

## MONTHLY CURRENT AFFAIRS MAGAZINE

# JANUARY 2025



## ROHINGYAN REFUGEES CASE

A recent study examining the plight of Rohingya refugees detained in India has highlighted gross violations of constitutional and human rights and criticized India's failure to uphold its obligations under international human rights treaties.

Background:

According to the United Nations High Commissioner for Refugees (UNHCR), nearly 22,500 Rohingya refugees currently reside in India.

The Rohingya of Myanmar constitute the world's largest stateless population, estimated to number approximately 2.8 million.

- The 1951 Refugee Convention and its 1967 Protocol enshrine the principle of non-refoulement, which prohibits states from expelling individuals when evidence suggests they would face persecution, torture, or other severe human rights violations upon return.

- Moreover, its status as customary international law imposes binding obligations on states regardless of formal assent.

In a 2007 advisory opinion, the UNHCR affirmed that non-refoulement constitutes customary law and is binding on all states, including those not parties to the Refugee Convention or the 1967 Protocol.



As India is neither a signatory to the Refugee Convention nor a party to key international instruments such as the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment and the International Convention for the Protection of All Persons from Enforced Disappearance, it maintains that it bears no legal obligation to provide asylum or adhere to non-refoulement.

India continues to detain Rohingya refugees under domestic legal frameworks, notably the Foreigners Act, 1946, and the Passport Act, 1967.

In response to a public interest litigation (PIL) in the Supreme Court seeking the release of detained Rohingya refugees, the Union government clarified that while they are entitled to the right to life under Article 21, they do not possess the right to reside or settle in India.

In 2021, the top court in *Mohammad Salimullah v. Union of India*, rejected a plea to prevent the deportation of Rohingya refugees detained in Srinagar accepting the Centre's national security concerns.

The International Covenant on Civil and Political Rights, to which India is a party, implicitly obligates member states under Article 7 to refrain from refouling individuals to places where they may face torture or cruel, inhuman, or degrading treatment.

Similarly, the principle of non-refoulement is enshrined in other instruments, including the International Convention on the Elimination of All Forms of Racial Discrimination and the Convention on the Rights of the Child, both of which India has ratified.

Further, the Convention Against Torture makes an express mention of non-refoulement under Article 3. While India's position as a signatory but not a ratifier renders it non-binding, any deviation from the principles would compromise the commitment India demonstrated by signing the treaty.

Although India lacks a domestic refugee law, the Supreme Court in landmark rulings such as *Vishaka & Ors. v. State of Rajasthan* (1997) and *National Legal Services Authority v. Union of India* (2014), has affirmed that in absence of domestic legislation on a matter, international conventions and norms must be applied to ensure the dignity of human life. Several High Courts in India have also interpreted the principle of non-refoulement as integral to Article 21 of the Constitution.

What are the existing concerns?

The absence of a standardised refugee policy has led to disparate treatment of different refugees, driven by India's shifting geopolitical and diplomatic interests.

While groups such as Tibetans, Sri Lankans, and Afghans are granted refugee certificates or long-term visas, most Rohingya refugees – despite being registered with the UNHCR – often face arbitrary detention and imprisonment. Further, the Citizenship Amendment Act, 2019, excludes Muslim minorities, such as the Rohingya, from its ambit.

The lack of legal representation and aid for detained Rohingya refugees also poses a concern. Detention centres housing Rohingya refugees are plagued by dehumanizing conditions.

In light of the appalling conditions at the Matia Transit Camp, the Supreme Court in October, directed the Assam State Legal Services to conduct surprise visits and evaluate the conditions in which the refugees are living.

### TRANSFORMATIVE CHANGE REPORT

In another report released simultaneously, IPBES called for fundamental and transformative shifts in the way people view and interact with the natural world in pursuit of its well-being.

This report, being called the Transformative Change Report, said current, and previous, approaches to deal with ecological decline had failed, and a new and different approach was needed.

This new and transformative approach, it said, must be based on four fundamental principles – equity and justice, pluralism and inclusion, respectful and reciprocal human-nature relationships, and adaptive learning and action.

It said the world needed to act immediately on new approaches because the cost of delaying action would increase the costs.

There were also benefits to be had from immediate action. It said recent estimates suggested that more than 10 trillion dollars in business opportunities, and about 400 million jobs, could be generated by 2030 through sustainable economic approaches that rely on nature-positive economic models.

## PM CARES FUND

The contribution to Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM CARES Fund) fell to Rs 912 crore during the financial year 2022-23, its lowest since the public charitable trust was created in March 2020 following the COVID-19 outbreak.



The PM CARES Fund was set up on March 28, 2020, as a public charitable trust under the legal framework of the Registration Act, 1908.

It aims to provide relief during emergencies, including health crises, natural disasters, and other distress situations.

**Trustees:**

The Prime Minister is the Chairperson of the fund. Ex-officio trustees include the Minister of Defence, Minister of Home Affairs, and Minister of Finance.

The Chairperson of the Board of Trustees (Prime Minister) shall have the power to nominate three trustees to the Board of Trustees who shall be eminent persons in the field of research, health, science, social work, law, public administration and philanthropy.

Any person appointed a Trustee shall act in a pro bono capacity.

The fund accepts voluntary contributions from individuals, organizations, and foreign donors and does not get any budgetary support.

Donations to the PM CARES Fund qualify for 100% exemption under Section 80G of the Income Tax Act, 1961. They also count as Corporate Social Responsibility (CSR) expenditure under the Companies Act, 2013.

**Foreign Contributions:** The fund is exempt under the Foreign Contribution (Regulation) Act (FCRA), allowing it to accept donations from foreign individuals and organizations.

**Administrative Costs:** No administrative expenses are deducted; the entire contribution is used for relief efforts.



**Non-Governmental Status:** The fund is not considered a “public authority” under the Right to Information (RTI) Act, 2005, sparking debates over transparency and accountability.

### Siang Upper Multipurpose Project

A sense of unease prevails in two districts along the Siang River in Arunachal Pradesh, as protests intensify against the proposed Siang Upper Multipurpose Project (SUMP). The government asserts that SUMP is not merely another hydropower initiative but a measure to save the river by mitigating the impacts of China’s dam-building activities upstream in Tibet.



The Siang originates near Mount Kailash in Tibet, where it is known as the Yarlung Tsangpo.

### ABOUT THE PROPOSED PROJECT

- The 11,000-MW Siang Upper Multipurpose Project was first proposed by the NITI Aayog in 2017
- As per a preliminary report by the NHPC, which is in charge of the proposed project, the reservoir capacity is expected to be 9 billion cubic metres
- Three sites have been earmarked for the project in Siang district's Parong and Dite Dime, and Ugeng in Upper Siang district
- Around 13 villages in the region and farmlands in 27 other villages may be completely submerged due to this project

It traverses over 1,000 km eastward before forming a horseshoe bend around the Namcha Barwa peak and entering Arunachal Pradesh as the Siang.

Further downstream, in Assam, it joins tributaries like the Dibang and Lohit to become the Brahmaputra.

SUMP has faced opposition since it was first proposed by the NITI Aayog in 2017.

While the precise scale of the project will only be ascertained after feasibility surveys, a preliminary report submitted by the National Hydroelectric Power Corporation (NHPC)

in December 2022 to the Central Electrical Authority was for an 11,000-MW project with a reservoir capacity of 9 billion cubic metres.

This makes the project several times larger in scale than other projects currently in the works in the country.

The three sites earmarked for SUMP are Parong and Dite Dime in Siang district, and Ugeng in Upper Siang district.

The Adi tribe here revere the Siang as a provider, referring to it as Aane (mother) Siang. Cultivation on its banks was encouraged and facilitated by the state after Independence to move away from shifting cultivation in the hills.

So while settled agriculture along the river is 60 years old among the farmers of this belt, they are now completely dependent on.

**Conduct of election Rules amended**

The Centre recently amended the Conduct of Election Rules to restrict access for the public to a section of poll documents. This was done by the Union Law Ministry following a recommendation from the Election Commission (EC).

While the EC said the amendment aims to restrict access to electronic data, the Opposition and transparency activists have been up in arms, branding it as an attack on the right to information and electoral freedom.

The Conduct of Election Rules, 1961, is a set of rules which provide for provisions on how to conduct the elections as per the Representation of People Act.

Rule 93(2)(a) of the 1961 Conduct of Election Rules had earlier stated that “all other papers relating to the election shall be open to public inspection” but after the amendment, it reads, “all other papers as specified in these rules relating to the election shall be open to public inspection.”

Why has the amendment been brought in now?



The move comes after a recent direction to the EC by the Punjab and Haryana High Court to share all documents related to the Haryana Assembly election, including treating CCTV footage also as permissible under Rule 93(2) of the Conduct of Election Rules, to a petitioner.

An official of the Election Commission explained that the rule previously mentioned election papers but did not explicitly refer to electronic records, leading to ambiguity.

To address this and considering concerns over the violation of voting secrecy and the potential misuse of CCTV footage from polling stations, particularly through artificial intelligence, the rule was amended.

The official noted that sharing such footage could have serious consequences, especially in sensitive regions like Jammu and Kashmir, where voters' lives might be at risk.

RTI activists have termed the move as a setback to transparency. Rule 93 is akin to the Right to Information Act as far as elections are concerned and, any change hurts the citizen's right to know about the process.

The amendment appears to aim at restricting citizens access to a wide range of documents generated during elections.

Many of these documents are not explicitly mentioned in the Conduct of Election Rules but are referenced in handbooks and manuals published periodically by the Election Commission.

These records include reports submitted by Election Observers, scrutiny reports from Returning Officers after polling day, and Index Cards sent to the Election Commission following the declaration of results, which contain detailed election statistics.

Given the controversy surrounding voter turnout in recent Lok Sabha and Assembly elections, access to the Presiding Officers' diaries, which include detailed data about voter turnout at various times during polling day and the number of tokens distributed to voters in the queue at the scheduled closing hour, is not specifically mentioned in the Conduct of Election Rules. Yet access to such documents is crucial to assess the fairness of elections.

## TRINIDAD AND TOBAGO

The government of Trinidad and Tobago declared a state of emergency on Monday (December 30), following a deadly weekend of violence in the Caribbean dual-island nation.

### Background:

Trinidad and Tobago has a population of 1.5 million and already accounted for one of the highest murder rates in the Caribbean, along with Jamaica and Haiti.



Trinidad and Tobago is a twin-island nation located in the southern Caribbean, near the northeastern coast of Venezuela. It is the southernmost island country in the Caribbean. It is an active member of CARICOM, Organization of American States (OAS), and the Commonwealth of Nations.

Trinidad is the larger and more populous island. Tobago, the smaller island is located northeast of Trinidad.

The capital city is Port of Spain, located on the island of Trinidad.

Colonial Past: Trinidad was colonized by the Spanish in the 16th century, followed by the British in the 19th century. Tobago changed hands between the British and French several times before becoming a British colony.

Indentured Labour: After the abolition of slavery, Indians were brought as indentured laborers (1845–1917) to work on sugar plantations, shaping the country's demographics and culture.

Independence: Trinidad and Tobago gained independence from Britain on August 31, 1962.

Republic: The country became a republic within the Commonwealth on August 1, 1976.

### **CUBIC KILOMETRE NEUTRINO TELESCOPE**

Scientists are deploying two telescopes to detect high-energy neutrinos, also known as ghost particles, under the Mediterranean Sea. The two telescopes are part of the Cubic Kilometre Neutrino Telescope or KM3NeT.

Background: -

These telescopes are much like the IceCube Neutrino Observatory, which can detect high-energy neutrinos from deep space but is under the frozen ice in the Antarctic rather than being in the water.





## WHAT ARE NEUTRINOS?

Detected for the first time in 1959 — though their existence was predicted almost three decades earlier, in 1931 — neutrinos are tiny particles, very similar to electrons, but without any electric charge.

They are one of the fundamental particles the universe is built of, and are the second most abundant subatomic particles after photons.

Neutrinos are so numerous that about a billion of them pass through a cubic centimetre of space every second.

Why do scientists want to study high-energy neutrinos?

Although neutrinos are everywhere, not each one of them is important to study. Scientists are interested in examining super- fast, high-energy neutrinos that have come from far, far away.

Such neutrinos are rare and mostly originate from exotic events such as supernovae, gamma-ray bursts or colliding stars.

Studying high-energy neutrinos can help astrophysicists investigate those space mechanisms and regions like the centre of our Milky Way Galaxy which are shrouded in dust.

Dust absorbs and scatters the visible light from objects, making them difficult or impossible to observe with optical telescopes

Why are scientists building underwater neutrino telescopes?

High-energy neutrinos, however, are not just rare but also extremely difficult to detect. One reason is that neutrinos barely interact with anything.

To detect high-energy neutrinos, there is a need for a large volume of optically transparent material in a place where it is extremely dark.

The location needs to be dark because the detectors look for flashes of Cherenkov radiation: light that neutrinos produce when they interact with a water or ice molecule.

These flashes help scientists trace the path of that neutrino, giving them details about its source, the amount of energy it contains, and its origins

### Neutrino Observation efforts

Cubic Kilometre Neutrino Telescope (KM3NeT)

The Cubic Kilometre Neutrino Telescope (KM3NeT) is a cutting- edge European research infrastructure designed to detect neutrinos.

Location: KM3NeT is located at the bottom of the Mediterranean Sea.

It consists of two main detectors: ARCA (Astroparticle Research with Cosmics in the Abyss) and ORCA (Oscillation Research with Cosmics in the Abyss).

## ICECUBE NEUTRINO OBSERVATORY :

**The IceCube Neutrino Observatory is a pioneering astrophysical observatory located at the South Pole.**

**Location:** Situated within the Antarctic ice sheet near the Amundsen-Scott South Pole Station.

Utilizes over 1 cubic kilometer of ice as a detection medium.

**IceCube, which has been operational since 2011, was the first telescope to detect high-energy neutrinos.**

## SRISAILAM TEMPLE

**The Archaeological Survey of India (ASI) has made a significant discovery at the Srisailam Temple in Andhra Pradesh, uncovering several copper plates and other ancient inscriptions in the temple's Ghantamandapam.**



Background: -

The Srisailam temple, also known as the Mallikarjuna Swamy Temple, is one of the most revered and ancient pilgrimage sites in India.

**Location:** Situated in the Nallamala Hills, on the banks of the Krishna River, in Kurnool district, Andhra Pradesh.

**Deity:** Dedicated to Lord Mallikarjuna (Shiva) and Goddess Bhramaramba (Parvati).

### Significance:

It is one of the 12 Jyotirlingas of Lord Shiva and one of the 18 Shakti Peethas of Goddess Parvati, making it unique for housing both.

The temple is a prominent center for Shaivism and Shaktism.

There are inscriptional evidence from the Satavahana dynasty which place the temple to be existent from the 2nd century.

Most modern additions were done during the time of king Harihara I of Vijayanagara Empire (14th and 15th centuries).

The veerasheromandapam and paathalaganga steps was constructed during the time of Reddi Kingdom (12th and 13th centuries).

**Style:** Dravidian style of architecture with intricately carved gopurams and mandapas.

## PANGOLINS

Recent incidents in Telangana have renewed concerns about the smuggling of pangolins, a scaly nocturnal mammal known for its huge demand in the international market. This has prompted renewed vigilance against its illicit trafficking.

Background: -

The creatures are strictly nocturnal, repelling predators by curling up into scaly spheres upon being alarmed. The same defence mechanism however, makes them slow and easy to catch once spotted

Globally there are eight pangolin species, four each in Africa and Asia. India is home to two species – Indian pangolin *Manis crassicaudata* and Chinese pangolin *Manis pentadactyla*.



Indian pangolins are found in Bangladesh, India, Nepal, Pakistan, and Sri Lanka.

In India, the species (Indian pangolin) is widely distributed and has been recorded in Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Rajasthan, Tamil Nadu, Uttarakhand, Uttar Pradesh, and West Bengal.

In India, both Indian pangolins and Chinese pangolins are listed in Schedule I of the Wildlife (Protection) Act, of 1972. Therefore hunting, trade, or any other form of utilisation of the species or their body parts and derivatives is banned.

Since 2017, all pangolin species have been listed in Appendix I of the Convention on International Trade in Endangered Species (CITES), prohibiting their commercial trade.

Chinese Pangolin is classified as 'Critically Endangered' on the International Union for Conservation of Nature (IUCN) Red List while the Indian Pangolin is classified as 'Endangered' on the IUCN Red List.

They are the only known mammals with large keratin scales covering their skin. They are also toothless.

These animals are inherently shy and have minimal requirements for sustenance. Their diet primarily consists of ants, termites, and their eggs and larvae. Their sense of smell is extraordinary but vision and hearing are poor.

Pangolins are the most trafficked mammal in the world – with demand primarily in Asia and in growing amounts in Africa – for their meat and scales. There is also demand in the United States for pangolin products, particularly for their leather to be used in boots, bags, and belts.

### Significance of Pangolins

Pangolins are “ecosystem engineers” that build burrows that help circulate soil organic matter, increase soil moisture and aeration, and affect plant community succession through their burying behaviour.

The burrows made by pangolins also get utilised as shelters by other species within their ecosystem.

## AMAZON RAINFORESTS

2024 was a brutal year for the Amazon rainforest, with rampant wildfires and extreme drought ravaging large parts of a biome that’s a critical counterweight to climate change.

Background: –

The Amazon is twice the size of India and sprawls across eight countries and one territory, storing vast amounts of carbon dioxide that would otherwise warm the planet.



### About Amazon Rainforest

The Amazon Rainforest, often referred to as the “lungs of the Earth,” is the world’s largest tropical rainforest.



Lies within the Amazon River Basin, covering countries such as Brazil, Peru, Colombia, Venezuela, Ecuador, Bolivia, Guyana, Suriname, and French Guiana.

**Climate:** Features an equatorial climate with high humidity, temperatures ranging from 25–30°C, and significant rainfall throughout the year.

**Environmental Significance**

**Carbon Sink:** Absorbs 2 billion tons of CO<sub>2</sub> annually, mitigating global warming.

**Oxygen Production:** Contributes significantly to the global oxygen cycle, earning its nickname as the “lungs of the Earth.”

**Water Cycle Regulation:** Produces 20% of the world’s freshwater runoff into the oceans via the Amazon River.

Influences global and regional precipitation patterns, including the South American monsoon.

## VIKRAM SARABHAI

Vikram Ambalal Sarabhai, the father of India’s space programme, died on December 30, 1971, in Kovalam, Kerala, at the age of 52.

**Background: -**

Late President APJ Abdul Kalam once had called the “Mahatma Gandhi of Indian Science”.

### Key takeaways

Born to Ambalal and Sarla Devi, Ahmedabad’s leading textile- mill owners on August 12, 1919.

After studying from Gujarat University in Ahmedabad, Sarabhai went to study physics and mathematics at Cambridge University, but was forced to return when World War II broke out.

- He completed his post-graduation at the Indian Institute of Science in Bengaluru under Dr CV Raman, where he also met Dr Homi Bhabha, and returned later to Cambridge for a PhD in cosmic rays.



Space Research and ISRO Formation:

Visionary Leader: Recognized the importance of space technology for India's development.

