarakhand. Nepal objected strongly, claiming the area as its territory. India rejected Nepal's objections citing historical evidence and long-standing trade practices since 1954.

The dispute involves the tri-junction region of Kalapani, Limpiyadhura, and Lipulekh, which Nepal includes in its official map and constitution. India insists the claims are baseless and invites Nepal for dialogue to resolve outstanding boundary issues.



Historical Background

The India-Nepal border was defined by the 1816 Sugauli Treaty, which set the Kali River as the boundary. Nepal claims the river's source lies at Limpiyadhura, placing Kalapani and Lipulekh within its territory. India argues the river originates further downstream, making these areas part of Uttarakhand. Both countries rely on British-era maps to support their claims. The dispute has persisted since the 1960s without final resolution.

Significance

Lipulekh Pass is a strategic mountain pass connecting India and China. It serves as a route for the annual Kailash Mansarovar pilgrimage.

The road to the pass was upgraded by India in 2020 to improve accessibility for pilgrims and traders. This road enhances India's strategic presence near the Line of Actual Control (LAC) with China. The pass also facilitates India-China border trade during summer months.

Diplomatic Developments and Tensions

Nepal's objections intensified after India's road construction and the resumption of trade through Lipulekh. Nepal's government insists that these actions violate bilateral agreements to resolve disputes through dialogue.

India maintains that trade through Lipulekh has been ongoing for decades and that Nepal's claims lack historical basis. Diplomatic talks have been proposed but delayed due to the Covid-19 pandemic and political factors.

India-China-Nepal Trijunction Dynamics

The tri-junction area holds strategic importance for India amid growing China influence in South Asia. India deployed border security forces in Kalapani after the 1962 war with China.

Nepal views this as encroachment. China remains officially neutral but supports India-China trade expansion through Lipulekh. The region's strategic value has increased due to geopolitical tensions and infrastructure development by India and China.

Impact on India-Nepal Relations

The border dispute has strained India-Nepal relations. Nepal's perception of India's actions as unilateral has increased distrust. Political changes in Nepal, especially under Prime Minister K P Sharma Oli, have seen a tilt towards China.

India's perceived support for blockades in Nepal and border disagreements have further complicated ties. Despite open borders and people-to-people contact, diplomatic engagement remains cautious and sensitive.

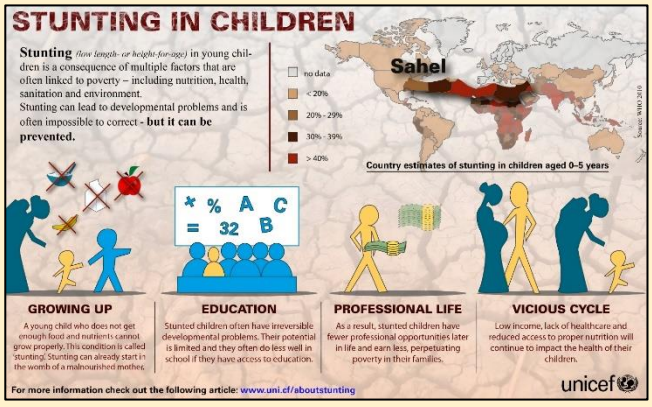
CHILD STUNTING

Context :

- Stunting remains one of the most pressing public health and development challenges in India despite decades of interventions.
- According to **Poshan Tracker (June 2025)**, **37% of children under five** in India are stunted – only a **1% decline from 2016 (38.4%)**, showing minimal progress despite ambitious targets under *POSHAN Abhiyaan*.

What is Child Stunting?

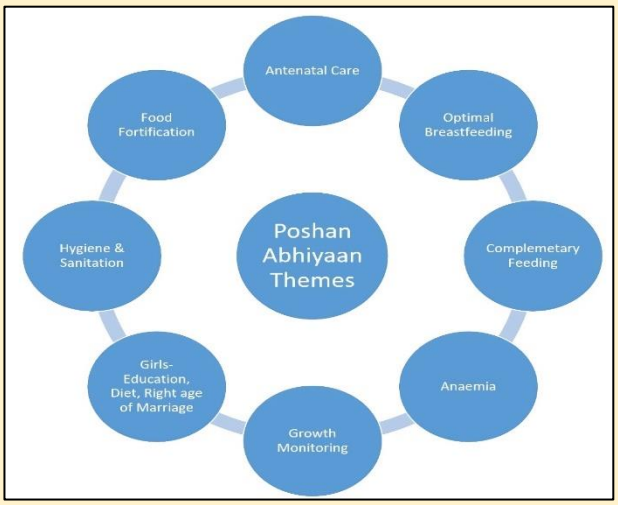
- Stunting is the impaired growth and development that children experience from poor nutrition, repeated infection, and inadequate psychosocial stimulation.
- Children are defined as stunted if their height-for-age is more than two standard deviations below the WHO Child Growth Standards median.
- Stunting in children is primarily caused by a combination of poor nutrition, repeated infections, and inadequate psychosocial stimulation, particularly during the critical first 1,000 days of life.
- Stunting in early life — particularly in the first 1000 days from conception until the age of two – impaired growth has adverse functional consequences on the child.
- It may lead to poor cognition and educational performance, low adult wages, lost productivity and, when accompanied by excessive weight gain later in childhood, an increased risk of nutrition-related chronic diseases in adult life.



In 2018, when POSHAN Abhiyaan was launched, the government had set a target to reduce stunting among children in India by at least 2% points each year.

About POSHAN Abhiyaan

- Envisions a **"Suposhit Bharat" (Nourished India)** by reducing malnutrition and improving nutritional outcomes for women and children.
- Acts as a **platform for 18 Ministries/Departments** to work together. Ensures that nutrition-related schemes across health, sanitation, women empowerment, and food security sectors converge effectively.
- Prioritises interventions during the **critical window from conception to two years of age**.
- Aims to **reduce stunting, anaemia, and low birth weight**.
- Target: *reduce stunting by 2 percentage points per year* and achieve **25% stunting by 2022 (Mission 25 by 2022)**.
- Introduced the **Poshan Tracker (ICT-based monitoring system)** to track nutrition indicators in real time.
- Aims to improve accountability, transparency, and evidence-based planning.
- Encourages a **people's movement for nutrition** involving communities, local bodies, and civil society.



Data

- In **2016 38.4% of children under five** in India were stunted (NFHS-4 baseline).
- As per **POSHAN Abhiyaan target**, stunting was to decline by **2 percentage points per year**, reaching **26.4% by 2022**.

- Despite ambitious targets, progress has been **slower than expected** (stunting reduced marginally from 38.4% in 2016 to 37% in 2025).
- Reflects **systemic issues** like poverty, lack of women's education, sanitation gaps, and uneven Anganwadi capacity.

Factors Behind Persistent Stunting

Maternal Health & Early Pregnancy

- Teenage pregnancies remain a major contributor, with 7% of women aged 15–19 having begun childbearing (NFHS-5, 2019-21).
- Adolescent mothers are physically not prepared for healthy pregnancies, leading to low-birth-weight babies who are more vulnerable to growth failures.

- Early motherhood also reduces the ability of young women to care for infants adequately, **creating an intergenerational cycle of malnutrition.**

Maternal Education

- Education of mothers has a direct impact on child nutrition.
- Data shows that 46% of children born to uneducated mothers are stunted, compared to only 26% among children of mothers with 12+ years of schooling.
- Educated mothers are more likely to access antenatal care, adopt balanced nutrition, and delay early pregnancies, leading to healthier children.

Anaemia & Maternal Nutrition

- 57% of women (15–49 years) and 67% of children under five are anaemic (NFHS-5).
- Poor maternal health results in inadequate foetal growth, which manifests as low-birth-weight babies.
- Inadequate intake of micronutrients, especially iron and folic acid, further deepens the malnutrition crisis.

Infant Feeding Practices

- Only 64% of babies under 6 months are exclusively breastfed in India.
- High rate of C-section deliveries (22% in 2021) disrupts early breastfeeding, depriving infants of colostrum—the nutrient-rich first milk crucial for immunity.
- Further salaried women in formal jobs often have maternity leave benefits, women in the informal sector (domestic workers, daily wage earners) often resume work within weeks, cutting short breastfeeding and proper child care.

Quality of Diet

- Merely 11% of children under 2 years receive a minimum acceptable diet
- Most poor households consume carbohydrate-heavy meals (rice, wheat) with low protein and micronutrient intake.
- Some states have introduced eggs in Anganwadi meals, but coverage is uneven, and dietary diversity remains poor.

Sanitation & Water

- Despite progress under Swachh Bharat Mission, 19% of households still practice open defecation (2019–21).
- Contaminated water and poor sanitation cause repeated diarrhoea and gut infections, reducing the body's ability to absorb nutrients.
- A vicious cycle emerges as malnourished children fall ill more often, illness further reduces food absorption, and this worsens malnutrition.

Way Forward

- Strengthen Maternal & Adolescent Health by providing universal access to adolescent health programmes.
- Delay age of marriage and pregnancy.
- Expand iron-folic acid and micronutrient supplementation.
- Ensure universal secondary education for girls.

- Promote schemes like Beti Bachao Beti Padhao with focus on nutrition and reproductive health.
- Enforce maternity benefits for informal sector workers.
- Promote early breastfeeding and diversify ICDS/Anganwadi meals with protein-rich foods (milk, eggs, pulses).
- Strengthen Swachh Bharat Mission beyond toilet construction.
- Ensure piped drinking water through Jal Jeevan Mission.
- Encourage decentralised nutrition planning.
- Strengthen Anganwadi worker training and community-based nutrition education.

Stunting in India is not just a health issue but a reflection of **deep-rooted social, economic, and governance challenges**.
While *POSHAN Abhiyaan* was ambitious, progress has been sluggish due to structural bottlenecks.
To break the **cycle of intergenerational deprivation**, India needs a holistic approach integrating maternal health, education, sanitation, poverty alleviation, and dietary diversification. Without addressing these systemic issues, the vision of a **malnutrition-free India** will remain elusive.

ALASKA SUMMIT 2025

The August 2025 Alaska Summit between United States President Donald Trump and Russian President Vladimir Putin marked moment in global diplomacy.

However, its impact on India's foreign policy and bilateral ties with the US and Russia remains complex and uncertain. India's strategic interests faced challenges as the summit failed to produce clear outcomes beneficial to New Delhi.

Alaska Summit Overview
The Trump-Putin meeting showed warmth but no major policy shifts. India hoped the summit would ease US pressure over its ties with Russia. Expectations included rollback of US secondary sanctions on India's Russian oil imports and resumption of stalled India-US trade talks.
These hopes were dashed as US maintained a tough stance, with Trump's senior advisor, Peter Navarro, affirming punitive tariffs aimed at India.
US Sanctions and Trade Tensions
The US imposed 25% secondary sanctions on India for buying Russian oil. Reciprocal tariffs also remain in place, affecting India's exports.

The sanctions appear more about geopolitical signalling than consistent policy, given US trade with Russia and China's larger Russian oil imports. India's refusal to credit Trump for mediating India-Pakistan ceasefire further strained ties.

India's Diplomatic Challenges
India's reliance on personal diplomacy under Prime Minister Narendra Modi showed limitations. Despite multiple high-profile meetings with US and Chinese leaders, India could not prevent tensions or policy setbacks. The summit brought into light the need to prioritise substantive agreements over ceremonial diplomacy.

Strategic Autonomy and Global South Support

India's principle of adhering only to UN-mandated sanctions faced tests. Compliance with US demands on Iranian and Venezuelan oil earlier may have encouraged further pressure on Russian oil imports.

Resisting such pressure has won India support among Global South countries and affirmed its strategic autonomy, though it risks economic costs.

Future Diplomatic Directions

India's upcoming engagements include visits to Japan, China, the US, and South Africa, and hosting the Quad Summit.

These offer opportunities to diversify partnerships and reduce dependence on any single power. A more assertive stance is needed to counteract US tariffs and sanctions that harm India's economy and sovereignty.

NOMINATION POWERS OF LIEUTENANT GOVERNOR (LG)

The Union Home Ministry told the J&K and Ladakh High Court that the Lieutenant Governor (LG) of J&K can nominate five members to the Legislative Assembly without consulting the Council of Ministers

Constitutional Provisions

- Indian Constitution allows nominated members in both Parliament and State legislatures (e.g., Anglo-Indian members, Rajya Sabha's 12 nominees).
- In States with Legislative Councils, Governors nominate one-sixth members on advice of State government.

Union Territories

- **UT Assemblies** (Delhi, Puducherry, J&K) follow Acts of Parliament:
  - **Delhi Assembly** – No nominated MLAs.
  - **Puducherry** – Up to 3 nominated MLAs by the Central Government (Government of UT Act, 1963).
  - **J&K Assembly** – LG may nominate 2 women, 2 migrants, and 1 displaced person from PoK.

Judicial View

- **Madras High Court (2018)** upheld Centre's power to nominate Puducherry MLAs.
- **Supreme Court (2023, Delhi Services case)** emphasized the "triple chain of accountability":
  - Civil servants → Ministers → Legislature → People.
  - LG is bound by advice of Council of Ministers in all legislative matters (except Delhi services).