Played a significant role in establishing the Physical Research Laboratory (PRL) in Ahmedabad in 1947, focusing on fundamental physics and space sciences.

Establishment of ISRO (1969): Played a pivotal role in setting up the Indian Space Research Organisation (ISRO) to promote space exploration and satellite-based communication.

Instrumental in India's first satellite, Aryabhata (1975), launched posthumously.

Atomic Energy and Research Institutes:

Worked with Homi Bhabha to strengthen India's atomic energy program.

Sarabhai succeeded Homi Bhabha as the chairman of the Atomic Energy Commission of India.

Indian Institute of Management (IIM), Ahmedabad: Co- founded IIM Ahmedabad in 1961, establishing it as a premier management institute globally.

Satellite Technology and Applications:

Conceptualized the Indian National Satellite System (INSAT) to advance communication, education, and meteorology.

Satellite Instructional Television Experiment (SITE) : Sarabhai started a dialogue with NASA that formed the base for Satellite Instructional Television Experiment. Launched in 1975 from village Pij in Gujarat's Kheda district, it would beam TV programmes to villages and was the first Indo-US space venture using technology for education.

### GLASS CHILD SYNDROME

The term "glass child" refers to siblings of children with chronic illnesses or disabilities. These siblings often feel invisible, overshadowed by their sibling's condition, which has gained attention, denoting the emotional struggles faced by these children.

Emotional Impact on Siblings :

Siblings of chronically ill children may experience feelings of neglect.

They often perceive that their needs are secondary to those of their ill sibling. Studies indicate that these emotions can lead to resentment and jealousy as they navigate their family dynamics.

Recognising Signs of Distress

It is crucial for parents to observe signs of emotional distress in their healthy children.

Symptoms may include frustration, jealousy, or feelings of being overlooked. Parents should remain vigilant to ensure that these feelings are addressed promptly and compassionately.

Maintaining open lines of communication is vital. Parents should engage their healthy children in discussions about their sibling's illness. This helps to validate their feelings and provides an opportunity for siblings to express their concerns and emotions.

## COFFEE EXPORT SURGE

Traditionally a tea exporter, India is making significant inroads into the global coffee market with total exports during the current financial year up to November crossing the \$1-billion mark for the first time, according to data from Centre for Monitoring Indian Economy (CMIE).

Background: -

Notably, India's exports of tea saw little change despite expectations of gaining new markets following the economic crisis in Sri Lanka, one of the largest tea exporters in the world.

India is the only country that grows all of its coffee under shade.  
India is the seventh-largest producer of coffee globally.



### Types of Coffee Grown in India :

Arabica (*Coffea arabica*):

Grown at higher altitudes (900–1,800 meters).

Arabica has a higher market value than Robusta coffee due to its mild aromatic flavour.

Requires a cool climate and less rainfall compared to Robusta.

Robusta (*Coffea canephora*):

Grown at lower altitudes (500–1,000 meters).

Higher yield and more resistant to diseases.

Preferred for instant coffee production due to its strong flavor.

### Major Coffee-Producing States

Karnataka: Largest producer, accounting for about 70% of India's coffee output.

Key regions: Kodagu (Kodagu district alone produces 33% of India's coffee) , Chikmagalur, Hassan.

Kerala: Second-largest producer.

Key regions: Wayanad, Idukki, and Palakkad.

Tamil Nadu: Known for its coffee estates in the Nilgiri Hills.

Important regions: Pulneys, Nilgiris, and Shevaroy.

Non-traditional Areas: Andhra Pradesh, Odisha, and the northeastern states (especially Arunachal Pradesh and Nagaland) are emerging coffee-growing regions.

Climatic Requirements for Coffee

Temperature: 15°C–28°C.

Rainfall: 1,500–2,500 mm annually, well-distributed.

Soil: Well-drained, rich in organic matter.

The sharp growth is partly attributed to a surge in Robusta coffee prices and partly due to stocking ahead of the European Union's new deforestation regulation that could raise the cost of coffee as well as several other agricultural exports to the EU.

The European Union's Deforestation Regulation (EUDR), aimed at preventing products sold in the EU from being sourced from deforested land, was scheduled for implementation in December.

However, the European Parliament recently decided to extend the regulation's timeline by another year.

According to the think tank Global Trade Research Initiative (GTRI), the EUDR is expected to impact India's agricultural exports to the EU, valued at \$1.3 billion, more severely than exports from competing countries due to India's higher deforestation rate.

## ARSENIC CONTAMINATION IN INDIA

Arsenic contamination, long a concern in Bihar's water supply, has now been detected at alarming levels in staple foods such as rice, wheat and potatoes, posing significant health risks to thousands, particularly in rural areas.

### Background:

A study conducted by researchers from Patna-based Mahavir Cancer Sansthan and Research Centre has revealed high arsenic concentrations in these staple foods in 11 arsenic hotspot districts of Bihar.

The findings underscored an urgent public health challenge as the food chain becomes increasingly contaminated.

Arsenic is a naturally occurring metalloid found in the Earth's crust, existing in both organic and inorganic forms.

Inorganic arsenic compounds, typically more toxic, are commonly associated with groundwater contamination.



## Health Impacts :

**Arsenicosis:** Long-term exposure to arsenic-contaminated water can lead to arsenicosis, which includes skin lesions, cancer (skin, bladder, kidney, lung), and other health issues such as hypertension and diabetes.

Arsenic is classified as a Group 1 carcinogen by the International Agency for Research on Cancer (IARC).

**Non-Carcinogenic Risks:** Prolonged exposure can also cause non-carcinogenic health risks such as skin pigmentation changes and hard patches on palms and soles.

## Arsenic Contamination in India



In India, arsenic contamination of groundwater is a significant public health concern, particularly in the alluvial plains of the Ganga-Brahmaputra-Meghna (GBM) basin. The primary states affected include West Bengal, Bihar, Jharkhand, Uttar Pradesh, Assam, Manipur, and Chhattisgarh.

In these regions, arsenic concentrations in groundwater often exceed the World Health Organization's (WHO) permissible limit of 10 µg/L.

A study focusing on the Middle Ganga Plain in Bihar revealed that individuals consuming arsenic-laden water exhibited elevated arsenic levels in urine, hair, and nails, correlating with the concentrations found in their drinking water

Sources and Mechanisms:

The primary source of arsenic in Indian groundwater is geological, with arsenic naturally present in the sediments of the GBM basin.

Alluvial aquifers, which constitute about 90% of the affected regions, are particularly susceptible.

In these aquifers, arsenic is released into groundwater under specific geochemical conditions, often exacerbated by human activities such as excessive groundwater extraction and the use of certain pesticides

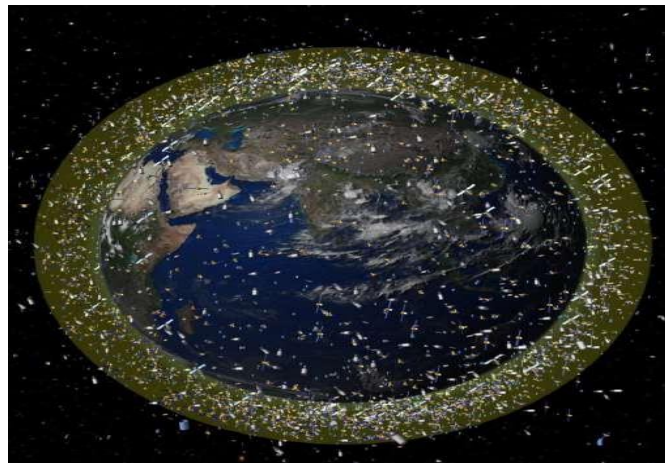
### KESSLER SYNDROME

In recent months, incidents involving space debris have escalated, raising concerns for astronauts aboard the International Space Station (ISS).

A near-collision event in November prompted the ISS to alter its trajectory, denoting the increasing risks associated with space clutter.

About Space Debris

Space debris consists of defunct satellites, spent rocket stages, and fragments from collisions or explosions. Experts estimate tens of thousands of pieces of debris orbit Earth, with many remaining untracked. This clutter threatens both human spaceflight and satellite operations.



Since the dawn of space exploration in 1957, over 650 incidents have contributed to space debris.

High-profile examples include the 2009 collision between a defunct Russian satellite and an active communications satellite, generating nearly 2,000 debris fragments.

Challenges in Tracking Debris

Tracking space debris poses challenges. Most objects smaller than a tennis ball remain undetected, and many pieces are too distant for effective monitoring. Even tiny fragments can inflict severe damage due to the high velocities at which they travel.

Space debris endangers not just astronauts but also vital technologies such as GPS, internet, and television services. Low-Earth orbit is particularly congested, where many operational satellites reside. A collision in this region could have catastrophic consequences.

While some debris will eventually re-enter Earth's atmosphere, high-altitude debris can persist for centuries. Efforts are underway to develop technologies for debris removal, including innovative solutions like braking sails.

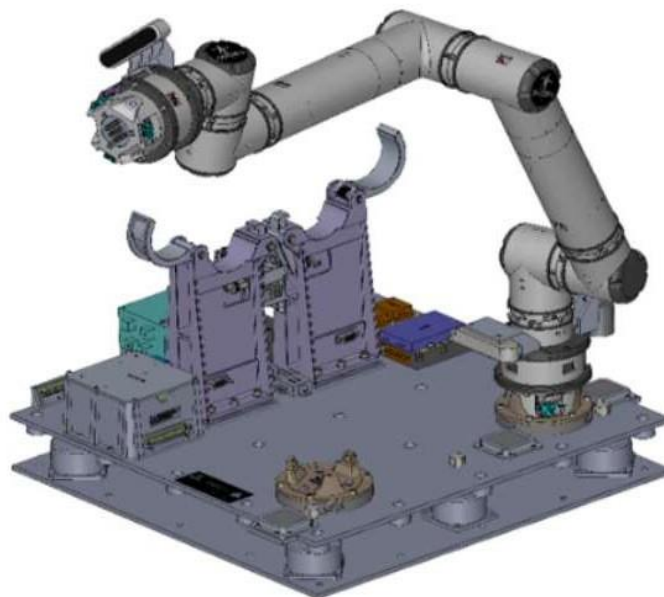
These initiatives, although in early stages, offer potential for mitigating the space junk crisis.

### INDIA'S FIRST ROBOTIC ARM

The Indian Space Research Organisation (Isro) successfully operated its first robotic arm in space, marking a significant milestone in the nation's space exploration endeavours.

The robotic arm, developed indigenously by Isro, is equipped with advanced sensors and actuators, enabling it to perform precise movements and handle delicate tasks in the harsh environment of space.

The Relocatable Robotic Manipulator-Technology Demonstrator (RRM- TD), also called the walking robotic arm, is India's first space robotic arm with the ability to "walk". It was developed by Isro's Inertial Systems Unit (IISU).



This demonstration is viewed as an important step toward developing robotic technologies for India's future space station, Bharatiya Antariksh Station (BAS), which requires abilities such as moving end-to-end, operating in microgravity, inspecting objects visually,

controlling the arm using cameras, working without cables, and performing tasks remotely with a "digital twin" model.

The arm has seven movable joints and can relocate itself like an inchworm to specific targets on the PS4-Orbital Experiment Module (POEM-4) platform in space.

The experiment aims to show how a robotic arm can work in a large area in orbit. It includes features like specially designed robotic joints, arm controllers, a grappling mechanism, cameras for precise movement, and advanced software to avoid obstacles and ensure safety.

These features are powered by a high-performance processor.

### HUMAN METAPNEUMOVIRUS (HMPV)

The country has already observed an increase in overall infections, particularly in northern provinces, with human metapneumovirus (HMPV) emerging as a notable pathogen among younger populations. Despite viral social media claims about a health emergency, no official declaration has been made.

HMPV is a respiratory virus first identified in 2001. It belongs to the Pneumoviridae family, which includes other viruses like respiratory syncytial virus (RSV).



HMPV causes infections resembling the common cold, affecting both upper and lower respiratory tracts.

The virus is most prevalent during winter and early spring, with children, the elderly, and immunocompromised individuals at higher risk for complications.

The incubation period typically ranges from three to six days. Most individuals recover without medical intervention within a few days. However, some may develop complications such as bronchitis or pneumonia, necessitating medical attention.



HMPV spreads through direct contact with infected individuals or contaminated surfaces. Transmission can occur via respiratory secretions from coughs or sneezes.

Close contact, such as shaking hands or hugging an infected person, increases the risk. Touching contaminated objects, like doorknobs or phones, followed by touching one's face can also facilitate the spread of the virus.

Currently, there is no vaccine or specific antiviral treatment for HMPV. Most patients manage symptoms with over-the-counter medications to alleviate fever and pain. Decongestants may also be used. Antibiotics are ineffective against HMPV, as it is a viral infection.

## **DRAFT RULES FOR THE DIGITAL PERSONAL DATA PROTECTION ACT (DPDP)**

The draft rules aim to provide clarity on several important topics. They cover the obligations of data fiduciaries, the role of consent managers, and the handling of children's personal data.

Additionally, they outline the establishment of the Data Protection Board, which will oversee compliance and address breaches.

The draft rules specify that a Data Fiduciary must obtain verifiable consent from a child's parent or legal guardian before processing their personal data.

This requirement ensures that consent is identifiable and legitimately obtained. Processing of children's data is allowed for particular activities, including health services and educational purposes, provided these activities are essential for the child's well-being.

### **Role and Registration of Consent Managers**

Consent Managers play important role in the data protection framework. They must be incorporated in India and possess a minimum net worth of Rs 2 crore.

These entities are required to maintain operational independence and avoid conflicts of interest. They must also provide a certified platform for Data Principals to manage their consent effectively.

### **State's Processing of Personal Data**

The draft rules permit the State and its instrumentalities to process personal data for issuing subsidies, benefits, and services. This processing must comply with specific standards to ensure lawful and secure handling of data.

The guidelines aim to protect Data Principals while allowing the State to fulfil its obligations.

### **Establishment of the Data Protection Board**

A feature of the draft rules is the proposed Data Protection Board. This regulatory body will manage complaints, investigate breaches, and enforce penalties.

It will operate digitally, allowing for remote hearings, thereby increasing accessibility and efficiency in handling data protection issues.

## PROJECT VISTAAR

IIT Madras has partnered with the Ministry of Agriculture and Farmer Welfare to launch Project VISTAAR. This initiative aims to enhance the agricultural extension system through digitalisation.

The pilot project, known as the Virtually Integrated System to Access Agricultural Resources, focuses on strengthening agricultural extension services.

Start-ups play important role in this context by leveraging technology to offer innovative solutions to farmers.

Project VISTAAR aims to improve the efficiency and effectiveness of agricultural extension services. It seeks to provide farmers with access to relevant information and resources.

The project will enable better communication between farmers and agricultural experts. By utilising digital tools, it aims to enhance the overall productivity of the agriculture sector.

The collaboration between IIT Madras and various start-ups encourages an environment for growth and innovation. Start-ups can improve access to market information and resources for farmers, thus enhancing their productivity.

The Centre for Research on Start-ups and Risk Financing at IIT Madras has compiled data on over 12,000 start-ups in the agriculture sector. This collaboration will facilitate easy access to this information for farmers and stakeholders.

Farmers will receive high-quality, timely, and contextual information. This includes guidance on crop production, marketing, and supply chain management. Additionally, farmers will be informed about government schemes that can benefit them.

By connecting farmers with innovative solutions, it enhances the agricultural landscape. The initiative has the potential to transform how farmers access information and resources, leading to improved agricultural practices.

## 'GLOBAL CYBERSECURITY OUTLOOK 2025' REPORT

Report highlights the growing complexity of the cyber landscape and its wide-ranging implications for organizations and nations. The report also highlighted that cybercrime disrupted global economies, costing \$12.5 billion in 2023.

What factors are increasing the complexities of cybersecurity?



**Supply Chain Vulnerabilities:** Increasing complexity of supply chains and limited oversight create risks, with third-party software flaws enabling cyberattack propagation throughout the ecosystem.

**Geopolitical Tensions:** Conflicts drive advanced cyber strategies, threatening critical infrastructure like energy and telecommunications.

**AI-Driven Threats:** Generative AI enables cost-effective, scalable malware deployment and sophisticated multilingual social engineering (manipulating people to gain control over a computer system) attacks.

**Cyber Skills Gap:** A growing 8% skills gap leaves two-thirds of organizations unable to address security needs effectively.

**Convergence of Cybercrime and Organized Crime:** Rising cyber-enabled fraud has drawn violent organized crime groups into the cyber domain, amplifying the scale and social impact of cybercrime.

**Climate-Linked Cyber Risks:** Energy grids face heightened risks due to reliance on evolving energy systems.

**Quantum Vulnerabilities:** Quantum computing pose the ability to break public-key encryption critical for securing digital systems.

The report underscores Overcoming cyber challenges demands a shift in perspective, recognizing cyber resilience as a collective responsibility. Leaders must treat cybersecurity as a strategic investment to counter emerging threats.

## THIRUVALLUVAR DAY

He was a great Tamil philosopher, poet and thinker, thought to have lived in Mylapore, Chennai.

Known for his Tamil literary work 'Tirukkural', a collection of couplets



**on matters like ethics, politics, economics and love.**

Tirukkural has been classified under three major headings: aram (righteousness), porul (wealth), imbam (enjoyment).

Thiruvalluvar Statue was created by Indian sculptor V. Ganapathi Sthapathi in Kanyakumari, Tamil Nadu.

India's first Thiruvalluvar Cultural Centre will soon be inaugurated in Singapore.

Values: Righteousness, Compassion, and Justice.

## RAT-HOLE MINING

Rat-hole mining refers to an unscientific and hazardous coal extraction method involving small tunnels barely allowing workers to crawl in and out. It is of two types:

**Side-Cutting Mining:**

Conducted on hill slopes by following visible coal seams (dark brown or black-banded coal within rock layers).



**Box-Cutting Mining:**

Involves digging a circular or square pit (approximately 5 sq. meters wide) to a depth of up to 400 feet.

Miners descend using makeshift cranes or rope-and-bamboo ladders.

Once coal seams are located, horizontal tunnels are dug in all directions from the pit's edge, resembling octopus tentacles.

### Why is such mining banned?

The government has little control over the land in Meghalaya, a Sixth Schedule State where the Coal Mines Nationalisation Act of 1973 does not apply. The landowners are thus also the owners of the minerals beneath.

Coal mining boomed after Meghalaya attained statehood in 1972. However, the terrain and expenses involved discouraged mine owners from employing advanced drilling machines. So, labourers mainly from Assam, Nepal, and adjoining Bangladesh were employed.

Apart from issues of safety and health, unregulated mining led to land degradation, deforestation, and water with high concentrations of sulphates, iron, and toxic heavy metals, low dissolved oxygen, and high biochemical oxygen demand.

At least two rivers, Lukha and Myntdu, became too acidic to sustain aquatic life.

Environmentalists and human rights activists began flagging the hazards of rat-hole mining in Meghalaya two decades ago.

The campaign intensified after Impulse, a Meghalaya-based NGO, began addressing the issue of human trafficking and child labour in such mines.