Concerns & Suggestions

- Nomination of MLAs should not be arbitrary—needs clear procedure and should flow from elected governments, not just LG/Centre.
- Otherwise, risks arise:
  - Converting majority into minority in Assemblies.
  - Undermining democratic accountability.

Learning Corner:

National Capital Territory of Delhi

- **Constitutional Provision:** Article 239AA (added by 69th Amendment, 1991)
- **Legislature:** Unicameral Legislative Assembly
- **Council of Ministers:** Headed by Chief Minister
- **Powers:**
  - Can legislate on State List and Concurrent List subjects except Police, Public Order, and Land.
    - Lieutenant Governor (LG) acts as the representative of the President/Union Government.

- LG can reserve certain bills for the President's consideration.
- **Union Government Role:** Retains control over critical subjects (Police, Public Order, Land) and overall administrative oversight through the LG.

Puducherry

- **Constitutional Provision:** Article 239A (added by 14th Amendment, 1962)
- **Legislature:** Unicameral Legislative Assembly
- **Council of Ministers:** Headed by Chief Minister
- **Powers:**
  - Can legislate on State List and Concurrent List subjects.
  - Lieutenant Governor has discretionary powers and can act independently of the Council of Ministers in certain cases.
- **Union Government Role:** Maintains administrative control through the LG and can override decisions in specific matters.

Jammu & Kashmir Legislative Assembly

Type and Composition

- **Type:** Unicameral Legislative Assembly
- **Total Seats:** 90 members
  - Elected: 87 members through direct elections from territorial constituencies
  - Nominated: Up to five members by the Lieutenant Governor, if required

Term

- **Duration:** 5 years, unless dissolved earlier by the **Lieutenant Governor**

Leadership

- **Speaker:** Presides over the Assembly, responsible for maintaining order and conducting proceedings
- **Deputy Speaker:** Assists the Speaker and presides in their absence
- **Chief Minister & Council of Ministers:** Executive authority responsible for governance; answers to the Assembly

Powers and Functions

- **Legislative:** Can make laws on subjects in the State List and Concurrent List, except matters reserved for the Union Government
- **Financial:** Approves budget and expenditure; no money bill can be passed without LG's recommendation
- **Oversight:** Monitors the executive through question hour, debates, and motions of no-confidence

Role of Union Government

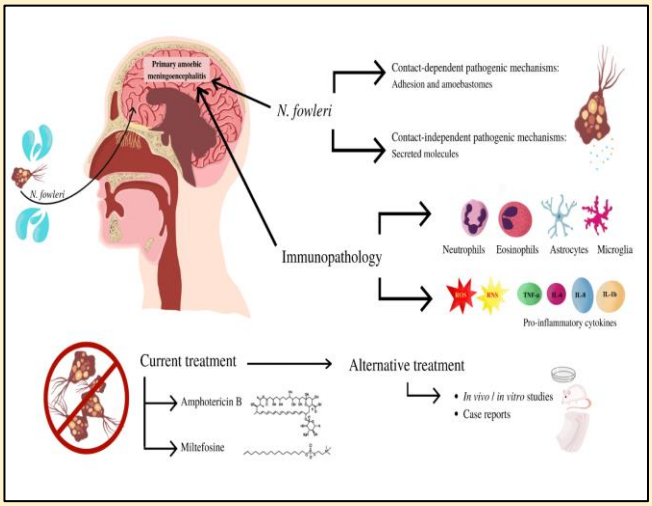
- **Lieutenant Governor (LG):** Acts as the representative of the President; can reserve bills for President's consideration
- **Union Oversight:** Union Government retains authority on critical subjects like Public Order, Police, and Land

PRIMARY AMOEBIC MENINGOENCEPHALITIS (PAM)

A brain-eating amoeba, has caused the death of a child and infected two others in Kerala's Kozhikode

The infection, called primary amoebic meningoencephalitis (PAM), is extremely rare but nearly always fatal, with a global fatality rate of about 97%.

The amoeba thrives in warm freshwater such as ponds, lakes, and rivers, and infects people through the nose while swimming—not through drinking water. Symptoms appear within 1–18 days and include headache, fever, nausea, vomiting, altered mental state, and can progress to coma.



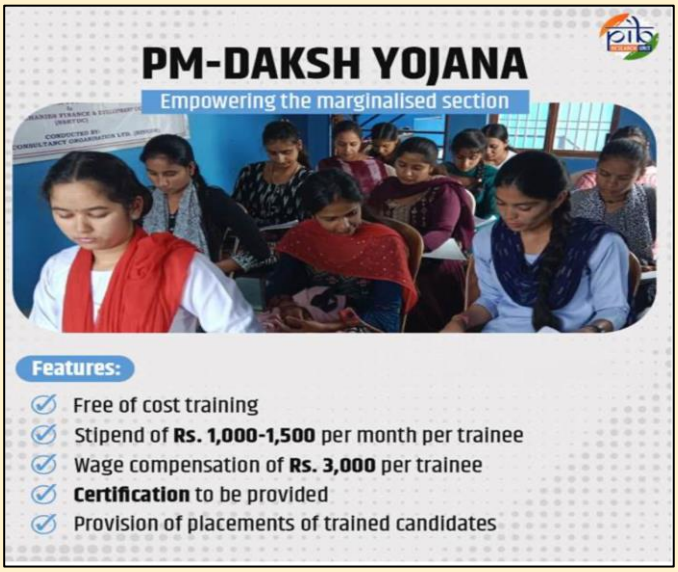
There is no proven effective treatment, though drug combinations are attempted and survival is rare. Kerala has reported rising cases, possibly due to unclean water sources and environmental changes, with most infections occurring in children and young people using poorly maintained swimming areas.

Naegleria fowleri: The "Brain-Eating Amoeba"

- **Nature & Habitat:**
  Naegleria fowleri is a free-living, thermophilic (heat-loving) amoeba found in warm freshwater bodies such as lakes, hot springs, rivers, and poorly maintained swimming pools.
- **Disease Caused:**
  It causes Primary Amoebic Meningoencephalitis (PAM), a rare but almost always fatal brain infection.
- **Mode of Transmission:**
  Infection occurs when contaminated water enters the body through the nose (not by drinking water). The amoeba travels via the olfactory nerve to the brain, destroying brain tissue.
- **Symptoms:**
  Initial – headache, fever, nausea, stiff neck;
  Advanced – confusion, seizures, hallucinations, coma. Death usually occurs within 1–2 weeks.
- **Geographic Presence:**
  Mostly reported in the USA, South Asia, and other warm climates. Cases are often linked to recreational water exposure in hot weather.
- **Treatment & Challenges:**
  No universally effective cure. Drugs like Amphotericin B, miltefosine, and azithromycin have been used in combination therapy with limited success. Early diagnosis is critical but very difficult.
- **Public Health Importance:**
  Extremely rare, but high fatality rate (>97%) makes it a serious health concern. Preventive measures include avoiding water entry into the nose during swimming in warm freshwater.

PM-DAKSH (PRADHAN MANTRI DAKSHTA AUR KUSHALTA SAMPANN HITGRAHI)

Aims to provide skill training, upskilling, and entrepreneurship support to marginalized groups like SCs, OBCs, EBCs, DNTs, sanitation workers, waste pickers, artisans, persons with disabilities, and their dependents



Key Features:

- **Training Types:** Short-term/long-term training, reskilling, Recognition of Prior Learning (RPL), and entrepreneurial development.
- **Curriculum:** Based on NSQF standards, covering trades like tailoring, food processing, carpentry, digital literacy, and financial literacy.
- **Artisan Support:** Upskilling of traditional artisans with modern techniques and designs.
- **Training Institutes:** Empanelled centres with biometric attendance, placement tie-ups, and strict monitoring.
- **Placement Benchmark:** At least 70% of trainees must be employed or self-employed.
- **Online Access:** Registration and course selection via PM-DAKSH portal and app.

Impact:

- Over 1.8 lakh individuals trained so far, with significant employment/self-employment outcomes.
- Helps in socio-economic empowerment of disadvantaged communities through wage employment and entrepreneurship.

Learning Corner:

Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

- **Launched:** 2015 under Ministry of Skill Development & Entrepreneurship (MSDE).
- Provides short-term training (3–6 months) aligned with NSQF.
- Focus: industry-relevant skills, certification, placement.
- Training through National Skill Development Corporation (NSDC).

Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)

- **Target group:** Rural poor youth (15–35 years).
- Part of National Rural Livelihood Mission (NRLM).
- Focus: wage employment through skill training with placement linkages.

National Apprenticeship Promotion Scheme (NAPS)

- Incentivizes industries to engage apprentices.
- Government shares 25% of prescribed stipend (up to ₹1,500 per month) with employers.
- Encourages "earn while you learn" model.

Skill India Mission

- Umbrella mission launched in 2015 to train over 40 crore youth by 2022.
- Brings multiple schemes like PMKVY, NAPS, NSDC initiatives under one framework.

Jan Shikshan Sansthan (JSS)

- Community-based skill development programme.
- Focuses on non-literate, neo-literate, school dropouts, and women in rural areas.
- Provides life-enrichment and vocational skills at minimal cost.

National Skill Development Corporation (NSDC) Initiatives

- PPP model to promote sector skill councils (SSCs).
- Supports private training providers, vocational training, digital skilling.

SANKALP (Skill Acquisition and Knowledge Awareness for Livelihood Promotion)

- World Bank-supported project.
- Focus: institutional reforms, quality improvement, and skilling convergence.
- Strengthens State Skill Missions & District Skill Committees.

STRIVE (Skill Strengthening for Industrial Value Enhancement)

- World Bank-assisted scheme.
- Strengthens Industrial Training Institutes (ITIs), promotes industry-institute partnerships.

Other Targeted Programs

- **UDAAN:** For youth of Jammu & Kashmir (special employment-linked skill scheme).
- **Nai Manzil:** For minority youth (bridging education + skill training).
- **Seekho aur Kamao:** Skill development for minority youth with placement assistance.
- **Vocationalization of School Education:** Integrating skills into school curriculum under Samagra Shiksha Abhiyan and NEP 2020.

SALTWATER CROCODILE

The saltwater crocodile population in Bengal's Sundarban Biosphere Reserve has increased significantly compared to 2024, with the latest survey.

Estimating 220–242 individuals, including 125 adults, 88 juveniles, and 23 hatchlings. The encounter rate is one crocodile per 5.5 km of surveyed area.
This growth reflects effective conservation measures such as systematic surveys, GPS mapping, and the Bhagabatpur breeding facility established in 1976.

As apex predators, saltwater crocodiles play a crucial role in maintaining the ecological balance of India's coastal, mangrove, and riverine ecosystems.

Saltwater Crocodile (Crocodylus porosus)

- **Distribution:** Found in India, Southeast Asia, Northern Australia; in India mainly in Sundarbans (West Bengal), Bhitarkanika (Odisha), Andaman & Nicobar Islands.
- **Habitat:** Estuaries, tidal rivers, mangroves, coastal wetlands, and even open seas (excellent swimmers).
- **Ecological Role:** Apex predator, regulates prey populations, maintains food web stability in mangroves and estuarine ecosystems.

- **Conservation Status:**
  - *IUCN Red List:* Least Concern (but locally threatened).
  - *Wildlife (Protection) Act, 1972:* Schedule I (highest protection).
  - *CITES:* Appendix I (trade prohibited).
- **Threats:** Habitat loss (shrinking mangroves), climate change, poaching, human-crocodile conflict.
- **Conservation Efforts:** Breeding programs (e.g., Bhagabatpur Crocodile Project, Odisha's Bhitarkanika Sanctuary), habitat protection, systematic surveys, GPS mapping.

Sundarban Biosphere Reserve

- **Location:** Covers parts of West Bengal in the delta of the Ganga, Brahmaputra, and Meghna rivers.
- **Area:** ~9,630 sq. km (includes core, buffer, and transition zones).
- **UNESCO Status:** Recognized as a UNESCO Biosphere Reserve (1989) **and** World Heritage Site (1987)**.**
- **Unique Feature:** World's largest mangrove forest and the only mangrove habitat of the **Royal Bengal Tiger**.

- **Flora & Fauna:**
  - Mangrove species like Sundari (Heritiera fomes), gewa, keora.
  - Fauna includes Royal Bengal Tiger, saltwater crocodile, fishing cat, estuarine crocodiles, olive ridley turtles, spotted deer, Gangetic dolphins, horseshoe crabs**.**
- **Zonation:**
  - *Core Area:* Sundarban National Park (tiger reserve & critical habitat).
  - *Buffer Zone:* Sajnekhali Wildlife Sanctuary and adjoining forests.

- **Ecological Role:** Protects inland areas from cyclones and tidal surges, acts as a carbon sink, and supports coastal biodiversity.
- **Threats:** Rising sea levels, climate change, frequent cyclones, human encroachment, and salinity intrusion.
- **Conservation Initiatives:** Project Tiger, crocodile breeding at Bhagabatpur, mangrove afforestation, community-based eco-development.

IKSHAK

The Indian Navy received Ikshak, the third of four Survey Vessel (Large) (SVL) ships

Ikshak is the 102nd ship designed by the Navy's Warship Design Bureau. Its keel was laid on 6 August 2021, launched on 26 November 2022, and underwent harbour and sea trials before delivery.

Key Highlights

- **Purpose:** Coastal and deep-water hydrographic surveys; oceanographic and geophysical data collection for defence and civil applications
- **Specifications:** 3,400-ton displacement, 110 meters long, speed over 18 knots; equipped with advanced hydrographic equipment including data acquisition systems, autonomous underwater vehicle, DGPS, and digital side-scan sonar
- **Indigenous Content:** Over 80% by cost
- **First SVL with Women's Accommodation:** Accommodates women officers and sailors
- **Significance:** Enhances India's survey capabilities, supports Aatmanirbhar Bharat initiative.

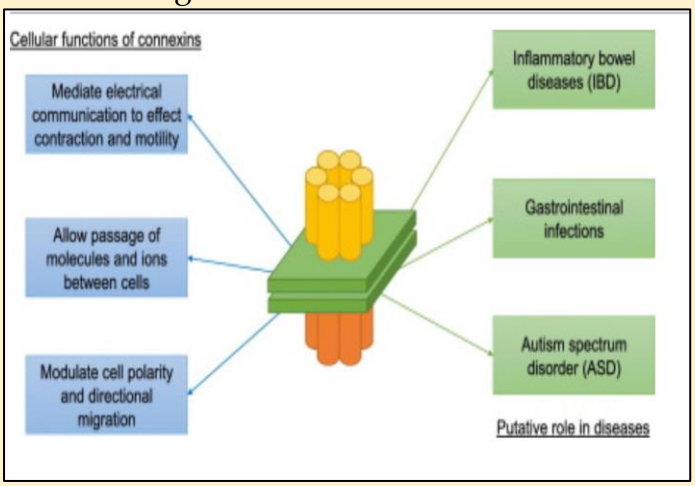
Survey Vessel (Large) (SVL) Ships

- **Definition & Purpose:**
  SVL ships are naval vessels designed for hydrographic surveys, oceanographic research, and geophysical data collection. They support both defence operations and civil applications such as charting, seabed mapping, and port development.
- **Builders & Design:**
  - Built indigenously by Garden Reach Shipbuilders & Engineers (GRSE), Kolkata.
  - Designed by the Indian Navy's Warship Design Bureau.
  - High indigenous content (over 80% by cost).
- **Specifications (Typical for SVL Ships like Ikshak):**
  - Displacement: ~3,400 tons
  - Length: ~110 meters
  - Speed: Over 18 knots
  - Equipped with advanced hydrographic equipment:
    - Data Acquisition and Processing System (DAPS)
    - Autonomous Underwater Vehicle (AUV)
    - DGPS, multi-beam echo sounders, digital side-scan sonar
- **Operational Significance:**
  - Conduct coastal and deep-water hydrographic surveys.
  - Aid in oceanographic, geophysical, and cartographic research.
  - Enhance India's maritime domain awareness and naval operational capabilities.
- **Special Features:**
  - First SVL ships like Ikshak include accommodation for women officers and sailors, promoting inclusivity.
- **Fleet:**
  - Current SVL ships include INS Sandhayak, INS Nirdeshak, Ikshak, and one more under construction.

CONNEXIN PROTEINS

- Researchers identified Connexin proteins (Cx37 and Cx40) as key to rapid blood flow coordination.
- These proteins form gap junctions that link artery walls, allowing electrical-like signals to travel faster than chemical messengers.
- In mice, these signals moved fuel-delivery instructions across vessels at nearly the speed of neurons firing.

- **Findings:**
  - Gap junction signalling enables arteries to widen quickly and in sync, ensuring timely delivery of blood to active brain regions.
  - Blocking connexins slowed the signal, proving their role in high-speed vascular coordination.
- **Significance:**
  - Helps explain how the brain prevents lapses in attention or function.
  - Offers insights for disease research—loss of gap junction function in aging or small vessel disease may impair brain blood flow.
  - Valuable for AI-guided brain models, stroke research, and drug delivery strategies.



Connexin Proteins

- **Connexins** are a family of **membrane proteins** that form **gap junction channels between** adjacent cells.
- Each gap junction is made of **two hemichannels (connexons)**, and each connexon consists of **six connexin subunits**.
- These channels allow direct **intercellular communication** by permitting the passage of ions, metabolites, and signaling molecules.
- More than **20 types of connexins** are identified in humans (e.g., Connexin43, Connexin26).

Functions

1. **Cell–cell communication:** Essential for coordination of cellular activities.
2. **Electrical coupling:** Maintains synchronized contraction in **cardiac and smooth muscle**.
3. **Developmental regulation:** Plays roles in embryonic growth, tissue differentiation.
4. **Metabolic cooperation:** Enables nutrient and signal sharing between cells.

ARTICLES 200 (GOVERNOR'S ASSENT TO STATE BILLS)

The Supreme Court is hearing a Presidential Reference on whether timelines can be imposed on Governors/President for acting on State Bills

- **Centre's Argument:**
  - Governors are not mere post offices but constitutional actors with discretion, serving as a check on *"hasty legislation"* by States.
  - Articles 200 (Governor's assent to State Bills) and 201 (President's consideration of State Bills) deliberately do not prescribe timelines, reflecting conscious constitutional design.
  - Judicially imposing deadlines would amount to rewriting the Constitution.
  - The Supreme Court should not use Article 142 to create the concept of "deemed assent", as it would turn a constitutional prerogative into a judicial mandate.
- **Tamil Nadu's Argument:**
  - The April judgment rightly imposed deadlines, since Governors and the President cannot indefinitely delay Bills.

- Governors are bound by the 'aid and advice' of the Council of Ministers, and prolonged inaction undermines democracy.
- Tamil Nadu challenged Governor R.N. Ravi's delays in assenting to State Bills.

- **Key Issues at Stake:**
  - Balance between State legislatures' democratic mandate and the discretion of Governors/President.
  - Whether courts can prescribe time limits where the Constitution is silent.
  - Whether Article 142 allows the SC to introduce "deemed assent."

Learning Corner:

Constitutional Position

- The **Governor** is the constitutional head of the state, appointed by the President (Article 155).
- Acts as a link between the Union and the State, ensuring federal balance.

Powers & Functions of a Governor

1. **Executive Powers**
   - Appoints the Chief Minister, other ministers, and the Advocate General.
   - Appoints the State Election Commissioner, Chairman & members of State Public Service Commission (on President's advice).
   - All executive actions of the State are taken in his/her name.
   - Can recommend President's Rule under Article 356 if State Government fails.

2. **Legislative Powers**
   - Summons, prorogues, and dissolves the State Legislature.
   - Addresses the first session after elections and at the start of each year.
   - Gives assent to Bills (Article 200) – may assent, withhold, reserve for President, or return (once) for reconsideration.
   - Nominates 1 member from the Anglo-Indian community (till 2020, now abolished by 104th Amendment).
   - Nominates 1/6th of the members to the Legislative Council (if bicameral).

3. **Financial Powers**
   - Ensures the State Budget is laid before the legislature.
   - No money bill can be introduced without the Governor's recommendation.
   - Administers the Contingency Fund of the State.

4. **Judicial Powers**
   - Can grant pardons, reprieves, commutations, and remissions for offences against state laws (Article 161).
   - Consulted in the appointment of judges of the State High Court.

5. **Discretionary Powers**
   - Reserving a Bill for the consideration of the President.
   - Recommendation for President's Rule (Article 356).
   - Deciding on appointment of CM in a hung assembly.
   - When no party commands majority or when confidence of House is in doubt.

The Governor functions as a constitutional head, expected to act on the aid and advice of the Council of Ministers, but also wields certain discretionary powers to maintain constitutional order. This dual role often leads to debates on federalism and Centre-State relations.

SAMUDRAYAAN MISSION – INDIA'S DEEP OCEAN MISSION

Two Indian aquanauts — Cdr (Retd) Jatinder Pal Singh and R. Ramesh (scientists at NIOT) — undertook deep-sea dives in the Atlantic Ocean from the French vessel *Nautile*.

- They reached depths of 5,002 metres and 4,025 metres, setting new records for Indian deep-sea missions.
- Earlier Indian submarine dives were limited to 500 metres, with the deepest being 670 metres.
- This marks a significant step in preparations for India's Samudrayaan Mission (2027), aimed at exploring deep-sea resources and technologies.
- The Indian flag was unfurled underwater alongside the French flag, symbolizing international collaboration.

Samudrayaan Mission – India's Deep Ocean Mission

Introduction

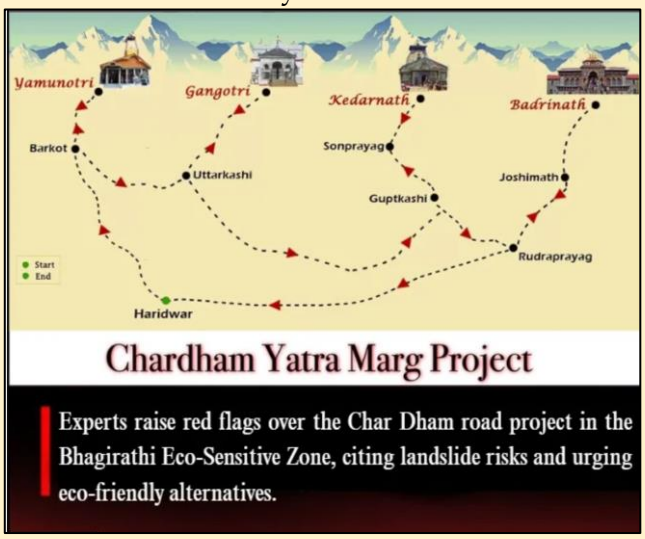
- Samudrayaan is India's first manned deep-ocean mission, launched under the Deep Ocean Mission (DOM) by the Ministry of Earth Sciences.
- It aims to send aquanauts up to 6,000 metres into the ocean in a submersible vehicle named MATSYA 6000.

Objectives

- Exploration of polymetallic nodules and mineral resources like nickel, cobalt, copper, and manganese in the Central Indian Ocean Basin.
- Development of deep-sea technologies: submersibles, mining systems, sensors, and underwater robotics.
- Understanding deep-sea biodiversity, ecosystems, and climate interactions.
- Strengthening India's role in the Blue Economy and energy security.

BHAGIRATHI ECO-SENSITIVE ZONE (BESZ)

Recent concerns have emerged over the Char Dham all-weather road widening project in the Bhagirathi eco-sensitive zone (BESZ). Experts warn that the current plan could destabilise the fragile Himalayan terrain. Two members of a Supreme Court-appointed panel have brought into light risks based on their detailed surveys.

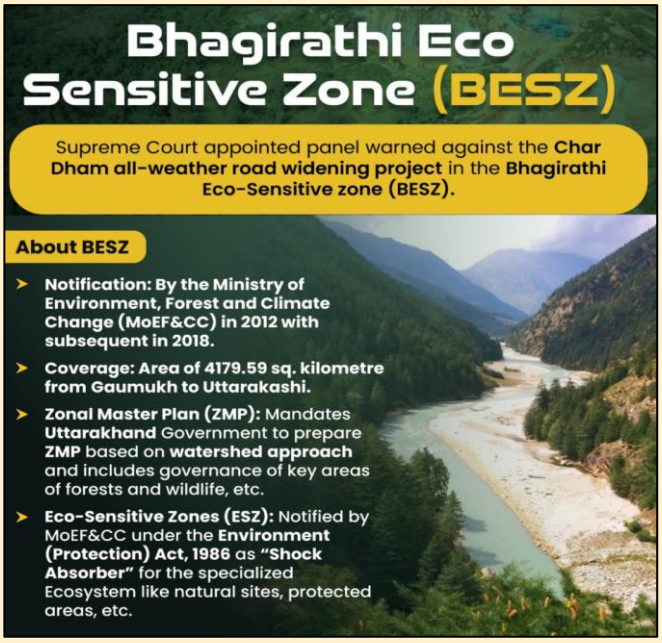


Their findings link recent floods and landslides to slope instability caused by construction activities. They have urged the Union Ministry of Road Transport and Highways to reconsider the project design and enforce eco-sensitive protections strictly.

Bhagirathi Eco-Sensitive Zone

- The Bhagirathi watershed was declared an Eco-Sensitive Zone (ESZ) in 2012 under the Environment Protection Act, 1986.
- This zone covers over 4,179 sq km from Gaumukh to Uttarkashi.
- The ESZ aims to protect the fragile Himalayan ecosystem from industrial pollution and uncontrolled development.

- It restricts hydropower projects above 2 MW, riverbed mining, and land use changes.
- The 2018 amendment eased some restrictions to allow infrastructure development with prior state approval and environmental studies.



Geological and Environmental Challenges

- The Himalayas are tectonically active, lying in seismic zone V. The Indian plate subducts beneath the Eurasian plate here, making the region prone to earthquakes and landslides.
- Road construction disrupts natural slopes, reactivating landslides by disturbing the "toe" or base of hills.
- The 2015 Kedarnath disaster brought into light these dangers.
- The Bhagirathi valley shows evidence of unstable slopes sinking 12mm to 22mm annually.
- Floods in August 2023 demonstrated the risks of glacier-fed streams bursting through weakened terrain.