The State's Department of Mining and Geology refuted the claim but, under pressure from the National Human Rights Commission, admitted in 2013 that 222 children were employed in rat-hole mines, specifically in the East Jaintia Hills district. NGT banned rat-hole mining in Meghalaya in 2014.

The State has an estimated reserve of 576.48 million tonnes of low-ash, high-sulphur coal belonging to the Eocene age (33-56 million years ago). The stakes for a section of locals have been so high that the State government has been under pressure to facilitate the resumption of mining legally.

## HYDROCLIMATE WHIPLASH



Hydroclimate whiplash refers to rapid and extreme transitions between very wet and very dry conditions in a region. This phenomenon is becoming more frequent and severe due to climate change, leading to significant environmental and societal impacts.

**Causes of Hydroclimate Whiplash:**

A primary driver is the increasing capacity of a warmer atmosphere to hold moisture.

For every degree Celsius of warming, the atmosphere can hold about 7% more water vapor.

This “expanding atmospheric sponge” effect results in: **Intensified Precipitation:** When the saturated atmosphere releases moisture, it leads to heavier and more intense rainfall events.

**Enhanced Evaporation:** A warmer atmosphere also increases evaporative demand, drawing more moisture from soils and vegetation, which exacerbates drought conditions during dry periods..

These dynamics contribute to more pronounced swings between wet and dry periods, characteristic of hydroclimate whiplash.

## Impacts of Hydroclimate Whiplash:

**Wildfires:** Periods of heavy rainfall promote vegetation growth, which, during subsequent droughts, becomes dry fuel, increasing wildfire risk. This sequence has been observed in regions like California, where wet winters followed by dry summers have led to severe wildfires.



**Flooding and Landslides:** Intense rainfall can lead to flash floods and landslides, especially when occurring after prolonged dry spells that compromise soil stability.

**Agricultural Disruption:** Crops may suffer from alternating flooding and drought conditions, affecting food production and security.

**Water Resource Management Challenges:** The unpredictability of water availability complicates the management of reservoirs and water supplies, impacting both human consumption and ecological needs.

## DIEGO GARCIA

**Diego Garcia is a coral atoll located in the central Indian Ocean, forming the largest and southernmost part of the Chagos Archipelago. It is part of the British Indian Ocean Territory (BIOT) and serves as a strategic military base jointly operated by the United Kingdom and the United States.**

**Location:** Approximately 3,535 km east of Tanzania, 2,984 km east-southeast of Somalia, and 726 km south of the Maldives.

**Diego Garcia's location along major international trade routes between Asia and Africa enhances its strategic importance.**

**The joint UK-US military base supports various operations and serves as a logistical hub for forces operating in the Indo-Pacific region.**

**The sovereignty of Diego Garcia has been a subject of international dispute. Mauritius claims the Chagos Archipelago, including Diego Garcia, as its territory.**

**In October 2024, the UK announced plans to transfer sovereignty of the Chagos Islands to Mauritius, while retaining a long-term lease for the military base on Diego Garcia.**

## **'MISSION MAUSAM'**

**The mission aims to upgrade the capabilities of India's weather department in forecasting, modelling, and dissemination.**

The primary objectives of Mission Mausam are:

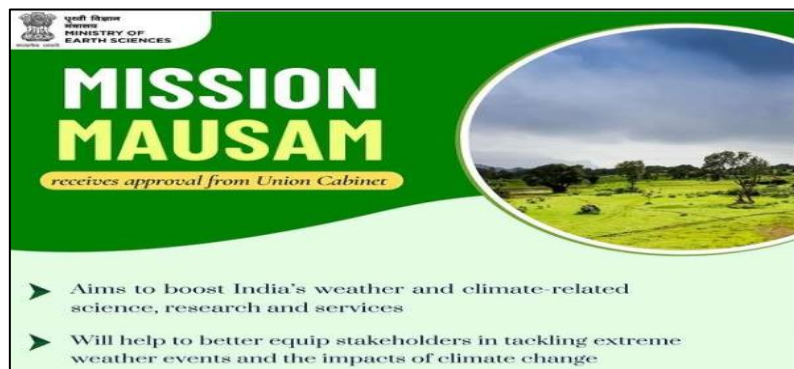
**To enhance India's capability in weather forecasting across various scales – short-term, medium-term, extended-range, and seasonal.**

**To develop high-resolution models for improved accuracy in predicting monsoon behaviour.**

**To strengthen observational networks with advanced radars, satellites, and automated weather stations.**

**To provide actionable advisories for agriculture, water resources, energy, health, and disaster management sectors.**

**To build capacity through research collaborations with national and international institutions.**



**Mission Mausam will have a budget of Rs 2,000 crore for the first two years of its implementation.**

**Mission Mausam adopts a multi-pronged approach to achieve its objectives:**

**Infrastructure Development:** Installation of Doppler Weather Radars (DWRs), Automatic Weather Stations (AWS), and rain gauges across the country.

**Supercomputing Power:** Leveraging high-performance computing systems like Pratyush and Mihir for advanced climate modelling.

**Collaborative Research:** Partnerships with global organizations like the World Meteorological Organization (WMO) to enhance forecasting techniques.

**Public Outreach:** Dissemination of user-friendly advisories through mobile apps (e.g., Mausam app), SMS services, and media channels.

The mission will also ‘manage’ certain weather events, and on- demand, enhance or suppress rainfall, hail, fog and, later, lightning strikes.

For effective weather modification, one of the most important areas is cloud physics. Towards this end, India is establishing a first-of-its-kind cloud chamber at the Indian Institute of Tropical Meteorology (IITM), Pune.

A cloud chamber resembles a closed cylindrical or tubular drum, inside which water vapour, aerosols, etc. are injected. Under the desired humidity and temperature inside this chamber, a cloud can develop.

With Mission Mausam, India will build a cloud chamber with convection properties, as required to study Indian monsoon clouds.

### **BHARAT RANBHOO MI DARSHAN**

**This initiative is a joint effort between the Ministry of Defence and the Ministry of Tourism to highlight India’s rich military heritage and honor the sacrifices made by the armed forces**

#### **Key Aspects of Bharat Ranbhoomi Darshan:**

**Historical Battlefield Sites:** The initiative includes iconic war zones like Siachen (the world’s highest battlefield), Galwan (site of the 2020 India-China clash), and Longewala (highlighted in the 1971 India-Pakistan war), Kibithoo and Bum La Pass (locations in Arunachal Pradesh from the 1962 war with China) among others.

**Digital Tools:** A dedicated app and website provide detailed insights into the historical significance of these sites, including virtual tours, historical narratives, and multimedia content. For those planning visits, the platform offers comprehensive travel information.

**Economic and Educational Benefits:** By opening these regions to tourism, the initiative aims to boost local economies, provide educational opportunities, and inspire patriotism among visitors. The program aligns with the broader “Incredible India” campaign, merging tourism with educational experiences.

Most of these sites fall along India’s borders with China (Line of Actual Control) and Pakistan (Line of Control) that have had a history of wars after independence and other clashes in recent times.

**What is the Line of Actual Control?**

The LAC is the demarcation that separates Indian-controlled territory from Chinese-controlled territory. India considers the LAC to be 3,488 km long, while the Chinese consider it to be only around 2,000 km. It is divided into three sectors: the eastern sector which spans Arunachal Pradesh and Sikkim, the middle sector in Uttarakhand and Himachal Pradesh, and the western sector in Ladakh.



How is the LAC different from the Line of Control with Pakistan?

The LoC emerged from the 1948 ceasefire line negotiated by the UN after the Kashmir War. It was designated as the LoC in 1972, following the Shimla Agreement between the two countries.

It is delineated on a map signed by DGMOs of both armies and has the international sanctity of a legal agreement. The LAC, in contrast, is only a concept – it is not agreed upon by the two countries, neither delineated on a map or demarcated on the ground.

### KASHI TAMIL SANGAMAM

Kashi Tamil Sangamam is an annual month-long programme organized by the Ministry of Education, Government of India to celebrate, reaffirm and rediscover the age-old links between Tamil Nadu and Varanasi. The event underscores the connections between these two ancient centers of learning and spirituality.

The most recent third edition of the Kashi Tamil Sangamam is scheduled from February 15 to 24, 2025.

The main theme in this year's event is highlighting the significant contributions of Sage Agasthyar to the Siddha System of Medicine (Bharatiya Chikitsa), Classical Tamil Literature, and also his contributions in the cultural unity of the Nation.

In this edition, around 1000 people under 5 categories (Students, Teachers Farmers & Artisans, Professionals and small Entrepreneurs, women, and Researchers) will participate.

An online registration portal has been launched, and the selection of participants will be done through a quiz. Seminars and cultural programmes will be held during the programme. Participants will visit Varanasi, Prayagraj, and Ayodhya, and with the event coinciding with the Maha Kumbh, they will also visit the Kumbh.

#### Objectives:

**Strengthen Cultural Bonds:** Deepen the understanding and appreciation of each other's cultural practices and heritage.

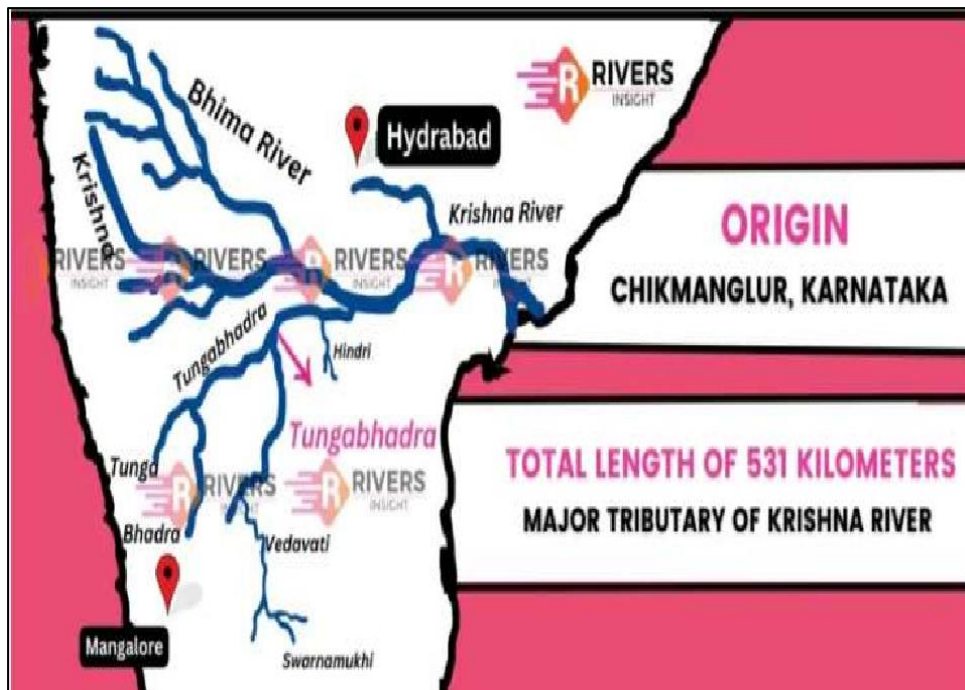
**Promote Knowledge Exchange:** Facilitate the exchange of traditional knowledge systems and contemporary innovations.

**Encourage Tourism and Education:** Boost tourism between the regions and promote educational interactions across universities

### TUNGABHADRA RIVER

The Tungabhadra water has turned green around Shiranahalli, Gangapur and Korlahalli villages in Mundargi taluk of Gadag district creating panic among the residents.

According to the residents, the river flowing in the region usually dries up during summer and the water left in puddles turns green. However, this year, flowing river water turning green has caused anxiety among them.



The Tungabhadra River is a prominent river in southern India. It is a key tributary of the Krishna River and plays a vital role in the irrigation, hydroelectricity, and water supply of the region.

#### Geographical Features:

**Source:** Originates in the Western Ghats at the confluence of the Tunga and Bhadra rivers near Kudremukh in Karnataka.

**Course:** Flows for approximately 531 km through Karnataka, Andhra Pradesh, and Telangana before merging with the Krishna River at Sangameswaram in Andhra Pradesh.

**Basin Area:** Covers about 71,417 square kilometers across Karnataka, Andhra Pradesh, and a small part of Telangana.

#### Irrigation:

The river supports extensive agricultural activities in the Deccan Plateau.

The Tungabhadra Dam near Hospet in Karnataka provides irrigation to over 1.25 million hectares of land.

**Hydroelectric Power:** The dam generates hydroelectric power, contributing to the energy requirements of Karnataka and Andhra Pradesh.

**Historical Importance:** The river was central to the prosperity of the Vijayanagara Empire, with Hampi located on its banks.

## INDIA PHASES OUT HCFCs

In 2024, India successfully phased out hydrochlorofluorocarbons (HCFCs) in manufacturing, aligning with its commitments under the Montreal Protocol.

This initiative is crucial for protecting the ozone layer and addressing climate change. The Montreal Protocol, established in 1987, has been very important in reducing ozone-depleting substances globally. India's actions mark step towards sustainable environmental practices.

### Montreal Protocol Overview

The Montreal Protocol is an international treaty aimed at phasing out ozone-depleting substances. Established in 1987, it came into force in 1989.

It is regarded as one of the most successful environmental agreements, with 98% of ozone-depleting substances eliminated since 1990.

The protocol's success is projected to restore the ozone layer by mid-century.

HCFCs are chemical compounds used mainly in refrigeration and air conditioning.

Introduced as temporary substitutes for CFCs, they still pose a threat to the ozone layer.

The 1992 Copenhagen Amendment accelerated HCFC phase-out efforts, culminating in India's recent ban on HCFCs in manufacturing.

India joined the Vienna Convention in 1991 and the Montreal Protocol in 1992. It developed a phased plan to eliminate ozone-depleting substances, achieving reductions by 2010. The recent phase-out of HCFCs is part of a larger strategy to address climate change and protect the ozone layer.

### Hydrofluorocarbons (HFCs)

HFCs are greenhouse gases used as alternatives to CFCs and HCFCs.

They do not deplete the ozone layer but contribute to global warming.

The Kigali Amendment, adopted in 2016, aims to reduce HFC use by 85% by 2036 for developed countries and by 2047 for developing countries.

Discussions at the 2024 COP brought into light the need for sustainable cooling solutions. Innovations such as solar cooling and evaporative cooling are being explored. The focus is on reducing energy consumption and managing refrigerant leakage effectively.

### Global Negotiation Context :

Countries are negotiating the future of cooling technology, aiming to establish standards for refrigerant management. The conversation is shifting towards sustainable alternatives, including natural refrigerants, to combat environmental challenges effectively.

India aims for a complete HCFC phase-out by 2030, with plans to limit HFC use in subsequent years. The country has set specific reduction targets for HFCs, demonstrating its commitment to sustainable environmental practices and compliance with international agreements.

## SNOW LEOPARD

**Recent studies reveal that the Sanjiangyuan area in China's Qinghai province is a critical habitat for snow leopards, hosting approximately 1,000 individuals.**

This region is vital for the conservation of this endangered species, as it comprises portion of their global population. The findings tell the importance of understanding snow leopard dynamics for effective conservation strategies.

The snow leopard primarily inhabits the mountains of Central and South Asia.

It thrives at elevations ranging from 1,800 to 5,500 metres. The species is adapted to alpine, subalpine, and semi-arid ecosystems. Sanjiangyuan is crucial as it holds the headwaters of major rivers in Asia.



### Population Estimates

Recent estimates suggest that Sanjiangyuan contains 1,000 snow leopards, representing 11-21% of the global population. Two conservative estimates suggest populations of 971 and 978 snow leopards in defined regions.

Snow leopards primarily prey on bharal (blue sheep), which constitutes over 80% of their diet. The high bharal density in Sanjiangyuan contributes to the snow leopard population in the region.

### Conservation Status

The International Union for Conservation of Nature (IUCN) classifies snow leopards as 'Vulnerable'. Their status was downgraded from 'Endangered' in 2017, but this decision faced criticism due to potential biases in population estimates.

## KOKBOROK

**Recently, the Twipra Student Federation (TSF) protested in Agartala, Tripura, demanding the adoption of the Roman script for the Kokborok language. This movement marks the ongoing struggle for linguistic recognition and cultural justice among the Borok people.**



Background of Kokborok :

Kokborok is a Sino-Tibetan language. It is spoken by the Borok people of Tripura.

Officially recognised in 1979, it has historical roots dating back to the 1<sup>st</sup> century AD.

The name Kokborok combines “Kok” (verbal) and “Borok” (people).

According to the 2011 Census, approximately 880,537 people speak Kokborok, accounting for nearly 24% of Tripura’s population

There is a demand for Kokborok to be recognised as one of India’s official languages under the Eighth Schedule of the Constitution. Despite its official status, Kokborok faces challenges in terms of recognition and resources.

The community continues to advocate for linguistic rights and educational support for the language.d promote its use in government and education.

### **VARIABLE REPO RATE**

In move to manage liquidity, the Reserve Bank of India (RBI) has announced daily variable rate repo (VRR) auctions. This decision comes amid a liquidity deficit exceeding ₹2 trillion in the banking system.

The auctions aim to alleviate the tight liquidity conditions, particularly with upcoming goods.The RBI will conduct VRR auctions every working day in Mumbai.

The initial amount for these auctions is set at approximately ₹50,000 crore. Reversals will occur the next working day, except for Fridays, when it will be on the following Monday and services tax (GST) outflows.

The variable repo rate is a lending rate set by the RBI that adjusts based on economic conditions.

It directly influences the interest rates banks charge on loans.

A higher repo rate increases borrowing costs, while a lower rate reduces them.

### **BENEFITS OF VARIABLE REPO RATE**

The variable repo rate provides transparency for borrowers, aligning loan costs Withmarket conditions.

It helps control inflation and promotes economic stability, allowing for potential savings when rates decrease.

Home loan borrowers linked to the variable repo rate will see fluctuations in their EMIs based on rate changes. A drop in the repo rate leads to lower payments, while an increase raises costs, affecting financial planning.

Typically lasting up to 14 days, VRR serves as a means to inject short-term liquidity into the banking system.

Conversely, Variable Rate Reverse Repo (VRRR) is employed to absorb surplus liquidity from the system.

It generally is borrowed at a rate decided by market generally lower than Repo Rate.

#### World Employment and Social Outlook Report 2025

The International Labour Organisation (ILO) has released its World Employment and Social Outlook Report for 2025, denoting the ongoing struggles in global labour markets.

The report reveals that geopolitical tensions, climate change costs, and unresolved debt issues continue to hinder economic recovery. Despite a slight decrease in the global jobs gap, challenges remain, particularly for low-income countries and vulnerable populations.

The global jobs gap reached 402 million in 2024. This includes 186 million unemployed, 137 million temporarily unavailable, and 79 million discouraged workers. The gap has narrowed since the pandemic but is expected to stabilise in the coming years.

The global unemployment rate remained steady at 5% in 2024. Youth unemployment is particularly concerning, standing at 12.6%. Many low-income countries struggle to create decent jobs, with informal work returning to pre-pandemic levels.

### LABOUR FORCE PARTICIPATION

Labour force participation rates have declined in low-income nations while rising in high-income countries, especially among older workers and women. However, gender gaps persist, limiting economic progress.