Char Dham Road Project Overview

- The Char Dham project aims to provide all-weather connectivity to four major pilgrimage sites – Yamunotri, Gangotri, Badrinath, and Kedarnath.
- It includes 53 projects covering 826 km with an estimated cost of Rs. 12,000 crore.
- The project focuses on improving road infrastructure in high-altitude, ecologically sensitive areas.

Zonal Master Plan and Watershed Approach

The Bhagirathi ESZ notification mandates the preparation of a Zonal Master Plan (ZMP) by the Uttarakhand government.

The ZMP follows a watershed development approach based on participatory planning. It integrates forest and wildlife governance, watershed management, irrigation, energy, tourism, public health, sanitation, and road infrastructure.

The plan aims to balance ecological conservation with development needs. Approval of the ZMP is expected to guide sustainable development in the region.

Expert Recommendations and Government Response

Experts have proposed an alternate road design to maintain slope stability while keeping roads operational. They urge full enforcement of the Bhagirathi ESZ notification and extension of eco-sensitive protections to higher Himalayan valleys.

The Ministry of Road Transport and Highways has been requested to reconsider the current plan to prevent potential disasters. The stability of the Himalayas depends on cautious development respecting ecological limits.

ULCHI FREEDOM SHIELD

South Korea and the United States commenced their annual large-scale joint military exercise, Ulchi Freedom Shield. This 11-day drill involves 21,000 troops, including 18,000 South Koreans. It aims to enhance preparedness against threats from nuclear-armed North Korea.

The exercise comes amid heightened tensions on the Korean Peninsula and ahead of a planned summit between South Korea's President Lee Jae Myung and US President Donald Trump.

Purpose

Ulchi Freedom Shield is designed to improve joint operational readiness. It focuses on computer-simulated command post exercises and field training. The drills prepare forces to counter nuclear, missile, drone, and other unconventional attacks. The allies describe the exercise as defensive rather than offensive.

North Korea's Response

North Korea strongly opposes the drills. It views them as rehearsals for invasion and a threat to its sovereignty. Pyongyang has vowed to respond to any provocation beyond the military boundary line.

North Korean officials link the exercises to increased military confrontation and continue weapons testing to advance their nuclear programme.

Political and Diplomatic Context

The exercise occurs during a sensitive political phase. President Lee Jae Myung seeks to resume dialogue with North Korea despite Pyongyang's refusal.

The US-South Korea alliance faces pressure as President Trump considers troop reductions or increased financial contributions from Seoul. North Korea's growing ties with Russia add complexity to regional security dynamics.

Operational Adjustments and Diplomatic Signals

Due to extreme heat and diplomatic considerations, about half of the field training exercises were postponed. South Korean officials indicate this may be a gesture to ease tensions and encourage dialogue.

However, North Korea remains firm in rejecting talks and warns of countermeasures. The US and South Korean militaries have increased vigilance and surveillance to monitor North Korean activities closely.

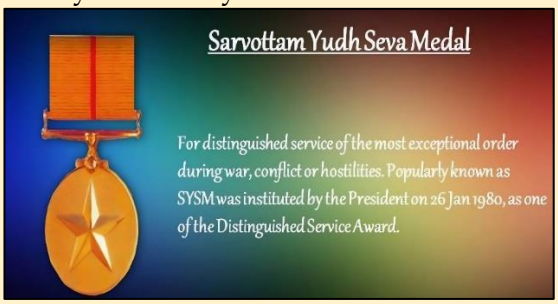
Strategic Implications

The drills reinforce the US-South Korea military alliance. They demonstrate readiness to deter North Korean aggression. However, they also risk provoking Pyongyang, which may escalate military demonstrations. The exercise reflects broader geopolitical shifts, including US strategic focus on China and North Korea's alignment with Russia.

SARVOTTAM YUDH SEVA MEDALS (SYSM)

The Sarvottam Yudh Seva Medals (SYSM) were awarded in 2025 to seven military leaders for their distinguished service during Operation Sindoor.

This operation was launched by the Indian Armed Forces in response to a terror attack in Pahalgam. The awards recognise exceptional leadership and operational success in wartime. This year, the Indian Air Force received the majority of medals, followed by the Army and Navy.



Significance of the Sarvottam Yudh Seva Medal

The Sarvottam Yudh Seva Medal is India's highest wartime distinguished service honour. It is awarded for exceptional leadership during war, conflict, or hostilities.

The medal is equivalent in prestige to the Param Vishisht Seva Medal, which is awarded for peacetime service. Historically, it has been awarded only three times before, including during the Kargil War.

Indian Air Force's Role and Recognition

- The Indian Air Force (IAF) received four of the seven medals. Key leaders included Air Marshal Narmdeshwar Tiwari, Air Marshal Nagesh Kapoor, Air Marshal Jeetendra Mishra, and Air Marshal A.K. Bharti.
- The IAF conducted precision strikes on terrorist camps and 11 Pakistani air bases, including Nur Khan and Rahim Yar Khan.
- The Integrated Air Command and Control System (IACCS) enabled real-time coordination. The IAF also defended against drone swarms targeting civilian and religious sites using Akash surface-to-air missiles and legacy defence systems.

Historic Recognition

For the first time, a Navy officer was awarded the SYSM. Vice Admiral Sanjay Jasjit Singh (Retd) commanded the Western Naval Command during Operation Sindoor.

The Navy deployed its Carrier Battle Group with MiG-29K fighters, early-warning helicopters, and submarines in the Arabian Sea. The naval operations restricted Pakistani air movements and demonstrated India's strategic reach and maritime readiness.

Outcome of Operation Sindoor

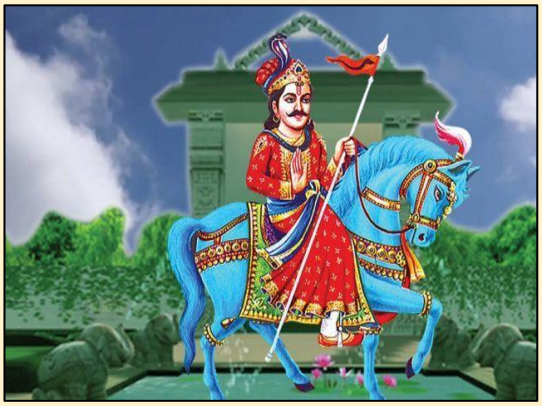
Operation Sindoor disrupted terrorist infrastructure across the border. It showcased joint operations among the Army, Navy, and Air Force. Pakistan initially rejected India's request for dialogue but later proposed cessation of hostilities. The operation tells India's capability to respond decisively to terror threats while maintaining operational coordination.

GUGGA NAUMI

Gugga Naumi is a vibrant folk religious festival celebrated in northern India. The festival honours Gugga Pir, a folk deity believed to have the power to protect against snakebites. Celebrated annually in the Bhadrapad month, it marks the syncretic traditions of India, where people from different religions participate in shared cultural practices.

Timing and Observance

Gugga Naumi falls on the ninth day of Krishna Paksha in the Bhadrapad month of the Hindu lunar calendar. It usually occurs after Raksha Bandhan and before Janmashtami.



The festival spans about nine days, beginning on Raksha Bandhan. The timing reflects its close association with the agricultural and seasonal cycles of northern India.

Geographical Spread and Significance

The festival is predominantly observed in Rajasthan, Haryana, Punjab, Jammu and Kashmir, and Uttar Pradesh.

Gugga Naumi is especially popular in rural areas where folk traditions remain strong. The village of Gugga Medi in Hanumangarh district, Rajasthan, serves as a major pilgrimage centre. Here, devotees gather to perform rituals and attend fairs, reinforcing community bonds.

Deity and Symbolism

Gugga Pir, also known as Guga Ji or Guggapir, was a Rajput prince from the Chauhan clan. He is depicted riding a blue horse and carrying blue and yellow flags.

Gugga is believed to possess divine powers to control poisonous snakes. Mothers pray to him for the health of their children, and barren women seek blessings for offspring. His worship reflects deep-rooted folk beliefs in protection, healing, and fertility.

Rituals and Celebrations

The festival begins with pilgrimages to Gugga Medi. Snake charmers known as Garudas carry the Chahad (standard) of Gugga Pir during processions. Devotional songs called Pir Ke Sole are sung by Gugga Mandis. Fairs and prayers take place at Gugga shrines called Marhis scattered across villages. These rituals blend religious devotion with social festivities, strengthening community ties.

Syncretic and Cultural Aspects

Gugga Naumi exemplifies India's syncretic culture. Both Hindus and Muslims worship Gugga Pir, calling him by different names but sharing faith in his powers. This shared reverence marks the fluid boundaries between institutional religion and popular folk practices. The festival encourages unity and cultural cohesion in diverse rural societies.

Social and Cultural Importance

Beyond its religious significance, Gugga Naumi is a cultural event that preserves ancient customs. It reinforces social bonds and collective identity. The festival's focus on snake worship connects communities to nature and traditional knowledge. It also sustains oral traditions through songs and storytelling, maintaining the heritage of northern India's folk culture.

PAMPA RIVER

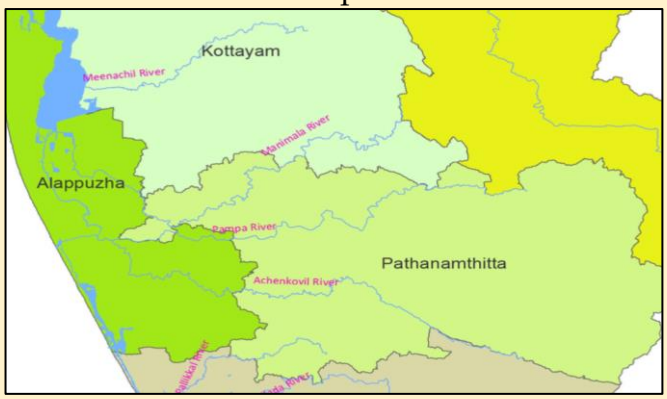
The central government has initiated steps to include the Pampa River under the National River Conservation Plan (NRCP). This move aims to protect the river from pollution and degradation. The Union Ministry for Jal Shakti has requested the Kerala state government to submit a detailed report.

This report will support the preparation of a comprehensive conservation project for the river. The Pampa River holds environmental and religious significance, especially due to its association with the Sabarimala shrine and major religious gatherings.

Significance of the Pampa River

The Pampa is the third-longest river in Kerala, flowing 176 kilometres. It originates from Pulachimalai Hill in the Western Ghats. The river passes through the districts of Pathanamthitta, Idukki, and Alappuzha.

It covers around 30 panchayats and the Chengannur municipality. Known as the 'Dakshina Bhageerathi' or the Ganga of Kerala, it is sacred to many. Devotees believe bathing in the Pampa equals bathing in the Ganga. The river is closely linked to the Sabarimala temple and festivals like the Maramon and Cherukolpuzha conventions.



Current Environmental Challenges

The Pampa River faces high pollution levels. Waste dumping by local bodies is a major cause. Riverbank destruction is common, especially during the rainy season. Coastal erosion threatens the river's stability. The absence of retaining walls leads to frequent bank collapses. These environmental issues affect both ecology and the religious practices tied to the river.

Government Initiatives for Conservation

Inclusion in the NRCP will bring multi-crore funding and technical support. The plan includes preventing wastewater discharge into the river. Waste removal and construction of water purification plants are key components.

Riverbank protection measures, such as building retaining walls, will be funded. The Ministry will provide technical assistance to state and local governments. Earlier, a proposed Pampa River Basin Authority was shelved, making NRCP inclusion crucial.

Role of State and Local Bodies

The Kerala government must prepare and submit a detailed conservation report. Local self-government institutions will receive technical aid. Municipalities like Chengannur play a vital role in managing river-related issues.

The chairperson of Chengannur marks erosion as a major threat. Coordinated efforts between state and local bodies are essential for effective conservation.

Ministry : Ministry of Jal Shakti

National River Conservation Plan

- National River Conservation Plan (NRCP) is **a centrally funded scheme launched in 1995** aimed at **preventing the pollution of rivers.**
- Programs for river conservation are being implemented under National River Conservation Plan (NRCP) and NGRBA (National Ganga River Basin Authority).

Activities under NRCP:

- Interception and Diversion works to capture the raw sewage flowing into the river through open drains and divert them for treatment.
- Sewage Treatment Plants for treating the diverted sewage.
- Low Cost Sanitation works to prevent open defecation on riverbanks.
- Electric Crematoria and Improved Wood Crematoria to conserve the use of wood and help in ensuring proper cremation of bodies brought to the burning ghats.
- River Front Development works such as improvement of bathing ghats.
- Public awareness and public participation.
- Human Resource Development (HRD), capacity building, training and research in the area of River Conservation.
- Other miscellaneous works depend upon location specific conditions including the interface with human population.

SALWA JUDUM

A group of 18 retired judges of the Supreme Court and High Courts have penned a joint statement against Home Minister Amit Shah's remarks on the Supreme Court's Salwa Judum judgment, saying that such "prejudicial misinterpretation" will have a "chilling effect on the judges of the Supreme Court, shaking the independence of the judiciary".

About Salwa Judum:

- Meaning "Peace March" or "Purification Hunt" in the language of the Gonds, the Salwa Judum was a militia specifically mobilised with the intention of countering the Left-Wing Extremism (LWE) or naxalism in the Chhattisgarh region.
- It consisted of local tribal youth mobilized for resistance against outlawed armed naxalites. The group was reportedly backed by government machinery in Chhattisgarh.
- There were reports that Salwa Judum forcibly recruited minor boys for its armed forces. According to a survey by the Forum for Fact-finding Documentation and Advocacy (FFDA), over 12,000 minors were being used by the Salwa Judum in the southern district of Dantewada.

- The Salwa Judum displaced large numbers of villagers. They even killed those that refused to leave, accusing them of being naxalite collaborators.
- Following a number of petitions, the Supreme Court ordered the state government in 2008 to refrain from allegedly supporting and encouraging the Salwa Judum.
- In 2011, the Supreme Court of India in a case filed by Nandini Sundar and others declared the militia to be illegal and unconstitutional, and ordered its disbanding. However, despite the order, the Salwa Judum remains a part of the auxiliary force of the state police.

- **Other government initiatives to control Left-Wing Extremism (LWE):**

  - SAMADHAN doctrine is the one-stop solution for the LWE problem. It encompasses the entire strategy of government from short-term policy to long-term policy formulated at different levels. SAMADHAN stands for-
    - S- Smart Leadership
    - A- Aggressive Strategy
    - M- Motivation and Training
    - A- Actionable Intelligence
    - D- Dashboard Based KPIs (Key Performance Indicators) and KRAs (Key Result Areas)
    - H- Harnessing Technology
    - A- Action plan for each Theatre
    - N- No access to Financing.

  - The national strategy to counter LWE was formed in 2015 as a multipronged approach to combat LWE. Its main aim was to ensure participatory governance and protection of the rights of local tribals, inter alia.
  - Operation Green Hunt was started in 2009-10 and massive deployment of security forces was done in the naxal-affected areas.

INVASIVE SPECIES

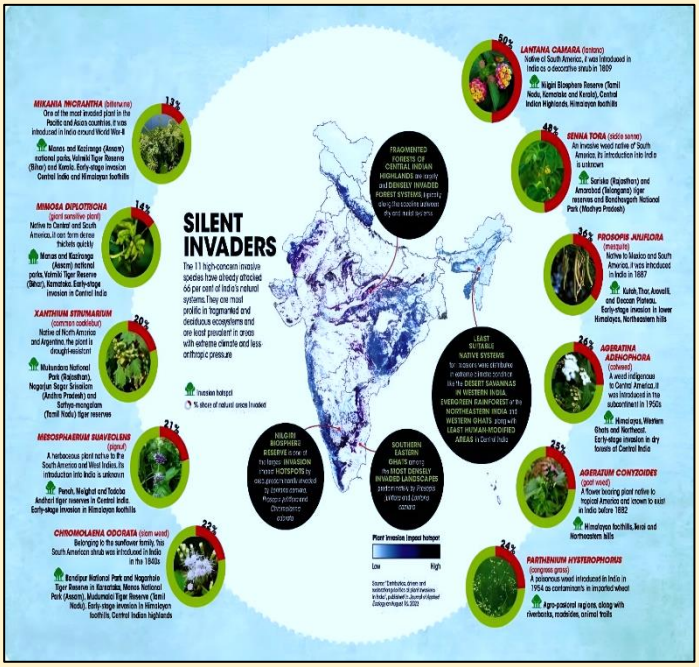
A new international study shows that invasive plants and animals have caused over $2.6 trillion in global damage since 1960, with costs in India severely underreported.

Key Points

- Global Impact: Plants, arthropods, and mammals are the most damaging groups, affecting agriculture, forestry, fisheries, and infrastructure.
- India's Blind Spot: Management costs are underreported by over 1,100%, reflecting weak documentation and funding.
- Drivers of Costs: Losses stem from both economic damage and expenses for detection, control, and eradication.
- Gaps: India lacks robust data, funding, and coordinated strategies, worsening ecological and financial risks.
- Way Forward: Experts urge stronger policies, better data systems, and global cooperation for prevention and management.

Invasive Species of India

Invasive Alien Species (IAS) are non-native plants, animals, or microbes introduced—intentionally or accidentally—that spread rapidly, harm native biodiversity, disrupt ecosystems, and cause economic loss. India, with its rich biodiversity, is especially vulnerable.



Examples of Major Invasive Species in India

Plants

- Lantana camara – A hardy shrub from Central/South America; invades forests, suppresses native plants.
- Parthenium hysterophorus (Congress Grass) – From tropical America; affects agriculture, causes skin allergies and respiratory issues.
- Eichhornia crassipes (Water Hyacinth) – Aquatic weed from the Amazon; clogs water bodies, reduces oxygen, harms fisheries.
- Prosopis juliflora (Vilayati Babool) – From South America; dominates drylands, displaces native grasses.

Animals

- Common Carp & Tilapia – Non-native fishes that outcompete local species, affecting inland fisheries.
- African Catfish (Clarias gariepinus) – Aggressive predator, threatens native fish diversity.
- Apple Snail (Pomacea canaliculata) – Damages paddy fields and aquatic vegetation.

Insects / Others

- Papaya Mealybug (Paracoccus marginatus) – Destroys papaya and other crops.
- Fall Armyworm (Spodoptera frugiperda) – Major pest in maize, spreading rapidly in India.

Impacts

- Ecological: Displacement of native flora and fauna, habitat degradation.
- Economic: Heavy losses in agriculture, forestry, and fisheries.
- Health: Allergies, poisoning, and diseases linked to some species.

Management in India

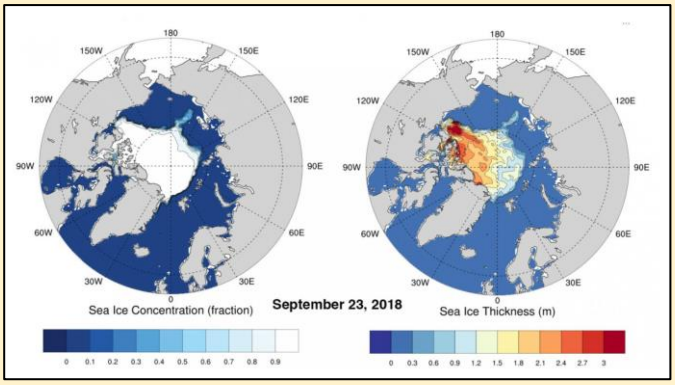
- National Biodiversity Authority (NBA) and Indian Council of Agricultural Research (ICAR) monitor IAS.
- Biological control: Example – *Mexican beetle* introduced to control Parthenium.
- Awareness & Policy: Need for stronger prevention, early detection, and coordinated eradication strategies.

Arctic Sea ice melting

A new study finds that Arctic Sea ice melting has slowed over the past 20 years, but the change is temporary and not a sign of recovery.

Key Points

- Cause of Slowdown: Natural climate cycles like the Pacific Decadal Oscillation and Atlantic Multidecadal Variability bring colder waters, briefly reducing ice loss.
- Main Driver: Greenhouse gas emissions remain the dominant cause of long-term decline.
- Not Good News: The slowdown may last up to a decade, but models predict faster melting afterward—about 0.6 million sq. km lost per decade.
- Message: The pause is due to natural variability, not reversal of climate change, and urgent action on mitigation remains essential.



Arctic Sea and Its Associated Seas

Arctic Ocean:

- The smallest and shallowest ocean in the world, surrounding the North Pole.
- Covered by sea ice for most of the year, though shrinking due to global warming.
- Bordered by North America, Europe, and Asia.

Associated Seas of the Arctic Ocean:

- Barents Sea – located north of Norway and Russia; important for fisheries and oil & gas.
- Kara Sea – north of Siberia; receives major Russian rivers (Ob, Yenisei).

- Laptev Sea – east of the Kara Sea; source region of drifting Arctic ice.
- East Siberian Sea – shallowest sea of the Arctic Ocean; remote and icy.
- Chukchi Sea – between Alaska and Russia; gateway to the Bering Strait.
- Beaufort Sea – north of Alaska and Canada; known for oil reserves and polar bears.
- Lincoln Sea – north of Greenland; among the coldest seas.
- Greenland Sea – between Greenland and Svalbard; key to North Atlantic water circulation.

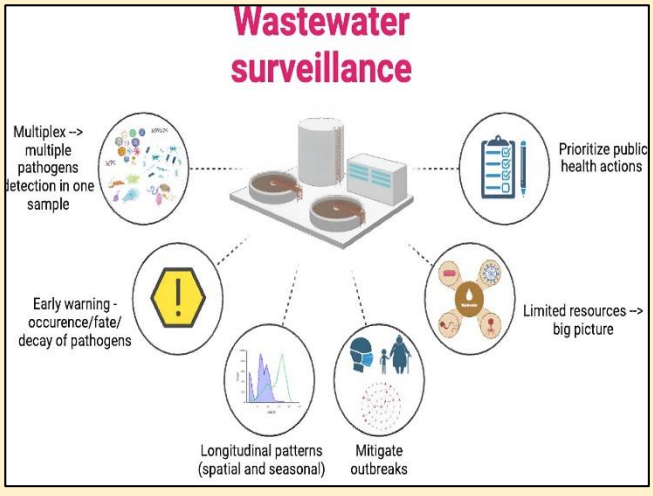
Significance:

- Rich in oil, gas, and mineral resources.
- Crucial for global climate regulation (sea ice reflects sunlight).
- Strategic shipping routes (e.g., Northern Sea Route) opening due to melting ice.
- Habitat for unique species like polar bears, walrus, seals, and Arctic fox.

WASTE WATER SURVEILLANCE

The Indian Council of Medical Research (ICMR) has launched a major initiative to expand **wastewater surveillance** across **50 Indian cities**, covering **10 viruses** over the next six months. Currently, five cities are under monitoring.

This move aims to build an **early-warning system** for outbreaks of infectious diseases like COVID-19, polio, influenza, and other viral threats.



What is Wastewater?

- Wastewater is used water that has been affected by domestic, industrial and commercial use.
- The composition of wastewater is 99.9% water and the remaining 0.1% contains organic matter, microorganisms and inorganic compounds.
- Wastewater effluents are released to a variety of environments, such as lakes, ponds, streams, rivers, estuaries and oceans.
- Wastewater also includes storm runoff, as harmful substances wash off roads, parking lots and rooftops.

Types of waste water

- **Blackwater:** Wastewater from toilets containing faeces and urine; highly contaminated with pathogens.
- **Greywater:** Wastewater from showers, sinks, laundry, and kitchens; less polluted than blackwater.
- **Yellow Water:** Source-separated urine; nutrient-rich and useful as fertilizer after treatment.
- **Brown Water:** Faeces mixed with flush water but without urine; organic and pathogen-heavy.

Why Wastewater Treatment Matters?

Untreated wastewater is one of the biggest threats to both **public health** and the **natural environment**. Proper treatment is therefore crucial to prevent widespread harm and ensure safe water management.

Environmental Consequences

- **Water Pollution:** Harmful contaminants degrade water quality, making it unsafe for drinking, bathing, irrigation, and fishing.
- **Ecosystem Damage:** Excess nutrients can cause algal blooms that deplete oxygen, killing fish and other aquatic life. Toxic substances can also build up in the food chain, endangering animals and humans alike.

- **Groundwater Risks:** Wastewater that seeps into the soil may reach underground aquifers, polluting vital drinking water sources and requiring expensive clean-up measures.

Public Health Risks

- **Waterborne Infections:** Diseases like cholera, typhoid, hepatitis, and dysentery are linked to contaminated drinking water.
- **Recreational Exposure:** People coming into contact with polluted water through swimming or wading risk skin problems, stomach infections, and other illnesses.

Hence, the Indian Council of Medical Research (ICMR) will initiate wastewater surveillance to identifying any increase in virus growth trend at the earliest,

What is Wastewater Surveillance?

- It involves collecting and testing sewage samples to detect viruses, bacteria, and other pathogens.
- Wastewater-Based Epidemiology (WBE) helps track disease spread in a community by analyzing biological traces (like viral RNA) in human waste.
- It is a non-invasive, cost-effective, and population-wide monitoring tool that provides insights even from asymptomatic carriers.

How ICMR will conduct surveillance?

- The initiative will track **10 different viruses**, including:
- **COVID-19 –** still a public health concern due to mutations.
- **Polio virus –** essential for India's polio-free status monitoring.
- **Avian Influenza Virus (AIV)** – linked with seasonal outbreaks and zoonotic transmission.
- Other **pathogens causing fever, diarrhoea, acute encephalitis**, and respiratory distress.
- The focus is on establishing a **nationwide early-warning system** by monitoring both wastewater and surface water in outbreak-prone areas.
- Process:
- Wastewater operators collect samples before treatment.
- Samples are sent to labs for testing viral/bacterial load.
- Results available within 5–7 days.
- Public health officials use wastewater data to better understand disease trends in communities and make decisions, such as providing guidance on how to prevent infections or increasing testing or vaccination options.