Job growth potential exists in green energy and digital technologies. Renewable energy jobs have reached 16.2 million globally, but distribution is uneven.

Many countries lack the infrastructure to fully utilise digital advancements.

Global economic growth slowed to 3.2% in 2024, down from previous years. A similar growth rate is anticipated for 2025, but a gradual deceleration is expected over the medium term.



## REAL WAGES AND INFLATION

Although inflation has decreased, it remains high, impacting wage values. Real wage increases have been limited to some advanced economies, with many countries still recovering from pandemic effects.

### Recommendations for Action

The ILO calls for increased productivity through skills training, expanded social protection, and effective use of private funds. Low-income countries are encouraged to harness remittances for local development.

### Biochar

Recent research from Chalmers University of Technology in Sweden has revealed a promising method for remediating DDT-contaminated soils.

This study marks the ongoing environmental impact of DDT, a pesticide banned for over 50 years, and presents biochar as a viable solution to restore soil health and agriculture. **Overview.**

DDT (dichloro-diphenyl-trichloroethane) was introduced as an insecticide in 1939.

It effectively controls pests but degrades soil quality over time.

Despite its ban in many countries, DDT contamination persists in numerous sites worldwide.

## BIOCHAR APPLICATION

Biochar, a charcoal-like substance, was mixed with contaminated soil. This process effectively reduced DDT uptake by earthworms by 50%. Biochar binds contaminants and enhances soil health, making it a sustainable option for remediation.

### Experimental Methodology

Researchers divided the contaminated soil into piles, treating half with biochar. They established 24 experimental plots, planting pumpkin, grasses, legumes, and willows. Various indicators were used to assess soil health and plant performance.

Using biochar on-site is cost-effective and environmentally friendly. It avoids the need to transport contaminated soil to landfills, preserving good-quality soil. This method could rehabilitate large areas of contaminated land.

It is produced by heating wood and other biomass in a low-oxygen chamber that limits emissions, in a process known as pyrolysis. The bio-oils and gas produced can be used for power generation.

The resulting char can be mixed with existing soil, acting as a fertilizer and sequestering carbon with a mean residence time of about 2,000 years.

Biochar production and burial remove carbon dioxide directly from the atmosphere through uptake by plants, allowing, in principle, an actual reduction of atmospheric carbon dioxide levels.

#### Potential Crop Cultivation

Post-remediation, the treated land could support various crops. Potential plants include pine and spruce saplings, hay for livestock, and bioenergy crops like willow trees. This could revitalise previously unusable land.

### REGULATORY CHALLENGES

Landowners face strict regulations regarding DDT contamination. Even without health risks associated with crops, the obligation to manage ecological risks has left much land uncultivated. This research presents a pathway to address these challenges.

The findings from this study could influence global practices in soil remediation. By integrating biochar into contaminated sites, agricultural productivity may be restored while mitigating environmental risks associated with historical pesticide use.

### NEW TARANTULA SPECIES DISCOVERED

Recent research has revealed four new tarantula species, including a new genus, from India's Western Ghats. This region, rich in biodiversity, is home to over 60 tarantula species, yet many people remain unaware of their existence.

The discoveries highlight the ecological significance of these spiders and the urgent need for conservation measures.





Habitat and Behaviors :

**Tarantulas live in tree hollows, along streams, forest paths, and shola forest patches surrounded by tea plantations.**

**Females exhibit unique behaviors like carrying egg sacs under their mouthparts and creating hammock-like web structures to protect their eggs.**

**Examples of newly discovered species:**

**Haploclostus bratocolonus ("tree dweller"):** Found in hollow trees along rivers.

**Haploclostus montanus:** Lives at elevations above 2,000 meters, making it one of the highest-living tarantulas in the region.

About Cilantica

**It is named after the Tamil word for spider**

**Cilantica is identified by its unique pattern of curved bristles, differing from other tarantulas.**

**Ecological Importance:**

**Tarantulas play a key role as biological pest controllers, preying on smaller invertebrates and vertebrates.**

**They are keystone species and indicators of undisturbed habitats.**

**They also form part of the diet for spider wasps and small carnivores.**

**Tarantulas could serve as flagship species for invertebrate conservation in the Western Ghats.**

Conservation challenges include habitat destruction, deforestation, agriculture, and climate change.

**Experts suggest several solutions:**

**Train customs and airport security to detect smuggled tarantulas, possibly using sniffer dogs.**

**Encourage reporting of illegal collection by local communities.**

**Promote responsible pet ownership, ensuring tarantulas are captive-bred and not sourced illegally.**

On 16th January 2016, Prime Minister Narendra Modi launched the Start Up India Action Plan, with an aim to build a strong eco-system for nurturing innovation and Startups in the country as a flagship initiative of Department for Promotion of Industry and Internal Trade (DPIIT).

The govt's focus has been on three C's – capital, courage and connections – which Prime Minister Modi describes as the main pre-requisites for setting up a business.

The participation of women has also increased under the Startup India programme.

[illegible]

**The Government through this initiative aims to empower Startups to grow through innovation and design.**

**The event was inaugurated on 16 January 2016.**

### Core Features:

**Ease of Doing Business:** Simplified compliance, self-certification, and single-window clearances.

**Tax Benefits:** Tax exemptions for 3 consecutive financial years.

**Funding Support:** ₹10,000 crore Fund of Funds for Startups (FFS) supports early-stage funding.

**Sector-Specific Policies:** Like biotechnology, agriculture, and renewable energy.

**Indrajaal**

**The drone defence dome has the capability to autonomously protect an area of 1000-2000 sq km against the aerial threats by assessing and acting on aerial threats such as Unmanned Aerial Vehicles (UAVs), loitering munitions, and Low-Radar Cross Section (RCS) targets.**



The ANTI-UAV systems will not only provide protection to defence bases but it will be beneficial for linear infrastructures like international borders against advanced weaponry. The path-breaking development is imperative because manual weapons and point-based defence systems can't defend modern warfares, which are operated by Artificial Intelligence (AI) and robotics.

The design principles of Indrajaal are based on delivering autonomy to the armed forces. The synergic combination of 9-10 modern technologies helmed by Artificial Intelligence (AI), cybersecurity and robotics.

Capable of real-time situational awareness, Indrajaal comprises all current weapons suite and infrastructure along with a honeycombed cell structure to provide a seamlessly built over a combination of 9-10 technologies for 24×7 persistent monitoring, tracking and action.

Salient features of Indrajaal

- Real-time situational awareness
- Integrated and Intelligent meshed network
- Integrated all current weapons suite and infrastructure
- Honeycombed cell structure for seamlessly built
- Synergic combination of 9-10 technologies
- 24×7 persistent and autonomous monitoring, action and tracking

## NATIONAL YOUTH DAY

Swami Vivekananda's teachings emphasized the potential of youth in nation building. His philosophy and ideals continue to inspire young individuals to contribute positively to society.

In 1984, the Government of India declared Swami Vivekananda's birth anniversary as National Youth Day to honor his contributions to Indian society.

The first official celebration took place on January 12, 1985, and has continued annually since.

The youth, defined as those within the age group of 15-29 years, make up nearly 40% of India's total population.

National Youth Day serves as a moment to acknowledge, celebrate, and harness Youth's potential, inspiring young minds to contribute meaningfully to the nation's development.

### Viksit Bharat Young Leaders Dialogue

The National Youth Day 2025 has introduced the Viksit Bharat Young Leaders Dialogue.

The Viksit Bharat Young Leaders Dialogue aims to break the 25-year-old tradition of holding the National Youth Festival in a conventional manner.

This reimagined festival focuses on identifying and nurturing young talent and providing a platform for innovative ideas and perspectives.

It features a merit-based competition called the Viksit Bharat Challenge, which involves quizzes, essay writing, and vision presentations, with finalists presenting their ideas.

## SWAMI VIVEKANANDA

Swami Vivekananda, originally named Narendranath Datta, was born into a well-educated Bengali family. He was a brilliant student and a deep thinker from a young age.





His spiritual quest led him to Sri Ramakrishna Paramahansa , who became his guru and transformed his life.

In 1893, Swami Vivekananda represented India at the World Parliament of Religions in Chicago , delivering his famous speech on universal tolerance and brotherhood.

He later founded the Ramakrishna Mission , focusing on education health care, and social reform.

Key Influence : Chief disciple of Sri Ramakrishna Major Contributions :

Introduced Vedanta and Yoga to the Western world.

Founded the Ramakrishna Mission and Ramakrishna Math

Promoted interfaith awareness and social reform.

Philosophy : Emphasized self perfection, service to humanity, and the unity of all religions.

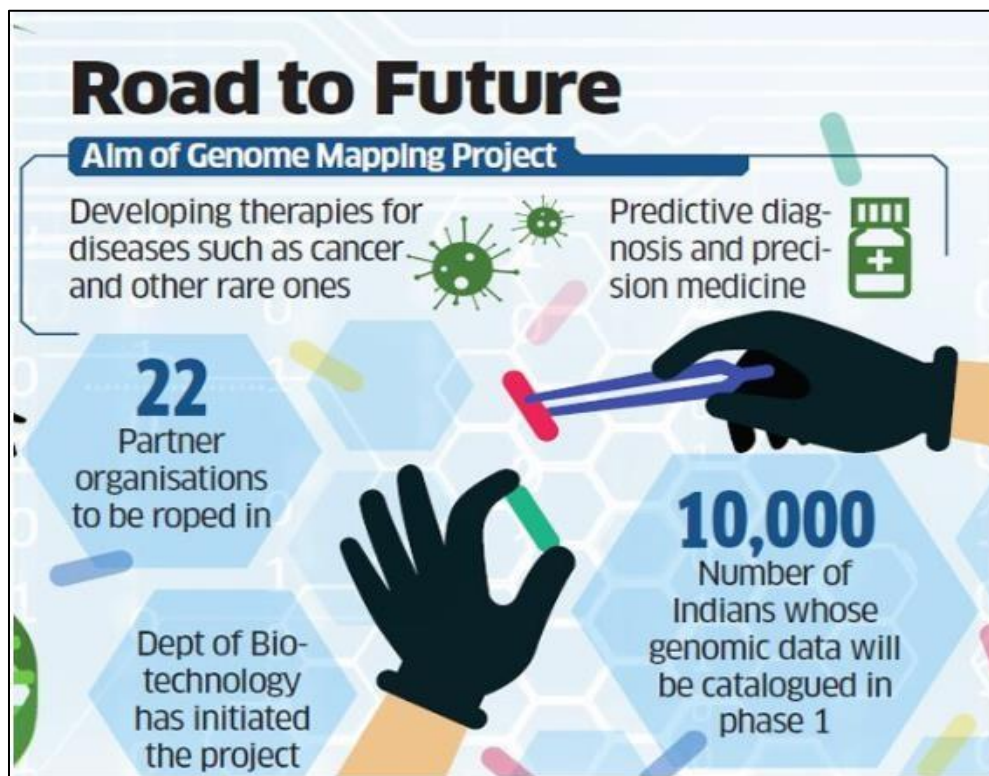
Famous Quotes : **Arise , awake, and stop not until the goal is achieved.**

## GENOME INDIA PROJECT

After completing India s baseline map by sequencing 10,000 genomes, the Genome India project is set to move into its second phase during which samples of individuals with specific diseases would also be sequenced.

Background:

Launched in 2020, 10,000 sequences from healthy individuals were collected in the first phase of the project.



### Key takeaways

Genome India is a visionary national project funded by the Department of Biotechnology, Government of India. It is aimed at decoding the genetic blueprint of the diverse Indian population.

More than 20 prominent research institutions across India are involved, including the Indian Institute of Science ( IISc ), CSIR

Center for Cellular and Molecular Biology, and the National Institute of Mental Health and Neurosciences.

### Goals and impact of genome India

Develop a reference set of genetic variations for Indians by carrying out whole genome sequencing of 10000 samples from 99 communities

Develop a biobank of 20000 blood samples for future genome analysis

Make available genomic data for public access (digital public goods) for research purposes through IBDC (Indian Biological Data Center)

Design genome wide and disease specific genetic chips for low cost diagnostics and research.

First big step towards developing genome based precision medicine in India.

An inspiration for India s young minds and young researchers to explore the exciting area of genomics research and innovation for the health of Indian population.

### 2nd Phase of Genome India :

The second phase seeks to expand the database to one million sequences, including genetic information of people with specific diseases

A comparison of the healthy and diseased genome can help researchers identify targets for developing treatments and diagnostic tests . It is a step towards personalised treatment and medicine.

The diseases that would most likely be included in the list would be different types of cancers, chronic conditions such as diabetes, and various neurological or neurodegenerative diseases.

Rare diseases that are found in Indian populations are also likely to be included in the list of diseases to be studied for the next phase of Genome India project.

## SEX RATIO IN HARYANA

After peaking at 923 in 2019, the sex ratio at birth in Haryana dropped to 910 in 2024 , an eight year low. The numbers have worried activists and civil society organisations

Background:

The sex ratio is the measure of the number of females per 1,000 males in a given population

According to the National Health and Family Survey 5 (NFHS 5), which was published in 2021, the overall sex ratio at birth in India was 929.

Key takeaways

Of the 516,402 children born in Haryana in 2024, 270,354 (52.35%) were boys, while 246,048 (47.64%) were girls, giving a sex ratio of 910 girls per 1,000 boys born

In 2014, the sex ratio in Haryana was just 871. This triggered a massive nationwide outcry . In 2015, Prime Minister launched Beti Bachao , Beti Padhao campaign at Panipat

The efforts bore fruit, with the sex ratio at birth in Haryana climbing steadily after 2014 . It touched 900 in 2016, and peaked at 923 in 2019. Since then, however, the sex ratio has once again seen a downward trajectory overall.

Loosening enforcement :

The gains made between 2014 and 2019 came due to the strict enforcement of the Pre Conception and Pre Natal Diagnostic Techniques Act, 1994 ( PcpNDT Act) coupled with an intense awareness Campaign.

Activists say more needs to be done to change attitudes, and in recent years, enforcement of laws aimed towards curbing female foeticide has loosened.

Wealthier families continue to access sex determination services and sex selective abortions, which have become more costly, especially in bordering areas. A significant number of FIRs under the PNDT Act in Haryana were registered after inter state raids.

A growing trend of having only one male child is emerging in Haryana, driven by factors like decreasing land holdings and financial constraints.

Rising inflation and the dowry system contribute to the preference for fewer children, highlighting the need for societal efforts to change attitudes and discourage extravagant marriages

Government's perspective :

State authorities, however, term the latest dip as a slight fluctuation, and point to the fact that the state's sex ratio has improved. The state's gender ratio improved from 871 in 2014 to 916 in 2023.

State officials said that the government has worked to ensure that the girl child is not seen as a burden, including providing a one time sum of Rs 21,000 at the birth of a baby girl, and opening bank accounts for girls through the Sukanya Samriddhi Scheme.

Officials also spoke about work that has gone into reducing dropout rates of girls and increasing secondary education enrolment all factors which are known to in the long term positively impact sex ratio, and the status of women in general.

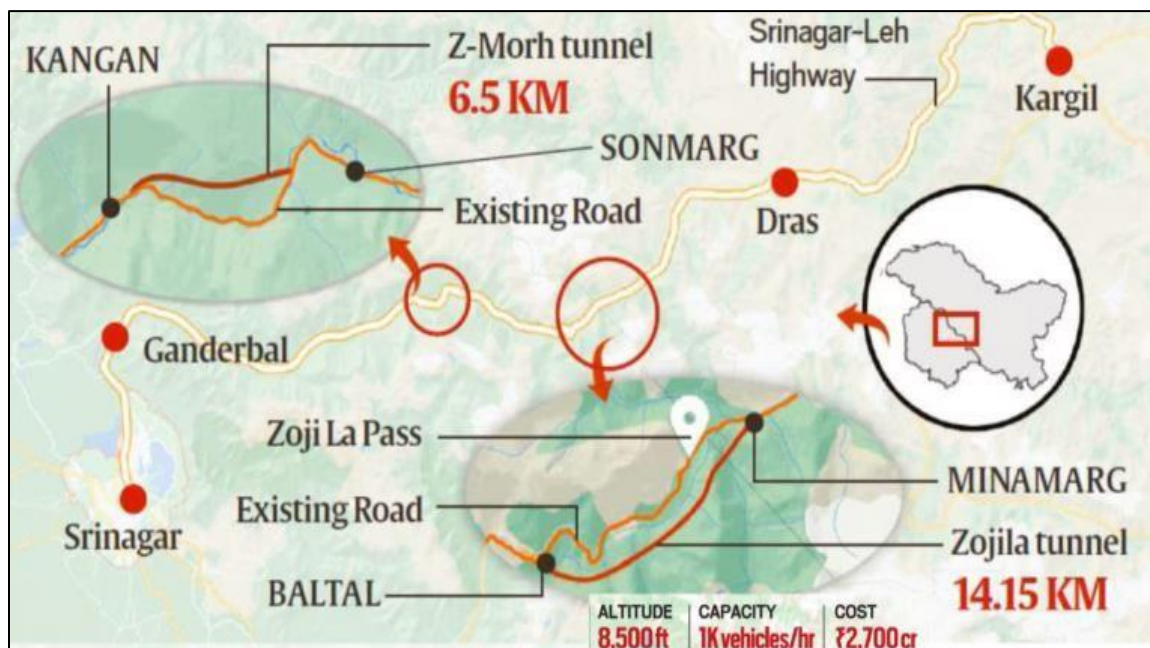
### Z MORH TUNNEL

The Z Morh will lead towards the Zojila tunnel, which is being constructed nearby. The Zojila , Asia's longest tunnel, will cut through the Himalayan range at Zojila Pass to reach the Kargil district in Ladakh

**Key takeaways**

The Z Morh Tunnel is a significant infrastructure project in Jammu and Kashmir, India, aimed at enhancing connectivity between the Kashmir Valley and the strategically important region of Ladakh

**Length:** The main tunnel is approximately 6.4 kilometers long.



**Location:** The tunnel connects Gagangir and Sonamarg in the Ganderbal district along the Srinagar Leh highway . It is situated at an altitude of around 8,652 feet (2,637 meters).

**Structure:** The project also includes an escape tunnel for emergencies and approach roads, bringing the total project length to about 12 kilometres Strategic and Economic Importance.

**All weather Access:** The tunnel provides year round connectivity to Sonamarg , a popular tourist destination, which was previously cut off during winter months due to heavy snowfall and avalanches.

strategic military logistics, ensuring uninterrupted access to Ladakh , an area of significant strategic importance for India s defense Future Prospect

The Z Morh Tunnel is a crucial part of the broader Zojila Tunnel project, which aims to establish uninterrupted connectivity between Srinagar and Ladakh .

While the Z Morh Tunnel connects Sonamarg to the rest of Kashmir year round, the Zojila Tunnel under construction at an altitude of approximately 12,000 feet will connect Sonamarg with Drass in Ladakh .

The Zojila Tunnel , which is expected to be completed by December 2026, will provide all weather access to Ladakh s strategic border regions, including Kargil and Leh.

## TASHKENT DECLARATION

Lal Bahadur Shastri , India s second Prime Minister, died in Tashkent, Uzbekistan, on January 11, 1966 after he signed the Tashkent Declaration, ending the 1965 India Pakistan War.