Other surveillance systems

India has robust surveillance for other illness also:

- **Influenza-Like Illness (ILI) monitoring** helps track seasonal flu patterns, detect unusual outbreaks, and monitor viral mutations.
- **Severe Acute Respiratory Illness (SARI) surveillance** helps identify severe respiratory disease outbreaks, including COVID-19 and influenza.
- The **Integrated Disease Surveillance Programme (IDSP),** which collect, analyze, and respond to disease outbreak data. Covers both communicable and some non-communicable diseases for timely interventions.
- **Wastewater and Environmental Surveillance (WES)** involves testing sewage and water bodies affected by human waste for pathogens.

Advantages of Wastewater Surveillance

- Unlike individual medical testing, which requires time and resources, wastewater testing provides a **population-wide snapshot** of infections in one go.
- Many infected individuals may not show symptoms or may avoid testing, but they still shed pathogens in urine or faeces. Wastewater-Based Epidemiology (WBE) captures this "hidden data," allowing early detection of disease spread that might otherwise remain unnoticed.

- By testing samples from specific locations or neighborhoods, authorities can **pinpoint areas with higher infection loads**.
- Wastewater data provides actionable insights to policymakers. This makes public health interventions **proactive rather than reactive**.
- Collecting and testing wastewater is far cheaper than conducting mass individual testing. It reduces the burden on health systems and allows **continuous surveillance** without large-scale disruptions.
- It also provides useful data to maintain ecosystem services and protect freshwater and marine ecosystems.

Way Forward

- Expand coverage to **rural and peri-urban areas**.
- Integrate wastewater data with **digital health platforms** for real-time tracking.
- Build **laboratory and human resource capacity** at district levels.
- Encourage **global data-sharing mechanisms** for early warning of cross-border health threats.
- Link with **climate change and pollution monitoring frameworks** for holistic action.

Wastewater surveillance represents a **transformative approach in public health management**. By turning sewage into a source of information, India can detect hidden infections, anticipate outbreaks, and safeguard both health and environment.

The scaling up of this programme by ICMR is a timely step towards **pandemic preparedness and sustainable disease surveillance**.

INTEGRATED AIR DEFENCE WEAPON SYSTEM (IADWS)

The Defence Research and Development Organisation (DRDO) has successfully conducted the first flight tests of the Indigenous Integrated Air Defence Weapon System (IADWS) off the coast of Odisha.

Key Points

- Purpose: Enhances India's multi-layered air defense against aerial threats and protects strategic facilities.
- Components: Includes Quick Reaction Surface-to-Air Missiles (QRSAM), Very Short-Range Air Defense System (VSHORADS), and a high-power laser-based Directed Energy Weapon, all managed via a central command system.
- Testing: Successfully destroyed three aerial targets—two high-speed UAVs and a drone—using QRSAM, VSHORADS, and the laser weapon.
- Performance: All elements including radars, missiles, communication, and command systems functioned flawlessly.

India's Multi-Layered Air Defence System

India has developed a multi-tiered air defence shield to neutralize threats from long-range ballistic missiles to low-flying drones. The system integrates indigenous and imported platforms under centralized command and control.

1. **Long-Range / Outer Layer**
   - S-400 Triumf (Russia) – Range up to 400 km, counters stealth aircraft, cruise and ballistic missiles.
   - Ballistic Missile Defence (BMD) Program – Includes Prithvi Air Defence (PAD) and Advanced Air Defence (AAD) interceptors for high and low-altitude ballistic missile interception.

2. **Medium-Range Layer**
   - MR-SAM (Medium Range Surface-to-Air Missile) – Jointly by DRDO & Israel; ~70 km range; used by Air Force, Army, and Navy.
   - Akash & Akash-NG – Indigenous, ~25–70 km; protects air bases and strategic assets.
3. **Short-Range / Tactical Layer**
   - QRSAM (Quick Reaction SAM) – 25–30 km range, mobile and radar-guided.
   - SPYDER (Israel) – 15–35 km range, counters aircraft, UAVs, and precision-guided munitions.
4. **Very Short Range / Point Defence**
   - Igla (Russia) and Indigenous VSHORADS – Man-portable missiles for last-mile defence against low-flying targets.
   - Anti-Drone Systems – DRDO and private-sector developed, deployed at borders and sensitive installations.
5. **Directed Energy Weapons (Emerging Layer)**
   - High-Power Laser Systems (DEW) under DRDO's Integrated Air Defence Weapon System (IADWS) – tested for drone and UAV neutralization.
6. **Integrated Command & Control**
   - Integrated Air Command and Control System (IACCS) – Nationwide radar and sensor network linking all layers for real-time surveillance, detection, and interception.

DAL LAKE IN SRINAGAR HOSTED THE FIRST-EVER KHELO INDIA WATER SPORTS FESTIVAL (KIWSF)

Over 400 athletes from across India competed for 24 gold medals in Olympic-class events like rowing, canoeing, and kayaking. Demonstration sports such as water skiing, dragon boat racing, and shikara sprints showcased both modern and local traditions.

The event, featuring Olympians like Arjun Lal Jat, aimed at talent identification for future Olympics and strengthening India's water sports ecosystem. Organized by the Sports Authority of India and the Jammu & Kashmir Sports Council, it also promoted tourism by positioning J&K as a hub for winter and water sports.

With nearly equal male and female participation and strong representation from states like Madhya Pradesh, Haryana, Odisha, and Kerala, the festival set a new benchmark for India's aquatic sports ambitions.

Dal Lake is a famous urban lake located in Srinagar, Jammu & Kashmir, often called the "Jewel of Srinagar." It is the second-largest lake in the Union Territory and is renowned for its houseboats, shikaras (traditional boats), and floating gardens.

- Geography: Spread over nearly 22 sq. km, the lake is fed by several mountain streams and is connected to other water bodies through canals.
- Tourism: It is one of India's most iconic tourist attractions, offering houseboat stays, shikara rides, and views of the surrounding Himalayas.
- Economy: Supports livelihoods through fishing, tourism, and horticulture (floating vegetable gardens).
- Culture: Has deep cultural and historical significance, often featured in Kashmiri art, poetry, and films.
- Sports & Events: Recently transformed into a venue for water sports, including the Khelo India Water Sports Festival 2025, boosting its profile as a sports and adventure destination.

SUSTAINABLE POWER 1404

Conducted by Iran's regular navy, the exercise showcased its strength after the 12-day conflict with Israel that damaged much of its air defence and missile infrastructure.

The drill featured frigates IRIS Sabalan and IRIS Ganaveh firing *Nasir* and *Qadir* cruise missiles, supported by coastal batteries, drones, electronic warfare units, and subsurface forces. Unlike other branches, Iran's navy had escaped major losses during the war.

The exercise, following recent Iran-Russia naval drills, was aimed at signaling resilience, reassuring domestic audiences, and warning adversaries like the US and Israel of Iran's readiness for retaliation, especially amid tensions over its suspended nuclear cooperation and the threat of renewed UN sanctions.

PIPRAHWA GEMS

Context: Uttar Pradesh, are set to return to their original site after a high-profile repatriation from Hong Kong in July 2025.

The Piprahwa gems, sacred relics linked to Lord Buddha and discovered in 1898 at the Piprahwa stupa in Uttar Pradesh, were repatriated from Hong Kong to India in July 2025. These treasures include bone fragments, gem-inlaid reliquaries, gold ornaments, and ritual offerings enshrined by the Buddha's Sakya clan.

Once held by the Peppé family after colonial excavations, around 300 gem-encrusted artefacts resurfaced for auction in Hong Kong with an estimated value of $13 million before the Government of India intervened to secure their permanent return.

The relics were ceremonially welcomed back, with plans to place them on public display at Piprahwa, Siddharthnagar.

This repatriation is seen as a landmark in heritage diplomacy, marking the restitution of one of India's most precious Buddhist treasures once thought lost to private collections.

Piprahwa Gems are sacred Buddhist relics discovered in 1898 at the Piprahwa stupa in Siddharthnagar, Uttar Pradesh. They include bone fragments, gem-studded reliquaries, gold ornaments, and ritual offerings, believed to have been enshrined by the Sakya clan of Lord Buddha.

- Discovery: Unearthed by British civil officer W.C. Peppé during colonial-era excavations.
- Significance: Considered among the earliest archaeological evidence directly linked to Lord Buddha and his relics.
- Heritage Journey: While most relics were deposited in the Indian Museum, Kolkata in 1899, some gems remained with the Peppé family and later surfaced in international auctions.

Important Buddhist Relics in India

- Vaishali (Bihar):
  - Excavations uncovered a relic casket of Buddha from a stupa, associated with the *second Buddhist Council*.
- Rajgir (Bihar):

  - Relics related to *King Bimbisara and* association with Buddha's preaching.
- Sarnath (Uttar Pradesh):
  - Famous Dhamek Stupa and Ashokan pillar, with relic caskets in surrounding stupas.
- Kapilvastu & Kushinagar (U.P.):
  - Kushinagar – Buddha's Mahaparinirvana site; stupas here yielded relic caskets of Buddha's ashes.
  - Piprahwa linked to distribution of relics among Shakyas.
- Sanchi (Madhya Pradesh):
  - Stupas housed relics of Buddha's chief disciples, Sariputta and Mahamoggallana.
  - These relics were taken to England during colonial times, but later returned to India.
- Bodh Gaya (Bihar):
  - No physical relics of Buddha's body but the Mahabodhi Temple is central as the site of Enlightenment.

ASIA-PACIFIC INSTITUTE FOR BROADCASTING DEVELOPMENT (AIBD)

India has been elected as the Chairman of the Executive Board of the Asia-Pacific Institute for Broadcasting Development (AIBD).
India secured the highest votes, regaining the position last held in 2016, and currently also holds the Presidency of the AIBD General Conference until August 2025.
The chairmanship enhances India's role in shaping global media cooperation, digital adoption, public service broadcasting, and cross-border collaboration. Shri Gaurav Dwivedi, CEO of Prasar Bharati and President of the AIBD General Conference, emphasized India's commitment to the theme "Media for People, Peace & Prosperity."

Asia-Pacific Institute for Broadcasting Development (AIBD)

- Establishment: 1977 under the auspices of UNESCO.
- Headquarters: Kuala Lumpur, Malaysia.
- Membership: 92 members from 45 countries spanning Asia-Pacific, Europe, Africa, Arab States, and North America.
- Nature: An intergovernmental organization focusing on broadcasting, media development, and capacity building.
- Objectives:
  - Promote regional cooperation in broadcasting and media.
  - Enhance public service broadcasting and digital adoption.
  - Provide training, workshops, and policy support for media professionals.
  - Facilitate cross-border cooperation to promote peace, development, and prosperity.
- India's Role:
  - Founding member of AIBD.
  - Held Chairmanship of the Executive Board in 2016 and 2025.
  - Currently (2025) also holds the Presidency of the General Conference.

BHARAT 6G VISION

- Launched in March 2023.
- Goal: Position India as a global leader in 6G by 2030.
- Principles: Affordability, sustainability, ubiquity.
- Builds on India's strong 5G foundation.

Phased Implementation

Phase	Timeline	Focus Areas
Phase 1	2023–2025	Explorative R&D, proof-of-concept tests, use-case identification
Phase 2	2025–2030	IP creation, testbeds, commercialization, field trials

An apex council oversees spectrum, standards, ecosystem creation, and R&D funding.

Key Initiatives

- **Bharat 6G Alliance:** Collaboration among academia, startups, industry, and government.
- **100 5G Labs:** Training and capacity building for 6G skills.
- **R&D Support:** 100+ projects funded under government schemes.

International Partnerships

- Collaborations with Japan, Finland, South Korea, Germany, US, Brazil, and UK for research and standard-setting.

Global Alignment

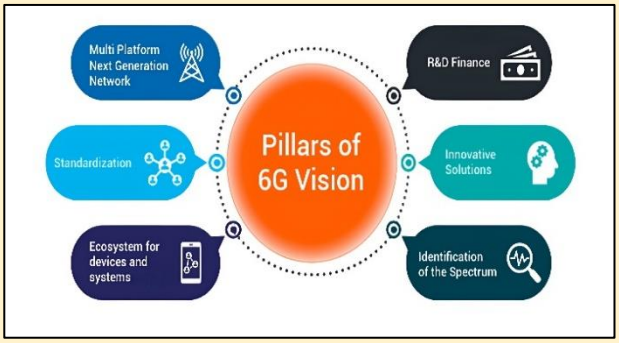
- Aligned with ITU's IMT-2030 framework.
- Target: At least 10% of global 6G intellectual property.

Key Features of 6G

- Ultra-high data speeds, very low latency.
- Communication + sensing integration.
- Terrestrial and non-terrestrial seamless coverage.
- AI-native, energy-efficient networks.

Upcoming Milestones

- WRC 2027: Final spectrum decisions.
- Commercial launch target: 2030, with domestic trials and global contributions in 2025–2030.



- New Features:
  - Joint Communication & Sensing (JCAS): Networks can sense environment while transmitting data (useful for autonomous mobility, disaster management).
  - Holographic Beamforming: Advanced antenna technologies for high-directional, energy-efficient transmission.
  - Quantum Communication & Security: Quantum key distribution for ultra-secure links.
- Energy Efficiency: Designed to be 100x more energy-efficient than 5G, using intelligent sleep modes and green hardware.
- Applications: Holographic telepresence, immersive XR (extended reality), autonomous transport, precision healthcare, smart industries.

NTCA LIMITS TIGER CORRIDORS TO 2014 "LEAST COST" PATHWAYS

- The National Tiger Conservation Authority (NTCA) has restricted the recognized tiger corridors mainly to the 32 "least cost pathways" mapped in 2014.
- This move narrows statutory protection, making approvals for mining, infrastructure, and other development projects in tiger habitats easier.
- Earlier, NTCA had assured that all scientific data—such as telemetry studies, tiger conservation plans, and wildlife movement models—would be considered, but the new stance reduces scope.
- Conservationists warn this undermines landscape connectivity vital for tiger movement, gene flow, and survival.
- NTCA's own earlier reports had stressed that least-cost routes were only the bare minimum, while broader corridors also required attention.
- The change benefits several pending projects but raises concerns about long-term tiger conservation and habitat security.

National Tiger Conservation Authority (NTCA)

- Establishment: 2005, under the Wildlife (Protection) Act, 1972, following the recommendations of the Tiger Task Force.
- Status: A statutory body under the Ministry of Environment, Forest and Climate Change (MoEFCC).

Composition

- Headed by the Minister of Environment, Forest and Climate Change (Chairperson).
- Includes experts, NGOs, and representatives from states with tiger reserves.

Functions

- Implement the Project Tiger scheme across India.
- Approve tiger conservation plans prepared by states.
- Lay down standards for tiger reserve management including tourism, infrastructure, and anti-poaching.
- Provide funding and technical support to tiger reserves.
- Ensure tiger corridors and habitat connectivity are maintained for long-term survival.
- Conduct monitoring using technologies like M-STrIPES (Monitoring System for Tigers – Intensive Protection and Ecological Status).

Importance

- Central authority for India's tiger conservation strategy.
- Plays a key role in balancing conservation with developmental pressures in tiger landscapes.

PROMOTION AND REGULATION OF ONLINE GAMING BILL, 2025

The Promotion and Regulation of Online Gaming Bill, 2025, passed by the Parliament to shield citizens from the menace of online money games while promoting and regulating other kinds of online games.
This legislation is designed to curb addiction, financial ruin and social distress caused by predatory gaming platforms that thrive on misleading promises of quick wealth.

Understanding the Online Gaming Sector
Online gaming sector can be divided into three categories:

- **E-Sports –** Competitive digital tournaments requiring strategy, coordination, and decision-making.
- **Online Social Games –** Casual, skill-based games focused on entertainment, learning, and interaction; generally considered safe.
- **Online Money Games –** Games involving financial stakes (chance, skill, or both). These platforms have raised serious concerns due to reports of addiction, financial losses, money laundering, and even cases of suicide linked to heavy monetary losses.

Why the Bill was needed?

- The World Health Organization classifies gaming disorder as a health condition in its International Classification of Diseases, describing it as a pattern of play marked by loss of control, neglect of other daily activities, and persistence despite harmful consequences.
- Online money games encourage compulsive playing. Many players lose their entire savings chasing the illusion of quick profits. Families have been pushed into debt and distress.
- The stress of heavy financial loss has led to cases of depression and even suicide. The Bill seeks to prevent such tragedies by banning these exploitative platforms.
- Several platforms have been misused for illegal activities. Money laundering, which means moving illegal earnings through legal channels to hide their source, has been a major concern.
- Investigations have shown that some gaming platforms were being used for terror financing and illegal messaging, which compromise the country's security.
- According to the government data, 45 crore people are negatively affected by online money games and faced a loss of more than Rs. 20,000 crores because of it.

Provisions of the Bill

1. **Applicability**
   - The Bill applies to **all of India**, covering both physical territory and the digital domain.
   - Many gaming platforms operate from offshore jurisdictions. Hence bill also applies to **online gaming platforms operated outside India** but **offering services to Indian users**, addressing challenges posed by offshore operators.
2. **Promotion & Recognition of E-Sports**
   - E-sports are organised competitive video games where individuals or teams compete professionally, often with tournaments, rankings, and prizes.
   - The Bill recognises e-sports as a legitimate sport in India.
   - The Ministry of Youth Affairs & Sports will issue guidelines for tournaments, ensuring standardisation, safety, and fair play.
   - Training academies, research centres, and technology platforms will be established to develop talent and innovation.
   - Incentive schemes and awareness drives will integrate e-sports into India's sporting ecosystem, encouraging youth participation and career opportunities.
3. **Promotion of Social & Educational Games**
   - Social and educational games are digital games focused on learning, culture, skill development, or social interaction, generally safe and age-appropriate.
   - Central Government empowered to recognise and register safe social games.
   - Encourages healthy digital engagement, reduces exposure to harmful games, and nurtures creativity and learning among youth.
4. **Prohibition of Online Money Games**
   - Online money games are digital games where players wager real money or stakes on outcomes of chance, skill, or both, often involving gambling elements.
   - Complete ban on all money-based games (chance, skill, or mixed).
   - Advertising, promotion, and financial transactions linked to these games are prohibited.
   - Platforms can be blocked under the IT Act, 2000.
   - Protects citizens from financial losses, addiction, fraud, and social distress caused by money games.
5. **Establishment of an Online Gaming Authority**

- A national-level authority will categorise and register online games.
- Powers include:
- Issuing guidelines and codes of practice.
- Deciding whether a game qualifies as a money game.
- Addressing public grievances.
- Ensuring compliance with the Bill.
- Provides a centralised, expert body to manage the gaming ecosystem, ensuring accountability and transparency.

6. **Offences & Penalties**
   - Strict punishments have been introduced.
   - Offering or facilitating online money games can lead to imprisonment of up to three years and a fine of up to one crore rupees.
   - Financial transactions linked to these games are also punishable with similar penalties.
   - Advertising such games can attract a jail term of up to two years and a fine of up to fifty lakh rupees.
   - Repeat offenders face harsher punishments, including imprisonment of up to five years and fines of up to two crore rupees.
7. **Corporate Liability**
   - Companies and their officers will be held accountable for offences.
   - However, independent directors and non-executive directors, who are not involved in day-to-day decisions, will not be punished if they can show that they acted with due diligence.
8. **Investigation & Enforcement**
   - The Central Government may authorise officers to investigate, search and seize both digital and physical property linked to offences.
   - In certain cases, officers will have the power to enter premises and make arrests without a warrant.
   - Investigations will follow the provisions of the Bharatiya Nagarik Suraksha Sanhita, 2023, which governs criminal procedure in India.
9. **Rule-Making Powers**
   - Central Government empowered to frame rules for:
   - Promotion of e-sports and social games.
   - Registration and recognition of online games.
   - Functioning of the Online Gaming Authority.

Benefits of the Bill

- **Boost to Creative Economy –** Strengthens India's position as a global gaming hub, generating jobs and exports.
- **Youth Empowerment –** Encourages teamwork, discipline, and digital careers through e-sports.
- **Safer Digital Space –** Shields families from predatory money games and misleading promises.
- **Global Leadership –** Positions India as a model for responsible digital policy.

The Online Gaming Bill, 2025 balances innovation with responsibility. By banning exploitative money games while encouraging e-sports and safe online gaming, it:

- Protects citizens and families from financial ruin.
- Provides youth with constructive digital opportunities.
- Strengthens India's digital economy and global leadership.
-

Ultimately, it ensures that technology serves society rather than harms it, setting the foundation for a safe, creative, and future-ready digital ecosystem.

NATIONAL POLICY TO PROMOTE GIAHS.

Union government is planning to formulate National Policy to Promote GIAHS.

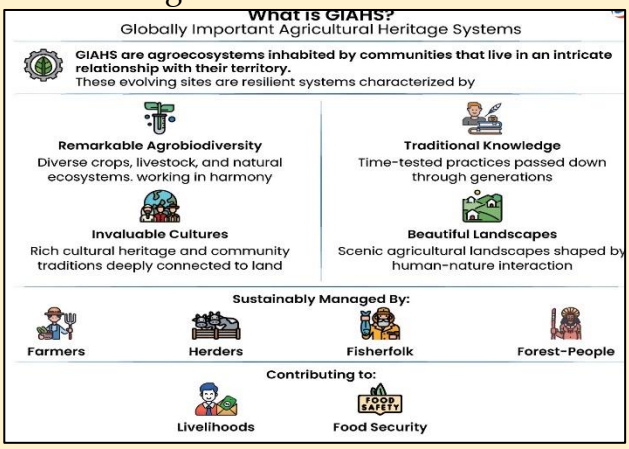
India has three Globally Important Agricultural Heritage Systems (GIAHS) recognized by FAO:

- Koraput region (Odisha)
- Kuttanad below-sea-level farming system (Kerala)
- Saffron Heritage of Kashmir

These sites preserve unique farming traditions that integrate biodiversity, community participation, and eco-friendly practices for food security and cultural heritage.

Key Policy Measures

- **Government Support:** Funding through schemes like Rashtriya Krishi Vikas Yojana (RKVY) and Mission for Integrated Development of Horticulture (MIDH).
- **Biodiversity Conservation:**Community seed banks, organic farming, landrace preservation, and branding of local products.
- **Infrastructure & Research:** Paddy infrastructure in Kuttanad, conservation of rice diversity in Koraput, and ecological research initiatives.
- **Legal & Institutional Framework:**Support from agencies like the Protection of Plant Varieties and Farmers' Rights Authority and the National Biodiversity Authority.
- **Local Empowerment:** Training, capacity building, and community-led management of resources.



Strategic Focus

- Mainstreaming GIAHS into national policies and sectoral plans.
- Developing biodiversity databases, documenting traditional knowledge, and promoting agro-eco tourism.
- Enhancing climate resilience through landrace identification and biotechnology.
- Strengthening community participation with tribal knowledge, local seed banks, and farmer-led innovations.

Globally Important Agricultural Heritage Systems (GIAHS)

- **Concept:** An FAO initiative (2002) to recognize and safeguard traditional agricultural systems that combine biodiversity conservation, resilient ecosystems, and cultural heritage.
- **Features:**
  - Conservation of unique crop varieties and indigenous knowledge.
  - Community participation in sustainable farming.
  - Integration of food security, ecology, and culture.
- **Significance:**
  - Preserves traditional knowledge and agrobiodiversity.
  - Strengthens climate resilience and rural livelihoods.
  - Promotes eco-tourism and market access for local produce.

U.S. SANCTIONS ON ICC OFFICIALS

The United States, under President Donald Trump, imposed sanctions on two judges and two prosecutors of the International Criminal Court (ICC) for pursuing investigations against Israeli leaders and U.S. officials over alleged war crimes. Secretary of State Marco Rubio called the ICC a national security threat, accusing it of politicization and overreach.

The sanctioned officials from France, Fiji, Senegal, and Canada were involved in cases linked to Israel and the U.S. Washington argued the move was necessary to protect

sovereignty, though it may hinder ICC's work on war crimes cases.

Israeli Prime Minister Benjamin Netanyahu welcomed the sanctions, terming them a defense against false allegations. The ICC condemned the decision as an attack on its independence and a setback for global justice. The court had recently issued arrest warrants against Netanyahu and others for alleged crimes in Gaza. Since 2021, its investigations have shifted focus from U.S.-related cases to crimes committed by Afghan officials.

International Criminal Court (ICC)

- **Establishment**: Created under the Rome Statute (1998); came into force in 2002. Headquartered at The Hague, Netherlands.
- **Mandate:** Prosecutes individuals (not states) for genocide, crimes against humanity, war crimes, and crime of aggression.
- **Membership:** 124 countries are parties; notable non-members include the U.S., China, Russia, and India.
- **Jurisdiction:** Acts only when national courts are unwilling or unable to prosecute. Can investigate crimes committed:

    1. In the territory of a member state, or
    2. By nationals of a member state, or
    3. Through UN Security Council referral.

- **Structure:** Composed of the Presidency, Judicial Divisions, Office of the Prosecutor, and Registry.
- **Significance:** Provides a permanent global mechanism for accountability in cases of mass atrocities; strengthens international justice.
- **Criticism:** Accused of political bias, selective justice (focus on African nations), lack of enforcement power, and non-universal acceptance.

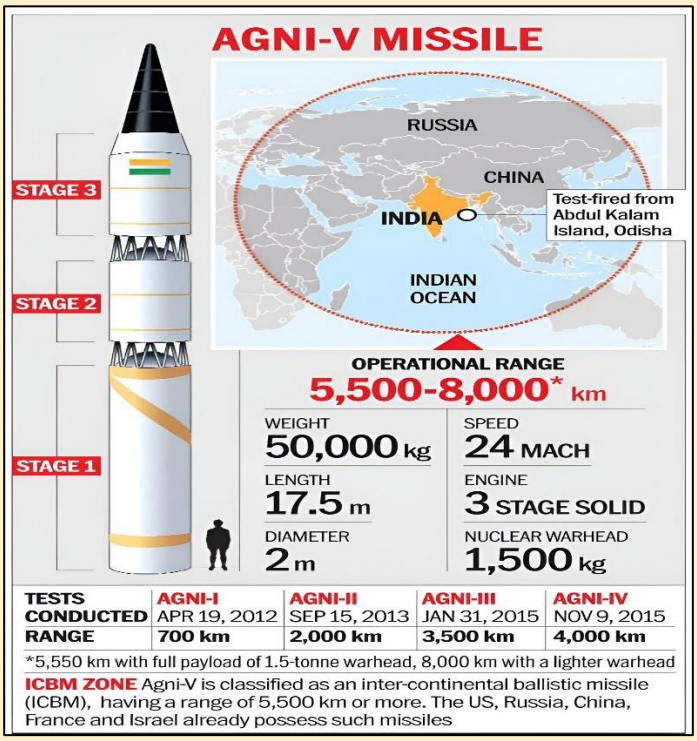
AGNI-5 MISSILE

India successfully test-fired its Agni-5 missile from the Integrated Test Range at Chandipur, Odisha

The Defence Ministry confirmed that the launch validated all operational and technical parameters.