The 1965 war started when the Pakistan Army began to wage an undeclared war in Jammu and Kashmir in August of that year, believing India would not be able to fight back after its 1962 loss to China. On September 1, Pakistan launched an attack in the Akhnoor sector near Jammu In retaliation, the Indian Army launched an attack across the International Border in Punjab after Lal Bahadur Shastri gave a go ahead for it.

**Provisions of the Declaration**

**Restoration of Peace:** Both nations agreed to restore pre war positions by withdrawing troops to positions held before 5 August 1965

**Non Interference :** Agreed not to interfere in each other s internal affairs **Improved Relations:** Commitments were made to restore economic and diplomatic relations, including communications, trade, and cultural exchanges.

**Respect for Sovereignty:**

Pledged to work towards maintaining international peace and respecting each other's territorial integrity.

**Resolution of Disputes:**

Both sides agreed to resolve disputes through peaceful means, avoiding the use of force. **Repatriation of Prisoners of War:** Ensured the humane treatment and repatriation of all prisoners of war.

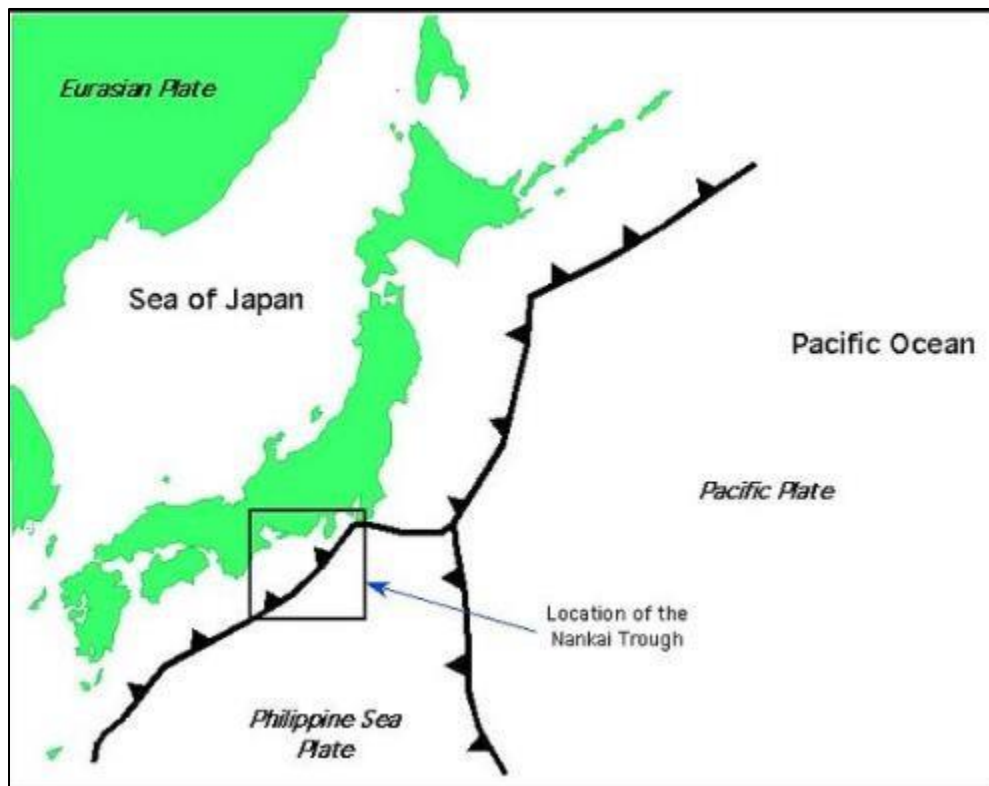


## NANKAI TROUGH

The Nankai Trough produces massive earthquakes about every 100-150 years. Strong quakes nearby are seen as a potential indication that a megaquake could be more likely.

**Key takeaways**

The Nankai Trough is an undersea subduction zone located off coast of Japan. It extends approximately 900 kilometers (559 miles), running parallel to Honshu, Japan's main island.



Nankai Trough is where the Philippine Sea Plate is slipping under the Eurasia Plate at the bottom of the sea off the southwest coast of Japan. The accumulating tectonic strains could result in earthquakes.

The Nankai Trough is known for generating megathrust earthquakes, some of the most powerful types of quakes. The most recent notable event was in 1946, with a magnitude 8.0 earthquake and subsequent tsunami.

It is part of the larger Pacific Ring of Fire.

The magnitude of an earthquake is related to the length of the fault on which it occurs, according to the United States Geological Survey.

The largest earthquake ever recorded was a magnitude 9.5 on May 22, 1960 in Chile on a fault that is almost 1,000 miles long.

## NATIONAL LIVESTOCK MISSION (NLM) :

The Department of Animal Husbandry and Dairying, under the Ministry of Fisheries, Animal Husbandry & Dairying, hosted an Entrepreneurship Development Conclave in Pune, Maharashtra, themed Empowering Entrepreneurs: Transforming Livestock Economies.

Background:

Government is implementing flagship schemes such as the Animal Husbandry Infrastructure Development Fund (AHIDF) and National Livestock Mission (NLM).

By showcasing opportunities under NLM and AHIDF, the conclave aimed to drive inclusive growth and empower rural farmers and small enterprises.

Objectives of NLM:

Employment Generation: Through entrepreneurship development in small ruminant (sheep, goats), poultry, piggery, and fodder sectors.

Increasing Productivity: Enhancement of per animal productivity through breed improvement

Production Increase: Upscaling the production of meat, eggs, goat milk, wool, and fodder

Fodder and Feed Availability: Strengthening the fodder seed supply chain and increasing the availability of certified fodder seeds

Fodder Processing Units: Encouraging the establishment of fodder processing units (e.g., hay bailing, silage making) to decrease the demand supply gap.

Risk Management: Promotion of livestock insurance and other risk management measures

Applied Research: Supporting research in prioritized areas like poultry, sheep, goat, feed, and fodder

Capacity Building: Strengthening the extension machinery to provide quality extension services to farmers and training livestock owners in skill based practices

Sub Missions under NLM

Breed Development of Livestock & Poultry:

Support entrepreneurship and breed improvement in poultry, sheep, goat, and piggery sectors.

Activities include establishing breed development farms and genetic improvement programs.

Feed and Fodder Development:

Enhance the availability of quality fodder seeds and promote entrepreneurial activities in feed production.

Focus on establishing fodder block units, hay bailing, and silage making units.

Innovation and Extension

Encourage research in livestock sectors, extension activities, livestock insurance, and innovative practices

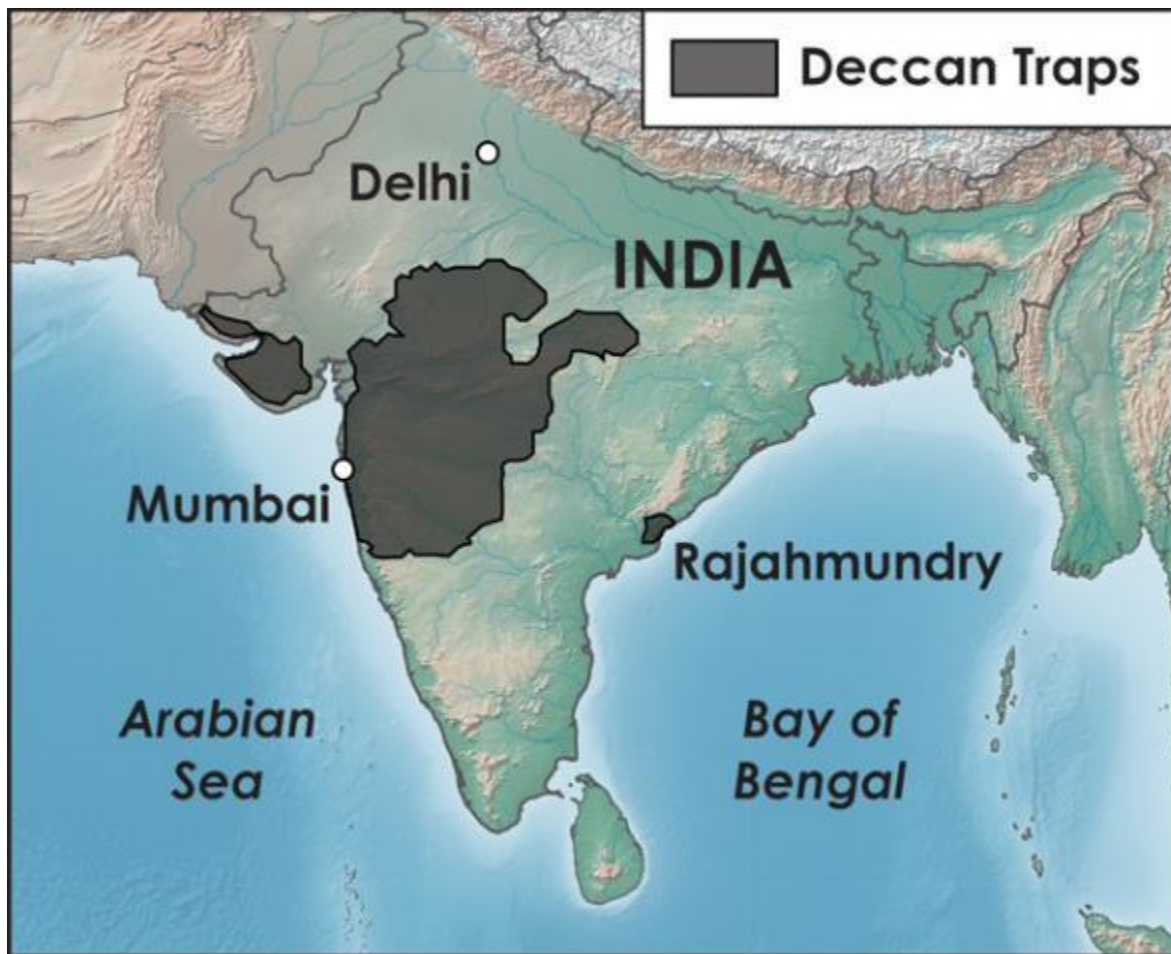
Implementation and Funding: NLM is implemented through both Central Sector (CS) and Centrally Sponsored Schemes (CSS), with financial assistance provided to individuals, Farmer Producer Organizations (FPOs), Self Help Groups (SHGs), and State Governments.

## DECCAN VOLCANISM

Deccan Volcanism, a major event of volcanic eruptions which occurred ~66 million years ago and led to mass extinctions of fauna, did not have such negative impact on tropical flora, says a new study.

Background:

The study was conducted by Birbal Sahni Institute of Palaeosciences (BSIP), an autonomous institute of Department of Science and Technology.



### Key takeaways

Deccan Volcanism, one of Earth's most significant volcanic events, occurred about 66 million years ago in what is now west central India. It created the Deccan Traps, a massive region of flood basalts covering around 500,000 square kilometers and reaching up to 2,000 meters thick in places.

### Key Features of Deccan Volcanism:

**Formation of Deccan Traps:** The Deccan Traps were formed by massive volcanic eruptions. Lava extruding through fissures created horizontal layers of basalt, forming step-like hills (hence the term Traps, derived from the Swedish word for stairs).

**Duration:** These eruptions lasted for around 600 800,000 years during the transition between the Cretaceous and Paleogene periods.

**Volcanic Source:** A mantle plume, often associated with the still active Réunion hotspot, is believed to have triggered these extensive Eruptions.

**Impact on Earth's History:**

**Cretaceous Paleogene (K-Pg) Mass Extinction:** Deccan Volcanism is one of the key events linked to the K-Pg mass extinction, which led to the extinction of non-avian dinosaurs.

The eruptions released vast amounts of greenhouse gases and sulfur aerosols that altered the global climate, causing significant warming and acid rain.

**What the new study says?**

The study by Birbal Sahni Institute of Palaeosciences (BSIP) suggests that despite highly devastating consequences for terrestrial faunas, the Deccan Volcanism only caused regional and short term impacts on the flora.

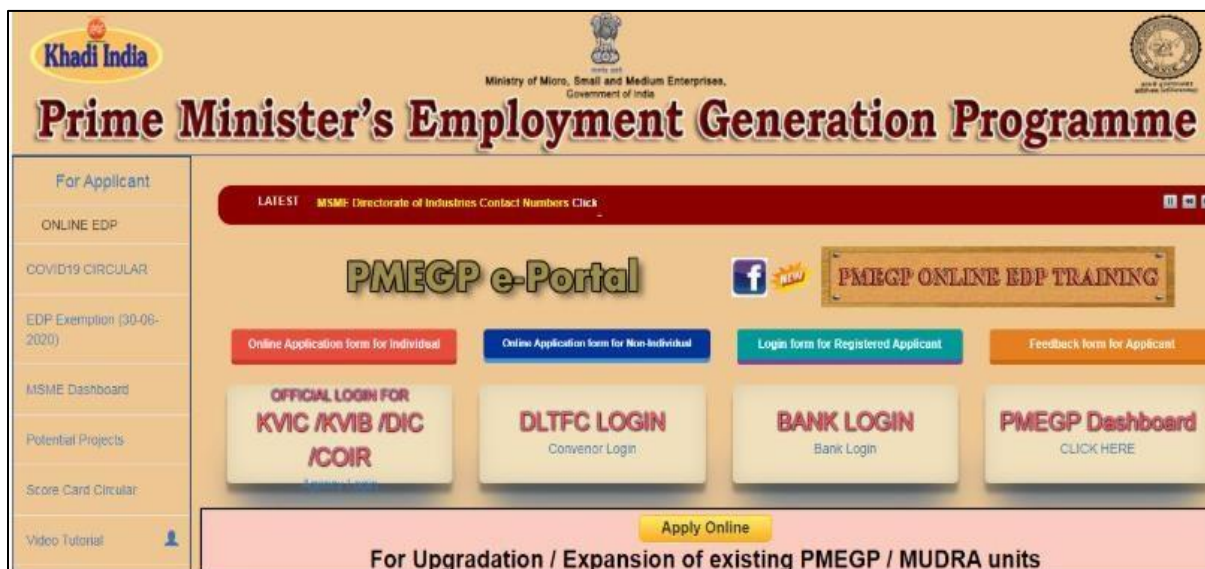
Deccan Volcanism indirectly imposed a positive impact on the development of hyper diverse tropical flora by wiping off the large faunal community of dinosaurs along with gymnosperms and by providing nascent, undisturbed, barren yet fertile habitats within congenial warm and humid climate state ideal for angiosperms to grow and evolve.

**PMEGP: Rural Enterprises Surpass Urban Job Creation**

The Prime Minister's Employment Generation Programme (PMEGP) has shown remarkable success in rural job creation over the last sixteen years.

Rural micro enterprises have generated more jobs per unit compared to urban enterprises.

This trend marks the significance of PMEGP in enhancing rural livelihoods and providing sustainable employment opportunities.





PMEGP aims to promote self employment and entrepreneurship in both rural and urban areas. The programme has supported the establishment of micro enterprises primarily in the non farm sector.

The Ministry of Micro, Small and Medium Enterprises (MSME) and the Khadi and Village Industries Commission (KVIC) oversee its Implementation.

The Covid 19 pandemic affected employment patterns. In 2021 22, rural areas recorded the highest job creation under PMEGP with 6.77 lakh jobs.

The migration of individuals from urban to rural regions during the pandemic necessitated this shift. Conversely, urban job creation peaked in 2023 24, with 1.61 lakh jobs, indicating a recovery phase.

PMEGP provides subsidies to beneficiaries based on their category and location.

General category beneficiaries receive a subsidy of 25% in rural areas and 15% in urban areas.

Special category beneficiaries can receive up to 35% in rural areas and 25% in urban areas . The maximum project cost allowed is 50 lakh for manufacturing and 20 lakh for service sectors.

Since 2018 19, successful PMEGP/MUDRA enterprises have been eligible for a second loan to aid expansion. The maximum project cost for this second loan is 1 crore for manufacturing and 25 lakh for services.

The subsidy for the second loan is 15%, increasing to 20% for projects in the North Eastern Region and hilly areas.

### BODA TYOHAR FESTIVAL

The Boda Tyohar festival , celebrated by the Hatti tribes in Himachal Pradesh s Trans Gori region , commenced with vibrant enthusiasm. This festival is the largest annual celebration for the Hatti community, which consists of approximately three lakh members.





The festival, known locally as Magho ko Tyohar , spans the entire month of Magha and is marked by three distinct mini festivals, each with unique customs and rituals.

The festival holds immense cultural significance for the Hatti community, showcasing their rich traditions and communal spirit. The celebrations are deeply rooted in centuries old customs, denoting the importance of family and community bonds.

## FIRENADO

A firenado recently captured public attention during the Palisades Fire in Los Angeles. The viral footage showcased a swirling column of flames and smoke, stirring curiosity about this rare phenomenon .

A firenado is a fire whirl, defined as a spinning column of hot air and gases rising from a fire. It can vary in size, with diameters ranging from less than one foot to over 500 feet .



Firenados , also known as fire whirls, occur when intense heat and turbulent winds combine, creating a vortex that can carry debris and flames.

Firenados are characterised by their ability to lift and transport smoke, debris, and flames. They often form under specific conditions, including high temperatures and turbulent winds.

The vortex may be visible due to the presence of smoke and ash. Although they can resemble tornadoes, firenados differ in that their rotation is primarily driven by thermal dynamics rather than a mesocyclone.

One of the most recent firenados occurred during the 2018 Carr Fire in California, where wind speeds reached up to 143 mph.

This intensity is comparable to that of an EF 3 tornado. Another notable event took place in Tokyo in 1923, where a fire whirl caused by an earthquake resulted in approximately 38,000 fatalities.

## UTRICULARIA

Recently, Keoladeo National Park in Rajasthan has gained attention for the large presence of the rare carnivorous plant, Utricularia , commonly known as bladderworts. This season marks increase in their numbers, enhancing the park s biodiversity.



Experts highlight that the presence of Utricularia contributes positively to the ecosystem by preying on small insects, thus maintaining environmental balance. This plant plays an important role in controlling insect populations, which is crucial for the local ecosystem.

Utricularia uses bladder like traps to capture small organisms. These traps can ensnare protozoa, insects, larvae, mosquitoes, and even tadpoles.

Once an organism enters the bladder, it becomes trapped and dies. The terrestrial species thrive in waterlogged soil, where they effectively trap small swimming creatures.

The large scale growth of carnivorous plants like Utricularia plays a vital role in maintaining ecological balance. These plants help control the populations of small insects and microorganisms, which supports overall biodiversity in the region.

Their presence contributes to a healthy ecosystem, showcasing the intricate relationships between different species within Keoladeo National Park.

Originally established as a waterfowl hunting ground, Keoladeo National Park was designed by Maharaja Suraj Mal of Bharatpur. It became a bird sanctuary in 1956 and was declared a protected area in 1971.

In 1982, it was officially designated as a national park. The park was recognised as a UNESCO World Heritage Site in 1985, denoting its ecological importance.

### NAG MARK 2 MISSILE

The Defence Research and Development Organisation (DRDO) has recently conducted successful field evaluation trials of the Nag Mark 2 missile.

This third generation fire and forget anti tank guided missile was tested at the Pokhran field range in Rajasthan. The trials demonstrated exceptional precision and reliability, effectively destroying all designated targets.

The Defence Ministry confirmed that the trials validated the missile's firing range capabilities.



Nag Mark 2 is a third generation anti tank guided missile developed in India. It features fire and forget technology, allowing operators to lock onto targets before launch.

This technology ensures precision strikes without requiring further guidance after launch. The missile is designed to neutralise modern armoured threats, making it a vital addition to India's defence arsenal.

The Nag Mark 2 boasts several key features:

**Fire and Forget Technology** This allows for precision targeting with minimal operator intervention after launch.

**Versatile Performance** It can neutralise modern armoured vehicles, including those equipped with explosive reactive armour.

**Platform Compatibility** The missile is successfully integrated with NAMICA, enhancing its deployment options on the battlefield.

### India to Host 2026 Commonwealth Parliamentary Conference

India is set to host the 28th Conference of Speakers and Presiding Officers of Parliaments of Commonwealth Countries (CSPOC) in January 2026. Lok Sabha Speaker Om Birla announced this at the recent CSPOC Standing Committee Meeting in Guernsey.

The conference will centre on the role of artificial intelligence and social media in parliamentary processes. Birla brought into light India's economic growth and technological advancements.

He invited participants to witness the integration of India's rich cultural heritage with its modern developments during the conference.

The CSPOC was established in 1969 by the then Speaker of the House of Commons of Canada, Lucien Lamoureux.

It serves as a platform for Speakers and Presiding Officers from Commonwealth parliaments. The conference is held every two years, with Canada providing a secretariat to facilitate its activities.

The group operates independently without formal ties to the Commonwealth Parliamentary Association or the Commonwealth Secretariat.

The primary goals of CSPOC include promoting impartiality and fairness among parliamentary leaders. It seeks to enhance knowledge and understanding of parliamentary democracy. Additionally, it aims to develop parliamentary institutions across member nations.

As the host nation, India will have the opportunity to showcase its traditions and commitment to inclusivity. Speaker Om Birla emphasised the importance of dialogue among parliamentary leaders to address global challenges.



He pointed out issues such as climate change, terrorism, and cybercrime, which require collaborative efforts from all nations.

The Standing Committee is responsible for setting the agenda for the upcoming conference. This committee comprises 15 members, with a quorum of five required for decision making. The committee's chair is the Speaker of the lower house of the hosting jurisdiction. The agenda will focus on issues facing parliaments globally, including sustainable development and governance.

### PINK FIRE RETARDANT

Pink fire retardant is a chemical mixture used to extinguish or slow down wildfires. The most common brand used in the United States is Phos Chek, which primarily consists of ammonium phosphate based slurry.

This formulation includes salts like ammonium polyphosphate, which remains effective longer than water. The bright pink colour is added for visibility, enabling firefighters to identify treated areas against the landscape.



Fire retardant is strategically sprayed ahead of advancing flames to coat vegetation. This coating prevents oxygen from igniting the foliage, thereby slowing the fire's progress.



The effectiveness of this method is contingent upon several environmental factors, including terrain, fuel type, and weather conditions. Firefighters create fire lines around the treated areas to enhance safety and control the fire's spread.

Environmental experts express concerns regarding the use of aerial fire retardants. A study from the University of Southern California revealed that Phos Chek contains toxic metals, including chromium and cadmium.

These substances pose health risks, including cancer and organ damage, while also threatening aquatic ecosystems when they enter waterways. The debate continues over the balance between fire suppression and environmental safety.

The effectiveness of aerial fire retardants is contentious. Researchers argue that it is difficult to ascertain the effectiveness of Phos Chek since it is used alongside various firefighting strategies.

Additionally, the conditions under which it works best are shrinking due to climate change. Experts assert that the increasing frequency and intensity of wildfires will lead to more reliance on aerial retardants, making the need for effective and safe alternatives more pressing.

## MOUNT IBU

Mount Ibu, located in North Maluku, Indonesia, erupted recently, sending ash clouds up to 3 kilometres high. This eruption is part of a larger pattern of volcanic activity in the region, which is known for its geological volatility.

The Centre for Volcanology and Geological Hazard Mitigation (PVMBG) has issued an orange level Volcano Observatory Notice for Aviation (VONA), signalling heightened caution for air travel.



Mount Ibu is one of Indonesia's most active volcanoes, with 21,100 eruptions recorded in 2023 alone. Noteworthy eruptions include one on November 14, 2023, which also resulted in an aviation warning. In August 2009, the eruption alert level was raised to orange, indicating ongoing volcanic activity. Indonesia is situated on the Pacific Ring of Fire, making it one of the most volcanically active regions globally. The country boasts 127 active volcanoes, which pose risks and attract tourists interested in exploring these natural wonders. Balancing tourism promotion with public safety is a continual challenge for Indonesian authorities. Three frontline combatants were commissioned into the Indian Navy at the Naval Dockyard in Mumbai: INS Nilgiri, the lead ship of the Project 17A stealth frigate class; INS Surat, the fourth and final ship of the Project 15B stealth destroyer class; and INS Vaghsheer, the sixth and final Scorpene-class submarine.

### WHAT IS INS NILGIRI?

#### Nilgiri-Class Stealth Frigates: An Overview

The Nilgiri-class stealth frigates, developed under Project 17A, are advanced follow-on vessels of the Shivalik-class (Project 17).

These multi-mission frigates are designed for blue-water operations, capable of handling both conventional and non-conventional threats.

#### Key Features and Capabilities :

Integrated construction for faster building times.

Equipped with supersonic surface-to-surface missiles, Medium Range Surface- to-Air Missiles (MRSAM), upgraded 76 mm guns, and rapid-fire close-in weapon systems.

Versatile roles in anti-surface, anti-air, and anti-submarine warfare. INS Nilgiri: Lead Ship of Project 17A

Construction and Launch: Keel laid on December 28, 2017; launched on September 28, 2019.

Sea Trials: Began in August 2023, followed by comprehensive harbour and sea trials.

Delivery: Handed over to the Navy in December 2024.

#### Other Ships in the Class

The remaining six frigates – Himgiri, Taragiri, Udaygiri, Dunagiri, Vindhyaagiri – are under construction at Mazagon Dock Shipbuilders Limited (MDL), Mumbai, and Garden Reach Shipbuilders and Engineers (GRSE), Kolkata.

#### What is INS Surat?

#### INS Surat: Overview of Project 15B Destroyers

INS Surat is the fourth and final stealth guided missile destroyer under Project 15B, following INS Visakhapatnam, INS Mormugao, and INS Imphal, commissioned over the last three years.

It represents an advanced iteration of the Kolkata-class destroyers built under Project 15A.

#### Key Features of INS Surat

India's First AI-Enabled Warship: Utilizes indigenously developed artificial intelligence solutions for enhanced operational efficiency.

#### Specifications:

Displacement: 7,400 tonnes.

Length: 164 metres.

Speed: Achieved speeds exceeding 30 knots (56 km/h) during sea trials.

Advanced Armaments: Equipped with state-of-the-art surface-to-air missiles, anti-ship missiles, torpedoes, and modern sensors for network-centric warfare.

Project 15B: Evolution of Stealth Destroyers

Built as an advanced variant of the Kolkata-class destroyers under Project 15A (INS Kolkata, INS Kochi, INS Chennai).

Contract Signing: January 2011, for four destroyers designed by the Indian Navy's Warship Design Bureau and built by MDL.

Named after major Indian cities representing the four corners of the country. Role of Destroyers in Naval Operations

High-speed, manoeuvrable warships with greater strike capability and endurance.

Critical assets for offensive operations and network-centric warfare, integrating force elements using advanced IT and communication tools.

## WHAT IS INS VAGHSHEER?

INS Vaghsheer: Overview of the Kalvari Class Submarine

INS Vaghsheer is the sixth and final submarine of the modern Kalvari class built under Project 75, designed for stealth and versatility in naval operations.

### Design and Capabilities

Based on the Scorpene Class: Developed from the Scorpene design by French defence major Naval Group and Spanish entity Navantia.

Diesel-Electric System: Primarily "attack" or "hunter-killer" submarines, built to target and destroy adversary naval vessels.

Silent and Versatile: Known as one of the world's most silent and versatile diesel-electric submarines.

### Mission Versatility

Wide Range of Missions: Includes anti-surface warfare, anti-submarine warfare, intelligence gathering, area surveillance, and special operations.

Armament: Equipped with wire-guided torpedoes, anti-ship missiles, and advanced sonar systems.

### Naming and Heritage

Named After Sandfish: INS Vaghsheer is named after a species of sandfish found in the Indian Ocean.

Historical Significance: The Kalvari class submarines take their names from decommissioned classes, including Kalvari, Khanderi, Karanj, and the Vela class, reflecting the early Soviet-origin Foxtrot class submarines of the Indian Navy post-Independence.

First three satellites of the Firefly constellation were successfully launched aboard SpaceX's Transporter-12 mission from Vandenberg Space Force Base, California.

Firefly is Pixxel's flagship Hyperspectral Imaging (HSI) satellite constellation, featuring six of the highest-resolution commercial hyperspectral satellites to date.

### About Hyperspectral Imaging (HSI) Satellites

An infographic showing diverse applications of hyperspectral imaging

HSI analyses a wide spectrum of light instead of just assigning primary colours (red, green, blue) to each pixel, effectively spectrally fingerprinting the Earth.

HSI provide more information on what is imaged. For instance, while a typical satellite can identify a forest from space, HSI can distinguish between different types of trees and determine health of each individual tree.

### About Satellite Constellation

It is a network of identical artificial satellites with the same purpose and shared control, designed to work as a system.

They communicate with global ground stations and, at times, interconnect to complement each other's functions.

Starlink, with 2,146 active satellites, is the largest satellite constellation. Types: Based on orbital altitude there are three types:

Geostationary orbit (GEO): At an altitude of 36,000 km, it synchronizes with Earth's rotation.

Medium Earth Orbit (MEO): At altitude of 5,000 to 20,000 km, traditionally serving navigation purposes.

Low Earth Orbit (LEO): At altitude of 500 to 1,200 km, primarily support research, telecommunication and Earth Observation needs.

## NATIONAL VOTERS DAY

January 25 is celebrated annually as National Voters' Day to mark the foundation day of the Election Commission of India (ECI), which was founded on January 25, 1950.

Background: -

This year we are celebrating the 15th National Voters' Day with the theme "Nothing Like Voting, I Vote for Sure" emphasising the importance of participation in the electoral process, and encouraging voters to take pride in exercising their franchise.

### Key things to know about elections

In democracies, voting is seen as a basic exercise that shows people's faith in the political process. Voting is a crucial part of exercising one's citizenship.

In 2013, the Indian Supreme Court allowed for the option 'None of the Above' to be introduced in Lok Sabha and state Legislative Assembly elections to allow such views to be expressed.

"Not allowing a person to cast a vote negatively defeats the very freedom of expression and the right ensured in Article 21, i.e. the right to liberty... a provision of negative voting would be in the interest of promoting democracy as it would send clear signals to political parties and their candidates as to what the electorate think about them. The mechanism of negative voting, thus, serves a very fundamental and essential part of a vibrant democracy," the court said at the time.

## POSTAL BALLOTS

'Postal ballot' allows voters who cannot be physically present in polling stations to vote remotely, as specified in Section 60 of the RPA. As per Rule 18 of The Conduct of Election Rules, 1961, the following classes of persons are entitled to vote by postal ballot:

**Special voters:** Individuals holding declared office under Section 20(4) of RPA, including the President, Vice President, Governors, Cabinet Ministers, other high-ranking dignitaries, etc. and their spouses.

**Service voters:** Members of the Indian armed forces, paramilitary forces, an armed state police member serving outside their state, or a government employee stationed abroad and their spouses residing with them.

**Voters on election duty:** This includes all Commission's observers, presiding officers, polling officers and agents, police personnel, and public servants assigned official tasks on polling day.

Private individuals and non-government staff, such as videographers, control room staff, drivers, conductors, cleaners, helpline staff, etc., are also covered. Electors subjected to preventive detention.

**Absentee voters under Section 60 (c) of RPA, 1951:** In 2019, the Election Commission created the 'Absentee Voters' category. This includes senior citizens aged 85+, persons with disabilities having at least 40% disability, Covid-19 suspect or affected persons, and persons employed in essential services.

### About Guillain-Barre Syndrome

It's a **neurological disorder** in which the body's **immune system attacks the peripheral nervous system**.

This is the part of the nervous system outside the brain and spinal cord.

It controls muscle movement, pain signals, and temperature and touch sensations.

GBS is also called **acute inflammatory demyelinating polyradiculoneuropathy (AIDP)**.

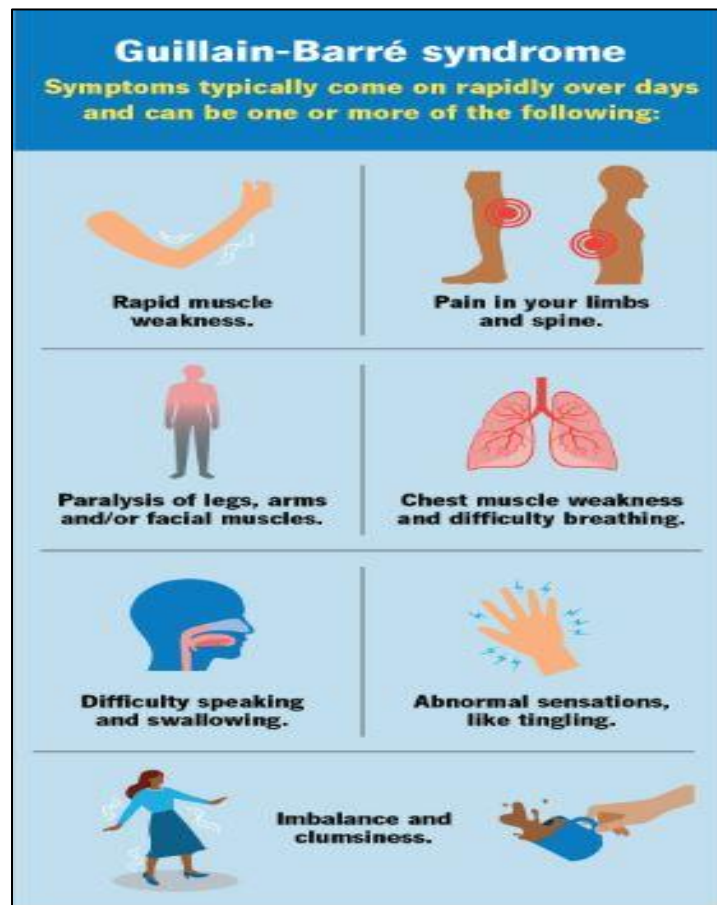
It can occur at any age, but it most commonly affects people between 30 and 50.

### Guillain-Barre Syndrome Causes

The exact cause of the disease remains unclear, but it is **often observed following a viral or bacterial infection, vaccination, or major surgery**.

At such times, the immune system becomes hyperactive, leading to this rare condition.





### Guillain-Barre Syndrome Symptoms

Patients often begin with an unknown fever, followed by **weakness** and other **nervous system-related symptoms**.

It can **increase in intensity** over a period of hours, days, or weeks **until certain muscles cannot be used at all**.

**Some cases of GBS are very mild** and only marked by brief weakness. **Others cause nearly devastating paralysis**, leaving the person unable to breathe on their own.

### Guillain-Barre Syndrome Treatment

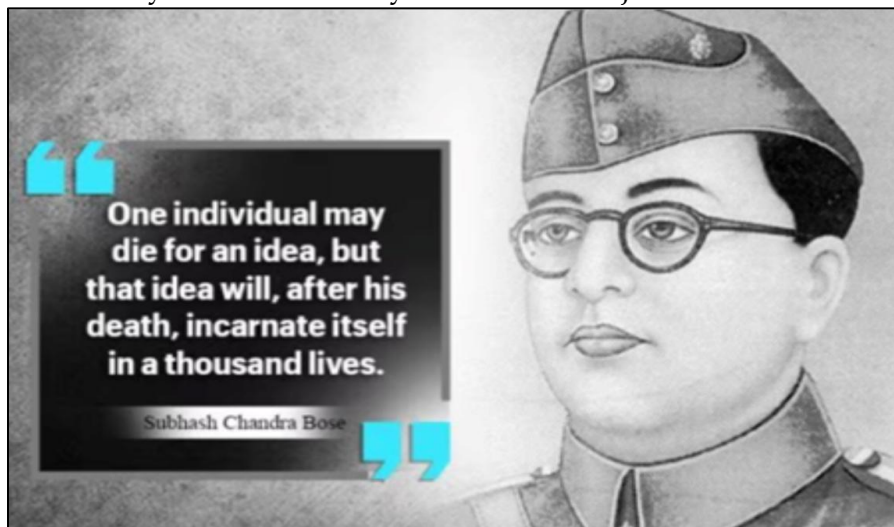
There is **no known cure** for this syndrome.

The most commonly used treatment is intravenous immunoglobulin (IVIG), which is made from **donated blood that contains healthy antibodies**.

This helps calm down the immune system's attack on the nerves.

## PARAKRAM DIWAS

Since 2021, January 23, Netaji Subhas Chandra Bose's birth anniversary, has been observed as "Parakram Diwas," or the Day of Valour. This year marks Netaji's 128th birth anniversary.



The government decided to celebrate Parakram Diwas to inspire the people of the country, especially the youth, to act with fortitude in the face of adversity as Netaji did and to infuse them with a spirit of patriotic fervour.

### Key takeaways

Born to an upper-class Bengali family in 1897 in Cuttack.

Attended Presidency College and Scottish Church College in Kolkata.

Cleared the Indian Civil Services (ICS) examination in 1920 but resigned in 1921.

In 1938, he was elected Congress president in the Haripura session, where he tried to push for swaraj as a "National Demand" and opposed the idea of an Indian federation under British rule. He stood for re-election in 1939 and defeated Dr Pattabhi Sitaramayya, the Gandhi-backed candidate.

Bose tried to set up another working committee, but after being unable to do so, was forced to resign and was replaced by Rajendra Prasad. Within a week, he proposed the creation of the "Forward Bloc" within the Congress Party, in order to bring the radical-left elements of the party together.

He was arrested in 1940 before he could launch a campaign to remove the monument dedicated to the victims of the Black Hole of Calcutta, an incident when a number of European soldiers died while imprisoned in 1756.

### Gandhi and Bose

Gandhi was willing to wait a long time for Independence, Bose wanted immediate action, if not immediate results. Gandhi was anti-materialistic and hostile to modern technology, Bose saw technology and mass production as essential.

Gandhi wanted a decentralized society and disliked the modern state; Bose wanted a strong central government and saw the modern state as the only solution to India's problems. And finally, Bose did not share Gandhi's dedication to non-violence.

Bose was well aware of the significance of Gandhi. He was the first to call him the "father of the nation" during an address from the Azad Hind Radio from Singapore in July 1944.

### The INA and Bose

The INA was formed on February 17, 1942, two days after the British surrendered to Japanese forces in Singapore. It mostly comprised Indian prisoners of war (PoWs) captured by the Japanese during their Southeast Asia campaign.