Developed by DRDO, Agni-5 is classified as an intercontinental ballistic missile (ICBM) with a range of around 5,000 km, designed to meet India's strategic security requirements.

Earlier, on March 11, 2024, India had tested a MIRV-equipped variant of Agni-5, capable of striking multiple targets with independently guided warheads.



Agni-5 Missile

- **Type:** Intercontinental Ballistic Missile (ICBM) developed by DRDO.
- **Range:** Around 5,000 km (can cover entire Asia and parts of Europe & Africa).
- **Stages:** Three-stage, solid-fueled missile with road and rail mobility (canisterized for quick launch).
- **Warhead Capability:** Nuclear-capable; latest variant tested with MIRV (Multiple Independently Targetable Re-entry Vehicle) technology (March 2024) for striking multiple targets.
- **Significance:**

- Strengthens India's credible minimum deterrence and No First Use (NFU) doctrine.
- Enhances second-strike capability under India's nuclear triad.
- Boosts strategic security vis-à-vis China and beyond South Asia.

INTERNATIONAL BIG CAT ALLIANCE (IBCA)

Nepal officially joined the International Big Cat Alliance (IBCA) in August 2025. This India-led global initiative focuses on the conservation of seven big cat species.

Nepal's diverse wildlife includes the snow leopard, tiger and common leopard. Its membership strengthens international cooperation to protect these iconic animals.

Species	Scientific Name	IUCN Red List	CITES	Indian Wildlife (Protection) Act, 1972
Tigers	Panthera tigris	Endangered	Appendix-I	Schedule-I
Lions	Panthera leo	Vulnerable	Appendix-I	Schedule-I
Leopards	Panthera pardus	Vulnerable	Appendix-I	Schedule-I
Snow Leopards	Panthera uncia	Vulnerable	Appendix-I	Schedule-I
Pumas	Puma concolor	Least Concerned	Appendix II (P. c. Costaricensis and cougar: Appendix-I)	NA
Jaguars	Panthera onca	Near Threatened	Appendix-I	NA
Cheetahs	Acinonyx jubatus	Vulnerable	Appendix-I	Schedule-I

Background

The IBCA was launched by Prime Minister Narendra Modi on 9 April 2023 in Mysuru. It aims to conserve seven big cat species – tiger, lion, leopard, snow leopard, cheetah, jaguar and puma.

The alliance includes over 90 countries, both range and non-range nations, united by a shared goal of big cat conservation. The Union Cabinet approved the IBCA's establishment in February 2024 with headquarters in India.

Objectives and Functions of IBCA

IBCA seeks to create synergy among member countries and stakeholders. It consolidates conservation expertise and shares best practices globally. The alliance provides a common repository of technical knowledge and financial resources. It also strengthens existing intergovernmental platforms and networks focused on species-specific conservation. The alliance supports ecological security and climate change mitigation through big cat protection.

Significance of Nepal's Membership

Nepal is home to three big cat species, making it a vital partner. Its joining enhances global collaboration and resource sharing. Nepal's forests and mountains serve as key habitats for snow leopards and tigers.

The alliance congratulated Nepal for its commitment to ecological security. This step aids in reversing population declines and securing habitats for future generations.

India's Role in IBCA

India has decades of experience in big cat conservation, especially with Project Tiger. It also leads conservation efforts for lions, snow leopards and leopards.

Through the National Tiger Conservation Authority and Ministry of Environment, Forest and Climate Change, India coordinates the IBCA. India's conservation models serve as examples for other member countries.

Global Impact

The IBCA encourages a unified approach to big cat conservation worldwide. It encourages international cooperation beyond borders. By mobilising resources and expertise, it aims to halt the decline of big cats.

The alliance also addresses threats from habitat loss and climate change. Its success depends on active participation from member countries. The International Big Cat Alliance (IBCA) officially signed an agreement with India to set up headquarters and main office within the country. This happened more than two months after IBCA became a full international organisation based on a treaty between countries.

The agreement allows India to host the IBCA's main office and gives it the support needed for its efficient functioning. The agreement also includes details about visas, special rights and protections for IBCA staff and offices, how the agreement will begin, and other related matters.

Background and Formation

The IBCA was proposed by Prime Minister of India Narendra Modi in 2019. It was officially launched in April 2023 during the 50th anniversary of Project Tiger. The alliance became a legal entity after five countries ratified its framework agreement in September 2023. These countries include India, Liberia, Eswatini, Somalia, and Nicaragua.

Objectives of IBCA

The primary objectives of the IBCA are to combat illegal wildlife trade, conserve natural habitats, and mobilise resources for conservation efforts.

The alliance also aims to address the impacts of climate change on big cats. It promotes policies that align biodiversity conservation with local community needs.

Focus Species

The IBCA focuses on the conservation of seven big cat species. These include the tiger, lion, leopard, snow leopard, puma, jaguar, and cheetah.

Among these seven, five of them (tiger, lion, leopard, snow leopard, and cheetah) are found in India. The puma and jaguar, while important, are not native to the Indian subcontinent.

Member Countries and Governance

Currently, the IBCA has four member countries. These are India, Nicaragua, Eswatini, and Somalia. The governance structure includes an Assembly of Members, a Standing Committee, and a Secretariat based in India.

The framework is similar to that of the International Solar Alliance (ISA). A Director-General is appointed by the Ministry of Environment, Forest and Climate Change (MoEFCC) to oversee operations.

Financial Support

The Government of India has allocated a budget of Rs 150 crore for the IBCA. This funding is intended to support infrastructure development and ongoing operational costs for five years, from 2023-24 to 2028-29. This financial backing is crucial for achieving the IBCA's conservation goals.

Importance of Big Cats

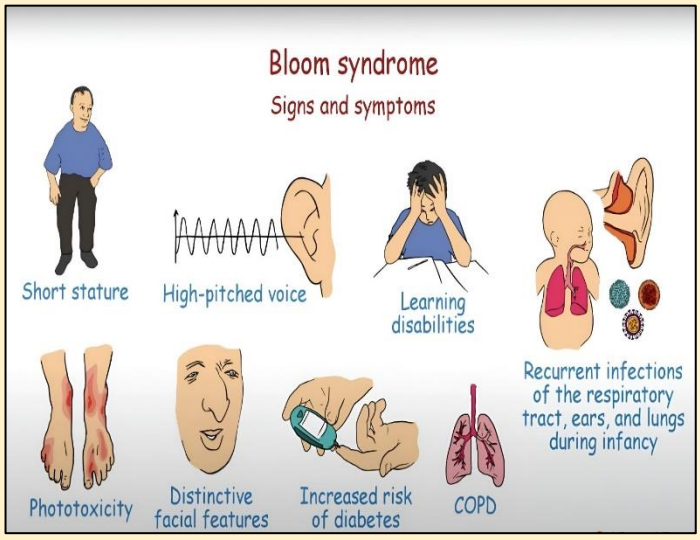
Big cats play a vital role in ecosystems. They are considered keystone species, meaning their presence is critical to maintaining the health of their habitats.

However, these species face numerous threats, including poaching, habitat loss, and illegal wildlife trade. The Indian subcontinent has been home to several big cat species, but conservation efforts are essential to ensure their survival.

BLOOM SYNDROME

Bloom Syndrome is a rare genetic disorder with fewer than 300 cases reported worldwide. Recently, a 12-year-old girl in Chennai underwent a bone marrow transplant using stem cells from her younger brother, marking medical intervention in India.

This disorder affects DNA repair mechanisms, leading to multiple health challenges and a high risk of cancer.



Genetic Basis and Inheritance

Bloom Syndrome is caused by mutations in the BLM gene. This gene produces a protein essential for maintaining DNA structure during replication and repair.

When mutated, cells lose the ability to fix damaged DNA, causing abnormal cell growth. The condition is inherited in an autosomal recessive pattern.

Both parents must carry the mutation for a child to be affected. It is most common among the Ashkenazi Jewish population but occurs worldwide.

Signs and Symptoms

Symptoms vary widely but often include poor growth before and after birth. Affected individuals typically have below-average height and head size, with distinct facial features such as a narrow face, prominent ears, and a high-pitched voice.

Skin sensitivity to sunlight causes red rashes and abnormal pigmentation. Insulin resistance can lead to diabetes. Immune deficiencies increase vulnerability to infections like ear and lung infections and chronic obstructive pulmonary disease.

Other issues include hypothyroidism, developmental delays, and fertility problems in adults. Intellectual abilities are usually normal but learning disabilities may occur.

Health Complications

People with Bloom Syndrome face a markedly increased risk of cancer, often developing it early in life. By age 40, over 80% develop cancers such as leukaemia, lymphoma, gastrointestinal cancers, skin cancer, Wilms tumour, and osteosarcoma.

The risk of cancer is 150 to 300 times higher than in the general population. These cancers appear more frequently and at younger ages.

Diagnosis and Management

Diagnosis is confirmed through cytogenetic analysis, which detects chromosome abnormalities. There is no cure for Bloom Syndrome. Treatment focuses on managing symptoms and preventing complications.

This includes careful fluid management in infants, antibiotics for infections, immune globulin therapy for immune deficiencies, and regular monitoring for diabetes and thyroid problems. Patients are advised to avoid sun exposure and have frequent dermatological check-ups. Cancer screening is essential due to the high risk.

Bloom Syndrome in India

Though rare, cases have been reported in India. Medical literature documents a few instances, including children and adults with respiratory complications and other symptoms. The recent bone marrow transplant in Chennai marks advances in treatment options available in the country.

KERALA STATE CIVIL SERVICE ACADEMY

Established under Centre for Continuing Education Kerala (CCEK)

NURTURING YOUNG MINDS TOWARDS TOMORROW'S CIVIL SERVICE

COURSES

Prelims Cum Mains Regular Batch

Course Fee: : ₹ 49,200 (₹ 40,000 + 18% GST ₹ 7,200 + Caution Deposit ₹ 2,000)

Prelims Cum Mains Weekend Batch

For the Working Professionals & students who are doing their UG/PG

- Course Fee: Ongoing Degree/PG students: ₹ 41,300 (₹ 35,000 + 18% GST ₹ 6,300)
- Course Fee: Working Professionals : ₹ 49,200 (₹ 40,000 + 18% GST ₹ 7,200 + Caution Deposit ₹ 2,000)

Civil Service Foundation Course

For Higher Secondary School Students
Course Fee: ₹ 5,900 (₹ 5,000 + GST ₹ 900)

Talent Development Course

For High School Students
Course Fee: ₹ 4720 (₹ 4,000 + 18% GST ₹ 720)

REHEARSE
RESILIENCE
REKINDLE
REPHRASE

REHEARSE- Prelims Test Series

38 Test papers including 3 exclusive current affairs tests and 5 CSAT papers

RESILIENCE- Mains Test Series

17 Tests including compulsory papers

REKINDLE- PCM REPEATERS BATCH

Mentorship, Weekly Current Affairs classes, Bi Weekly CSAT classes, Prelims Test Series, Revision classes, Extensive Answer Writing class / Practices

REPHRASE- Mains Answer Writing Programme

This answer writing exercise will cover Essay, General Studies - I, General Studies - II, General Studies -III & General Studies -IV papers

KEY HIGHLIGHTS

- Prelims & Mains test series with All Kerala rank list.
- Expert faculties.
- Library facility across the centres.
- Instalment facility for fee payment available to BPL category students.

Optional Subjects

Geography, History, Malayalam, Political Science & International Relations, Public Administration and Sociology

Course Fees : Rs. 11,800/– (Fees Rs 10,000/- + GST Rs.1,800/-).

KERALA STATE CIVIL SERVICE ACADEMY

Charachira, Kowdiar P.O. Thiruvananthapuram - 695003. Phone: 0471-2313065, 2311654,
Email: directorccek@gmail.com, info.ccek@gmail.com Web : https://kscsa.org

LOG ON

For more details contact:
82810 98863

THIRUVANANTHAPURAM: 8281098864 || KOLLAM: 8281098867 || KONNI: 8281098872 || CHENGANNUR: 8281098871 || KOTTAYAM : 8281098863 || ERNAKULAM: 8281098873 || IDUKKI : 8281098863 || THRISSUR: 8281098874 || PALAKKAD : 8281098869 || PONNANI : 8281098868 || KOZHIKODE : 8281098870 || WAYANAD : 9496810543 || KALLIASSERY: 8281098875 || KASARAGOD : 8281098876