Bose arrived in Singapore in July 1943 and took charge of INA on July 4.

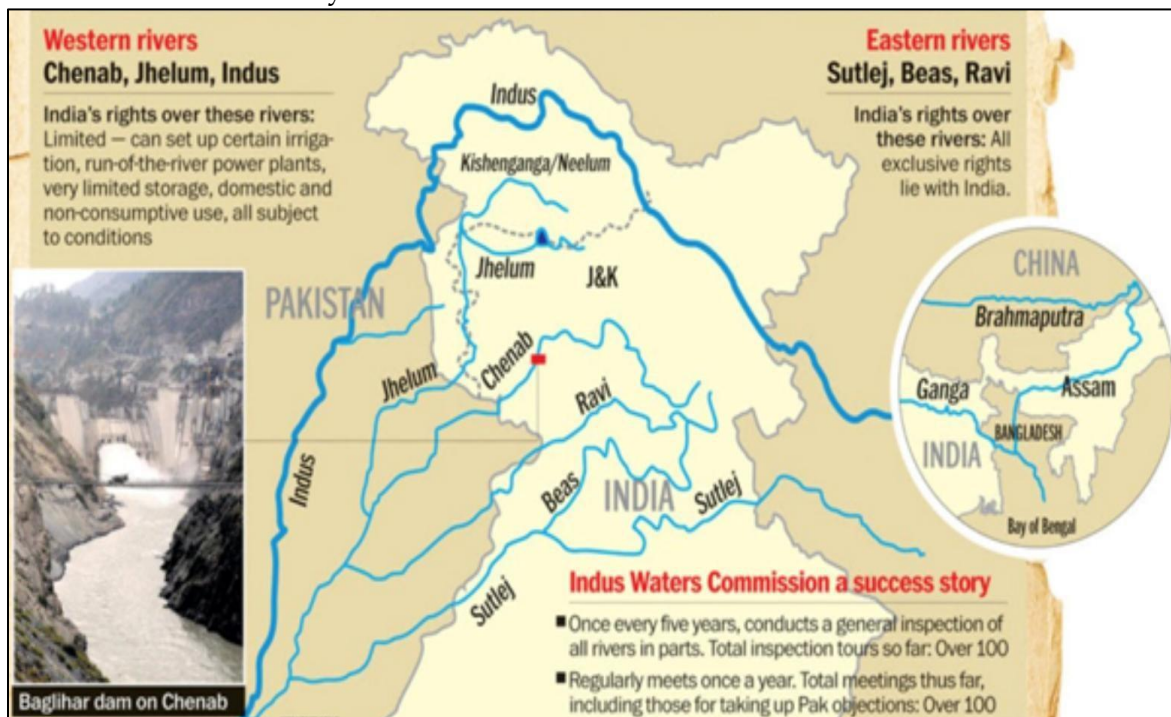
He gave the call of "Delhi Chalo" to INA to march on Delhi and liberate India. The INA crossed the Indo-Burma border and marched towards Imphal and Kohima in March 1944. The Chalo Delhi campaign ended at Imphal.

By 1945, the British had launched their own campaign to retake Burma, and the INA once again found itself in retreat. After the atomic bombs were dropped on Hiroshima and Nagasaki in August 1945, the war came to an end.

Bose wanted to stay with his troops for the surrender but was persuaded to leave by his subordinates. He died in a plane crash three days later.

## INDUS WATER TREATY

The Neutral Expert (NE) appointed under terms of the Indus Water Treaty (IWT), 1960, decided that he was "competent" to decide on differences between India and Pakistan on the design of hydroelectric projects built on the Indus Treaty-rivers.



The dispute resolution mechanism laid out under the terms of the IWT says that disputes must first attempt to be resolved by the Permanent Indus Commission (PIC).

If they do not succeed, the matter would be weighed by the World Bank-appointed Neutral Expert. If this fails too, the matter would be decided by a Court of Arbitration.

#### Key takeaways

The Indus Water Treaty (IWT) is a landmark water-sharing agreement between India and Pakistan, brokered by the World Bank.

Negotiations, mediated by the World Bank, began in the 1950s and culminated in the signing of the Indus Water Treaty in Karachi on September 19, 1960 by Indian Prime Minister Jawaharlal Nehru and Pakistani President Ayub Khan.

It governs the use and distribution of the waters of the Indus River and its tributaries.

#### Rivers Covered:

Western Rivers (allocated to Pakistan): Indus, Jhelum, Chenab.

Eastern Rivers (allocated to India): Ravi, Beas, Sutlej.

#### Water Allocation:

India has exclusive rights over the waters of the Eastern Rivers

Pakistan has rights over the waters of the Western Rivers, but India is allowed limited use.

In effect, the treaty gave India about 30% of the water carried out by the “Indus Rivers System” while Pakistan got 70% of the waters.

#### Institutional Mechanism:

A Permanent Indus Commission was established with representatives from both countries to implement and manage the treaty.

The commission meets regularly to resolve disputes and exchange data.

There is controversy over the construction of two hydel power projects by India in Jammu & Kashmir – one on Kishanganga, a tributary of Jhelum, in Bandipora district, and the other (Ratle Hydroelectric Project) on Chenab in Kishtwar district.

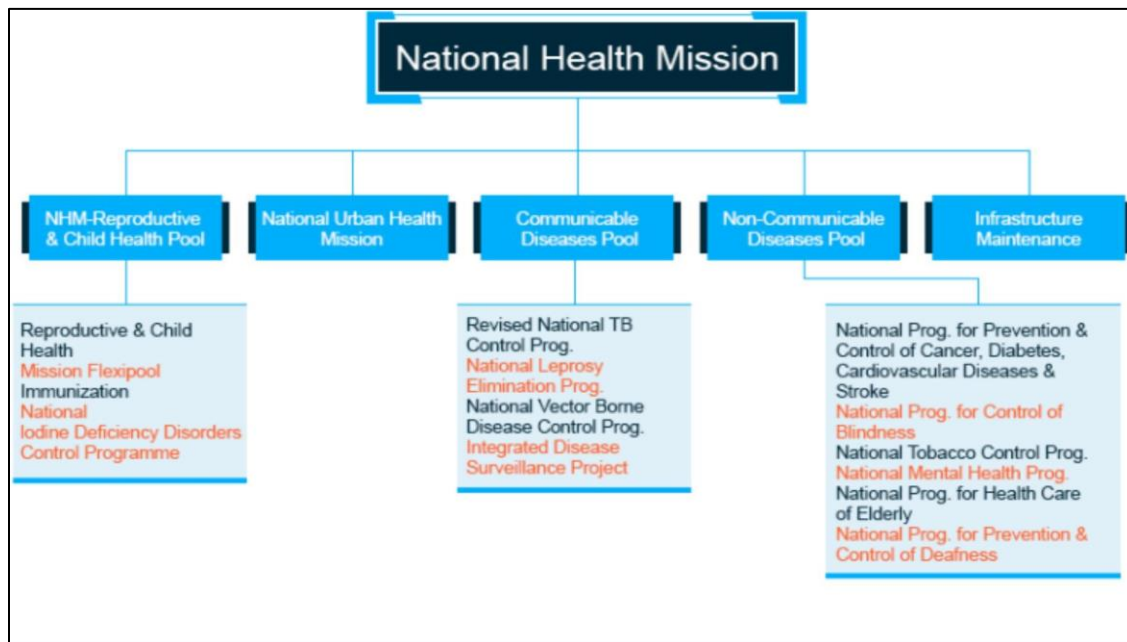
Both are “run-of-the-river” projects, meaning they generate electricity (330 MW and 850 MW respectively) using the natural flow of the river, and without obstructing its course. However, Pakistan has repeatedly alleged that both these projects violate the IWT.

India decided there would be no more meetings of the Permanent Indus Commission (PIC) until the IWT was renegotiated. The last meeting happened in Delhi in May 2022.



## NATIONAL HEALTH MISSION

The National Health Mission (NHM) has significantly contributed to improving public health, including lowering of the maternal mortality ratio, incidence of tuberculosis (TB), and sickle cell anaemia.



It has also contributed to expanding human resources while fostering an integrated response to health emergencies, the Union government said in its assessment report (2021-24) presented to the Cabinet.

Background: –

The National Health Mission (NHM) was launched by the government of India in 2013 subsuming the National Rural Health Mission and National Urban Health Mission.

Key takeaways

Components of NHM:

Health System Strengthening: Focuses on improving healthcare infrastructure and services in both rural and urban areas.

Reproductive-Maternal-Neonatal-Child and Adolescent Health (RMNCH+A): Addresses the health needs of women and children, aiming to reduce mortality rates.

Communicable and Non-Communicable Diseases: Works on controlling and preventing both communicable diseases (like malaria and tuberculosis) and non-communicable diseases (like diabetes and hypertension).

### Major Initiatives:

Accredited Social Health Activists (ASHA): Over 9.15 lakh ASHAs are deployed across the country to provide community-level care, especially for marginalized sections.

Rogi Kalyan Samiti/Hospital Management Society: Committees involving community members manage hospital affairs and ensure better facilities for patients.

Mainstreaming of AYUSH: Integrates traditional medicine practices (Ayurveda, Yoga, Unani, Siddha, and Homeopathy) into the healthcare system.

Janani Suraksha Yojana (JSY) aims to reduce maternal mortality among pregnant women by encouraging them to deliver in government health facilities.

National Ambulance Services (NAS): People can dial 108 or 102 telephone number for calling an ambulance. Dial 108 is predominantly an emergency response system, primarily designed to attend to patients of critical care, trauma and accident victims etc. Dial 102 services essentially consist of basic patient transport aimed at the needs of pregnant women and children though other categories are not excluded.

### Key takeaways

LID 568 was feeding on a surrounding cloud of matter at 40 times the Eddington limit (theoretical maximum rate).

The Eddington Limit, named after British astrophysicist Sir Arthur Eddington, is a theoretical concept that defines the balance between two opposing forces acting on matter near a luminous object, such as a black hole or star.

### Forces at Play:

Gravitational Force: Pulls matter inward toward the object (e.g., a black hole).

Radiation Pressure: Outward pressure created by the intense energy and radiation emitted by the accreting material.

### Equilibrium Point:

The Eddington Limit is reached when the radiation pressure exactly balances the gravitational pull.

At this point, the accreting matter no longer falls inward because the outward pressure prevents further accumulation.

### Significance in Black Hole Accretion:

#### Feeding and Luminosity:

Black holes accrete matter, which forms a hot accretion disk around them.

The heating of the disk emits radiation, especially X-rays, that contributes to the outward radiation pressure.

The Eddington Limit governs the maximum rate of accretion and brightness of the black hole.

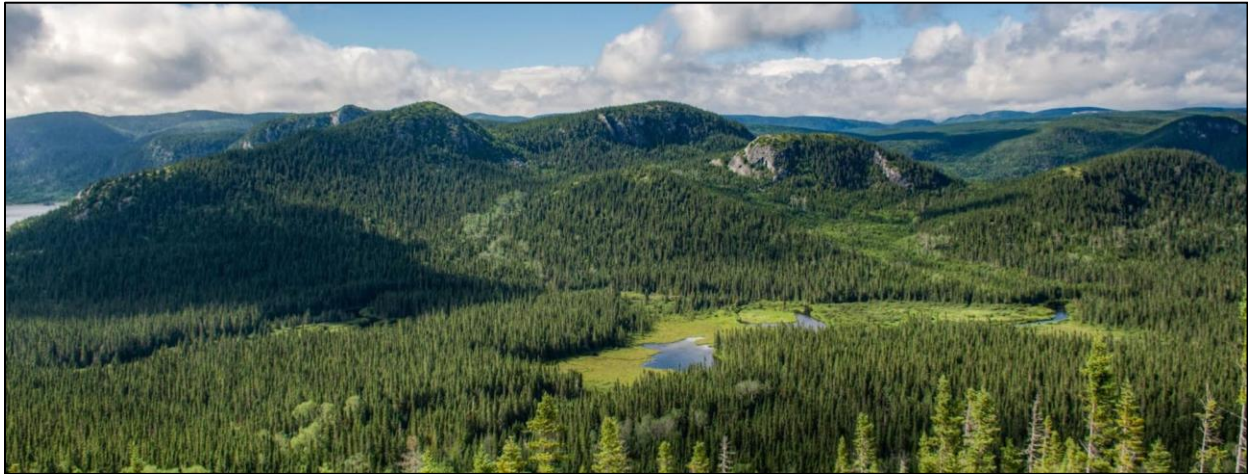
#### Super-Eddington Accretion:

Occurs when accretion rates exceed the Eddington Limit.

In such cases, black holes feed much faster, emitting higher radiation levels than the limit would suggest.

## BOREAL FORESTS

Nearly half of the global boreal forests — spanning Canada, Alaska and Siberia — are undergoing major transitions due to climate change, making them increasingly vulnerable to forest fires and altering their role as a key carbon sink, a new study has revealed.



Background: –

Boreal forests, also known as Taiga, are the largest terrestrial biome on Earth, forming a critical part of the planet's ecological balance.

Key takeaways

Boreal forests are primarily found in the high northern latitudes, forming a circumboreal belt around the world, spanning across northern Europe, Asia, and North America.

They are located between temperate forests in the south and the Arctic tundra in the north.

Characteristics

Climate: Boreal forests experience long, cold winters and short, mild summers. The regions are characterized by low temperatures, low precipitation, and frequent snow cover.

Vegetation: The predominant vegetation consists mainly of coniferous trees like pines, spruces, and larches. There are also some deciduous trees, such as birches and poplars. Understory vegetation includes shrubs, mosses, and lichens.

Soils: The soils in boreal forests are usually acidic and nutrient-poor, formed under cool, moist conditions which slow down the decomposition of organic matter. This results in a thick layer of litter on the forest floor.

### Ecological Importance

**Carbon Storage:** Boreal forests are vital carbon sinks, holding more carbon than all tropical forests combined. The accumulation of organic matter, under cold temperatures, leads to large stores of carbon.

**Biodiversity:** They support a variety of wildlife adapted to the cold, such as moose, caribou, wolves, bears, and many bird species. These forests also provide essential breeding grounds for several migratory bird species.

**Hydrology:** Boreal forests contain substantial amounts of surface freshwater and play a critical role in regulating the water cycle.

## RATNAGIRI EXCAVATIONS

The Archaeological Survey of India recently resumed excavations at Odisha's Ratnagiri Buddhist complex, uncovering a colossal Buddha head, a massive palm, an ancient wall, and inscribed relics from the 8th-9th Century AD.

Background: -

The discoveries are significant, especially given Odisha's historical relationship with Buddhism beginning with Mauryan Emperor Ashoka (304-232 BCE), one of Buddhism's greatest patrons whose invasion of the kingdom of Kalinga - the ancient name for Odisha - led to him embracing the religion.

## Ratnagiri — the centre of ancient Buddhist learning



Located 100 km northeast of Bhubaneswar and part of the famous Diamond Triangle of Odisha along with Udaygiri and Lalitgiri, Ratnagiri - translated as the 'Hills of Jewels' - was first documented as a historical site in 1905.

The last excavations carried out between 1958 and 1961 led to the discovery of many remains - including a brick stupa, three monastic complexes and over hundreds of votive and commemorative stupas.



However, with the ASI eventually shifting focus on sites such as Lalitgiri, where the oldest Buddhist monastery in the state was found, the Ratnagiri excavation was put on the backburner.

Experts date Ratnagiri to the 5th and 13th Century, although the peak period of construction is dated between the 7th and 10th centuries. Ratnagiri rivalled Nalanda as a learning centre.

There are some studies that suggest that the renowned Chinese Buddhist monk and traveller, Hiuen Tsang, who visited Odisha, during 638-639 AD, might have visited Ratnagiri.

### Odisha, Southeast Asia and Buddhism

Odisha has long enjoyed maritime and trade links with Southeast Asian countries: pepper, cinnamon, cardamom, silk, camphor, gold, and jewellery were popular items of trade between the ancient kingdom of Kalinga and Southeast Asia.

Even though there was no evidence of Buddha visiting Odisha during his lifetime, Kalinga played a great role in popularising Buddhism, especially in Southeast Asia, because of its trade link: experts believe that Tapassu and Bhallika, the two merchant brothers who became the first disciples of Lord Buddha, having their origins from Utkala, another ancient name of Odisha.

Mauryan Emperor Ashoka is believed to have invaded Kalinga in 261 BC but, deeply moved by the bloodshed, he embraced Buddhism, which he eventually helped spread not only to his own empire but also to Sri Lanka, and Central and Southeast Asia.

In Odisha, Buddhism is stated to have particularly flourished under the Bhaumakara dynasty, which ruled parts of the state in between the 8th and 10th Century.

Odisha annually holds Baliyatra, literally 'voyage to Bali' – a seven-day festival to commemorate the 2,000-year-old maritime and cultural links between Kalinga and Bali and other South and Southeast Asian regions such as Java, Sumatra, Borneo, Burma (Myanmar) and Ceylon (Sri Lanka).

## DONATION TO POLITICAL PARTIES

After the Supreme Court's decision to scrap electoral bonds last year, donations to political parties significantly increased through electoral trusts, as indicated by the electoral trust contribution reports released by the Election Commission of India (ECI) for the previous financial year.

### Background: –

Nearly three-fourths of the donations to the Prudent Electoral Trust, which has received the highest contribution, were made after the Supreme Court's decision on February 15.

### Key takeaways

An Electoral Trust is a non-profit organization established in India to facilitate transparent funding to political parties.

On 31st January, 2013, through 'The Electoral Trusts Scheme, 2013', the Central government specified the eligibility and procedure for registration of Electoral Trusts.



## Key Features of Electoral Trusts

### Purpose:

To collect voluntary contributions from individuals, companies, and institutions.

To distribute these funds to registered political parties.

### Legal Framework:

Governed under Section 25 of the Companies Act, 1956 (as a non-profit).

Electoral trust can receive contribution only from permitted people/ entities as given below

May receive contributions from	Shall not accept contributions from
An individual who is a citizen of India	An individual who is not a citizen of India
A company registered in India	A foreign entity whether incorporated or not
A firm (resident in India)	Other Electoral Trusts (approved under the Electoral Trusts Scheme)
HUF (Indian residents)	Contributors without PAN
An association of persons (Indian residents)	NRIs without a passport number

An ET must distribute up to 95% of the voluntary contributions collected, with the surplus brought forward from the earlier year, to eligible political parties only. The remaining 5%, with a cap of ₹3 lakh, may be used for managing its own affairs.

These trusts are not allowed to use any contribution for the direct or indirect benefit of its members or contributors.

### Eligibility Criteria for Donations:

Only registered political parties under Section 29A of the Representation of the People Act, 1951, are eligible to receive funds.

Donations cannot be made to independent candidates or unregistered parties.

### Transparency and Reporting:

Trusts must file an annual contribution report with the Election Commission of India (ECI).

The accounts of any ET must be audited and the report must be furnished to the Commissioner of Income Tax, including the list of contributors, list of parties that funds were distributed to, and the amounts disbursed.

### Tax Benefits:

Donors receive tax benefits under Section 80GGB and Section 80GGC of the Income Tax Act, 1961.

Electoral trusts themselves are exempt from income tax on their income.

## RBI GUIDELINES FOR ARC'S

The Reserve Bank of India (RBI) modified guidelines related to asset reconstruction companies (ARCs) recently.

Background: –

RBI eased norms pertaining to settlement of dues between asset reconstruction companies (ARCs) and borrowers.

Key takeaways

Asset Reconstruction Companies (ARCs) are specialized financial institutions that acquire non-performing assets (NPAs) or bad loans from banks and financial institutions and help recover or restructure them. This enables banks to clean up their balance sheets and focus on lending activities.

Regulation:

Governed by the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002.

Regulated by the Reserve Bank of India (RBI).

Key Provisions under the SARFAESI Act:

ARCs are empowered to take possession of secured assets of defaulters without court intervention.

They can manage and recover loans through sale, lease, or restructuring.

Objectives of ARCs

Resolution of Stressed Assets: Help banks and financial institutions recover bad debts.

Financial Stability: Improve the health of the banking sector by reducing NPAs.

Resource Allocation: Enable banks to focus on productive lending by offloading non-performing loans.

Functions of ARCs

Acquisition of NPAs: ARCs purchase bad loans from banks at a discounted value.

Restructuring and Recovery: Restructure the debt or recover dues through measures like asset liquidation or settlement.

Issuance of Security Receipts (SRs): ARCs fund their operations by issuing SRs to qualified institutional buyers (QIBs).

La Perouse

The Navies of nine Indo-Pacific countries, including India, are taking part in a multilateral exercise, La Perouse, hosted by France in the strategic straits of Malacca, Sunda, and Lombok, between the Indian Ocean and the Pacific Ocean.

Background: –

The three straits are critical choke points as these provide entry and exit into the Indian Ocean Region. With forays by the Chinese Navy in the region rising, the straits are under increased focus.



### Strait of Malacca

Strait of Malacca connects the Andaman Sea (Indian Ocean) to the South China Sea (Pacific Ocean).  
Location: Lies between Peninsular Malaysia and Sumatra (Indonesia), with its northern end near Thailand.

Length: Approximately 930 kilometers.

Width:

Narrowest point: Around 2.8 kilometers at the Philips Channel near Singapore.

Widest point: Approximately 370 kilometers.

Depth: Varies, with shallowest points being around 25 meters, making navigation challenging for large vessels.

## SUNDA STRAIT

The Sunda Strait is a significant waterway in Southeast Asia that separates the islands of Java and Sumatra in Indonesia.

It connects the Java Sea (part of the Pacific Ocean) to the Indian Ocean. Though less utilized than the Strait of Malacca, the Sunda Strait holds strategic and economic importance.

Length: Approximately 130 kilometers.

Width: Varies between 24 kilometers at its narrowest and about 150 kilometers at its widest.

Depth: Relatively shallow, with depths ranging from 20 to 100 meters, making it less suitable for large vessels compared to other straits.

Volcanic Activity: The strait includes several volcanic islands, the most notable being Krakatoa, which erupted catastrophically in 1883.

Lombok strait

The Lombok Strait is a key maritime passage in Southeast Asia, situated between the Indonesian islands of Bali (to the west) and Lombok (to the east).

It connects the Java Sea (Pacific Ocean) to the Indian Ocean and serves as a critical alternative to the congested Strait of Malacca.

Length: Approximately 60 kilometers.

Width: Around 20 kilometers at its narrowest point.

Depth: Significantly deeper than the Sunda and Malacca Straits, with depths ranging from 250 to 1,300 meters.

Part of the Wallace Line: The strait is a biogeographical boundary between Asian and Australasian flora and fauna, making it ecologically significant.

## PM JANMAN

The Ministry of Tribal Affairs (MoTA) organized a National Conference of District Magistrates to speed up the implementation of the Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN).

What is PM JANMAN?

The Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN) is initiative aimed at improving the socio-economic conditions of Particularly Vulnerable Tribal Groups (PVTGs) in India.

Launched on November 15, 2023, during Janjatiya Gaurav Divas, this programme has a budget of ₹24,000 crore allocated for three years, from 2023 to 2026.

The Ministry of Tribal Affairs (MoTA) is spearheading this effort, collaborating with multiple ministries to address developmental gaps in tribal regions.

### Objectives of PM JANMAN

The primary aim of PM JANMAN is to enhance the living standards of PVTGs through comprehensive development interventions.

It targets 75 PVTG communities across 18 states and one Union Territory, the Andaman & Nicobar Islands.

The initiative is designed to provide essential services and improve overall quality of life.

### Key Focus Areas

The programme concentrates on 11 critical sectors, including housing, healthcare, education, and livelihood. Specific focus areas include:

**Housing:** Construction of 2 million pucca houses over five years, with financial assistance of ₹2.39 lakh per unit.

**Healthcare:** Improved access to medical facilities and health services.

**Education:** Establishment of school hostels and operationalisation of Anganwadi Centres for early childhood care.

**Drinking Water:** Ensuring reliable water supply through the Jal Jeevan Mission

**Road Connectivity:** Enhancing infrastructure to facilitate better access to remote areas.

**Livelihood:** Promotion of sustainable livelihoods through initiatives like Van Dhan Vikas Kendras (VDVKs).

### Budget and Financial Structure

PM JANMAN has a total budgetary outlay of ₹24,104 crore, with ₹15,336 crore from the central government and ₹8,768 crore from state contributions. This financial framework supports the implementation of various development projects aimed at uplifting PVTGs.

### Implementation and Collaboration

The Ministry of Tribal Affairs acts as the nodal body, working alongside nine other ministries and state governments. This collaborative approach is essential for effective execution and monitoring of the programme. District Magistrates play important role as nodal officers, ensuring that local needs and community participation are prioritised.

### Recent National Conference

A National Conference of District Magistrates was held at Bharat Mandapam, New Delhi, to discuss strategies for accelerating PM JANMAN's implementation. The conference brought together representatives from 88 districts across 18 states. Discussions focused on thematic areas such as housing, road connectivity, and the establishment of Multi-Purpose Centres (MPCs) to better serve PVTG communities.



### Evaluation and Future Prospects

The continuation of PM JANMAN beyond March 2026 will depend on evaluations by the NITI Aayog and assessments by the expenditure finance committee.

The government is committed to bridging the gap between policy and grassroots implementation, ensuring that PVTGs receive the support they need. Through PM JANMAN, the Government of India aims to create a more inclusive society where the rights and needs of tribal communities are recognised and addressed effectively.

## PHILADELPHI CORRIDOR

The Philadelphi Corridor is an important strip of land along the Gaza-Egypt border. It serves as link for Gaza, particularly for Hamas, amidst ongoing conflicts and ceasefire negotiations. Recent developments have seen a ceasefire brokered by international parties, impacting control and security arrangements in the corridor.



### Geographical Significance

The corridor stretches approximately 14 km from the Mediterranean Sea to the Kerem Shalom crossing with Israel. It is about 100 metres wide, consisting mainly of scrubland and sand dunes. This area is vital for smuggling activities, connecting Gaza to Egypt.

### Historical Context

Established under the 1979 Camp David Accords, the corridor was intended as a demilitarised zone. Following Israel's withdrawal from Gaza in 2005, the Palestinian Authority and Egypt managed the area. Tensions escalated after Hamas took control in 2007.

### Security Arrangements

Post-2005, the corridor was designated a demilitarised zone, restricting heavy military presence. However, Israel maintained a military interest to prevent smuggling and attacks, particularly after the October 7, 2023, Hamas attack on Israel.

### Smuggling Activities

The corridor is a key route for Hamas to smuggle weapons and goods. Tunnels and crossings facilitate the movement of arms and operatives, despite Egyptian efforts to curb these activities. The Mediterranean Sea has also been implicated in smuggling operations.

### Ceasefire Negotiations

A recent ceasefire agreement, facilitated by Qatar, the US, and Egypt, includes phased withdrawal of Israeli forces from the corridor. This agreement stipulates Hamas releasing hostages in exchange for Palestinian prisoners and increased humanitarian aid to Gaza.

### Current Control Dynamics

The Israeli Defense Forces (IDF) have begun to withdraw from the corridor as part of the ceasefire terms. Netanyahu's government is cautious about relinquishing control, citing security concerns over Hamas's potential resurgence.

### International Implications

The corridor's status affects regional stability and international relations. The dynamics between Israel, Hamas, and Egypt are critical in shaping future peace efforts and security arrangements in the area.

### Future Prospects

The future of the Philadelphi Corridor remains uncertain. Ongoing negotiations and the security situation will determine its role as a lifeline for Gaza and as a buffer zone between conflicting parties.

## PANGSAU PASS INTERNATIONAL FESTIVAL

The Pangsau Pass International Festival (PPIF) 2025, held in Arunachal Pradesh, celebrates the region's cultural heritage and its historical significance during World War II.

Chief Minister Pema Khandu announced plans to enhance tourism by restoring World War II remnants in Nampong, denoting the festival's role in promoting economic growth and cultural exchange. This year's festival coincides with the 80th anniversary of the war's conclusion.



### Key Facts about Pangsau Pass

#### Location and Altitude:

**Pangsau Pass (Pan Saung Pass)** is located on the India-Myanmar border at an altitude of **3,727 feet (1,136 meters)**.

It lies on the **crest of the Patkai Hills** and is part of the **famous Ledo Road (Stilwell Road)**.

It is named after the Myanmar village **Pangsau**, located 2 km east of the pass.

#### Geographical Importance:

The pass serves as one of the easiest routes into Myanmar from the Assam plains.

India's **easternmost point, Chaukan Pass**, lies northeast of Pangsau Pass in Arunachal Pradesh's Changlang district.

#### Festival tickets

#### Historical Significance:

**13th Century:** Used by the Ahoms, a Shan tribe, to enter Assam.

#### British Era:

The pass was surveyed for a potential railway route connecting India to **Myitkyina in north Burma** through the Hukawng Valley, but no railway was constructed.

British engineers surveyed and prospected the Patkai Range for a road from Assam into northern Burma.

## World War II:

The **Stilwell Road (Ledo Road)** was constructed to connect British India to Nationalist China to support their fight against Japanese forces.

Pangsau Pass, nicknamed "**Hell Pass**", was the first major obstacle on the route due to steep gradients and muddy terrain.

The Stilwell Road connected **Ledo (Assam)** to Pangsau Pass, covering a distance of **61 km (38 mi)**.

**Present Day: Pangsau Pass Winter Festival:** Held annually since **2007** in Nampong, Arunachal Pradesh, during the 3rd week of January.

Promotes cultural exchange between **Northeast India and Myanmar**.

Features folk dances (Bihu, Bamboo dance, Tangsa Rongrand War dance), arts, crafts, ethnic foods, and traditional sports, showcasing the culture of the Tangsa Naga tribe and other local communities.

Festival tickets

Historical Significance

Nampong is a key site for World War II history. The region served as important supply route for Allied forces. Key locations include the Stilwell Road and the Lake of No Return, both tied to wartime events.

World War II Cemetery

The Jairampur cemetery, discovered by Assam Rifles in the 1990s, contains over 1,000 graves. It is the largest World War II cemetery in India, spanning three acres. It serves as a poignant reminder of the war's impact.

Tourism Development

The state government plans to restore war remnants to boost tourism. Initiatives include improving infrastructure and connectivity in the Tirap, Changlang, and Longding districts. This aims to attract more visitors to the region.

Cross-Border Cultural Exchange

During the festival, visitors can cross into Myanmar without passports. This encourages cultural exchange and trade between the two nations, enhancing community ties.

International Participation

The festival attracted a 150-member delegation from Myanmar, promoting mutual cooperation and cultural exchange. Events at the festival highlight shared histories and encourage relationships between communities.

Memorialisation Efforts

A tank from the war has been installed at the cemetery entrance, symbolising remembrance. The festival encourages visits to sites of historical significance, enhancing awareness of the region's wartime legacy.

## NITROGEN USE EFFICIENCY

Recent reports highlight the increase in reactive nitrogen added to the Earth's surface, primarily due to human activities. This rise has doubled compared to pre-industrial levels, with projections suggesting a further increase due to climate change.

The Food and Agriculture Organization has emphasised the urgent need for improved nitrogen use efficiency (NUE) to mitigate environmental impacts.

### Current Nitrogen Contributions

Humans add approximately 150 teragrammes (Tg) of reactive nitrogen annually.

This is primarily from agriculture and industry.

Livestock alone contributes about one-third of total nitrogen emissions.

Other sources include synthetic fertilisers and manure emissions.

### Planetary Boundaries

Global nitrogen flows have exceeded safe environmental limits. This exceedance has intensified since 2015. It marks the need for tailored policies that consider regional differences in nitrogen management.

### Nitrogen Use Efficiency (NUE)

NUE measures the ratio of nitrogen recovered in outputs compared to inputs.

It has fluctuated over the decades, with a notable increase from 40% in the 1980s to 56% in 2022.

Variations exist between regions and crops, with soybeans achieving high NUEs and fruits and vegetables showing low efficiency.

### Regional Nitrogen Pollution

Nitrogen pollution is most severe in North America, Western Europe, and parts of Asia.

Countries in these regions have extensively used fertilisers, leading to environmental damage.

### Recommendations for Improvement

The report advises the fertiliser industry to reduce greenhouse gas emissions. It also suggests promoting biological nitrogen fixation through leguminous crops.

National governments should implement best practices for manure management and encourage the use of organic nitrogen fertilisers.

### Policy and Sustainable Practices

Agrifood system policies should focus on sustainable nitrogen management.

This includes spatial planning to redistribute livestock and promoting circular bioeconomy approaches.

National commitments to reduce nitrogen pollution are essential for meeting global biodiversity and climate goals.

### Future Projections

Without intervention, nitrogen contributions could rise to 600 Tg per year by 2100. This potential increase poses further risks to air, water, and soil quality, necessitating immediate actions to enhance NUE and mitigate environmental impacts.



## DHANAURI WETLAND

The Dhanauri wetland, located near Jewar airport in Uttar Pradesh, has become a focal point for environmental conservation. The National Green Tribunal (NGT) has directed the state government to expedite the notification process for declaring this area as a wetland. The Dhanauri water body, covering 112.89 hectares, is vital for local biodiversity, especially for migratory birds.



### Current Status of Dhanauri Wetland

The NGT has mandated the Uttar Pradesh government to clarify the status of Dhanauri's wetland notification within four weeks. The state's forest department has been asked to explain the need for additional time, as the decision to declare the site as a wetland has already been made.

The wetland is primarily situated on privately owned land, necessitating consultations with local landowners.

### Importance of Dhanauri for Biodiversity

Dhanauri is an important habitat for various bird species, including over 150 Sarus cranes, which are the state bird of Uttar Pradesh. The wetland supports more than 217 bird species and serves as nesting and feeding ground, particularly during the migratory season from November to March when it attracts over 50,000 waterfowl.

### Ramsar Site Criteria

The Dhanauri wetland meets two key Ramsar site criteria:

It hosts over 1% of the biogeographic Sarus crane population

It serves as a congregation site for more than 20,000 waterfowl

These criteria are essential for the designation of wetlands under the Ramsar Convention, which aims to conserve globally wetlands.

#### Ramsar Convention

Established in 1971, the Ramsar Convention is an international treaty focused on the conservation and sustainable use of wetlands.

It recognises Ramsar sites as areas of global importance.

The convention encourages countries to designate wetlands that meet specific ecological criteria for protection and management.

#### Legal Framework and Conservation Plans

The conservation plan for the Jewar airport project includes provisions for protecting local wildlife, particularly birds. The proposal to declare Dhanauri as a Ramsar site has been supported by the Union Environment Ministry, denoting its ecological significance and the need for conservation measures.

#### Challenges Ahead

While the notification process for Dhanauri as a wetland is underway, challenges remain. The impact of airport operations on the local bird population is a concern. Ensuring that the wetland's ecological integrity is maintained amidst development pressures is critical for the survival of its unique biodiversity.

#### Community Involvement

Local communities play a vital role in the conservation of Dhanauri. Engaging landowners and residents in the consultation process is essential for the successful implementation of conservation measures. Their support is crucial for the long-term sustainability of the wetland.

## AD HOC JUDGES

Recently, the Supreme Court suggested temporarily appointing retired judges on an ad hoc (as required) basis to address the growing backlog of pending criminal cases before several High Courts.

#### Background:

In 2021, the SC noted there have only been three recorded instances of ad hoc judges being appointed under Article 224A, calling it a "dormant provision".

#### Key takeaways

Article 224A of the Indian Constitution allows the Chief Justice of a High Court to request retired HC judges to perform the duties of a judge again, with the permission of the President of India.

Such appointees are entitled to allowances as determined by the President's order and have all the jurisdiction, powers and privileges of a Judge of that High Court.

However, they cannot be "deemed" as such. Further, both the retired judge and the President of India are required to consent to the appointment.

The detailed procedure can be found in the 1998 Memorandum of Procedure (MOP) for the appointment of High Court judges, prepared following the creation of the collegium system for appointing judges.

The MOP states that after the retired judge has consented to the appointment, the Chief Justice must forward name and details on the duration of the appointment to the state's Chief Minister.

The CM will pass this recommendation to the Union Law Minister, who will consult the Chief Justice of India before forwarding the recommendation and the CJI's advice to the Prime Minister of India. The PM will advise the President on whether to give her approval.

However, in the case of *Lok Prahari Through Its General Secretary S.N. Shukla IAS (Retd.) v. Union of India* (2021), the SC held that this recommendation "has to be routed through the collegium of the Supreme Court". This collegium includes the CJI and the two seniormost judges of the Supreme Court.

### **When can an ad hoc judge be appointed?**

The SC, in *Lok Prahari*, was considering measures to address pending cases before the courts and the vacancies in posts for HC judges. SC expressed concerns that Article 224A would encourage "inaction in making recommendations" for regular judge appointments.

The court thus passed directions on when the appointment process under Article 224A could be initiated.

Most importantly, the court held ad hoc judges can only be appointed when recommendations have not been made for less than 20% of the vacancies. This is so that Article 224A can be "resorted to only on the process having being initiated for filling up of the regular vacancies and awaiting their appointments."

The court also held that there has to be a "Trigger Point" for appointing judges under Article 224A, such as if the HC has vacancies of more than 20% of the sanctioned strength (excluding any proposals for appointment) and if more than 10% of the backlog of pending cases is over 5 years.

It further recommended that each Chief Justice should create a "panel" of retired and soon-to-retire judges for possible ad hoc appointments. Such judges should generally be appointed for 2-3 years, with two to five ad hoc judges in a HC.

## NEW E-COMMERCE GUIDELINES

Recently, the Bureau of Indian Standards(BIS) introduced draft guidelines aimed at enhancing self-governance in India's rapidly growing e-commerce sector.

These measures address increasing concerns over consumer protection and trust erosion, reflecting a commitment to ethical practices and transparency. Stakeholders are invited to provide feedback on these proposals, which are designed to create a more equitable environment for businesses and consumers alike.

### Draft Guidelines Overview

The draft titled 'E-commerce - Principles and Guidelines for Self-Governance' outlines a comprehensive framework.

It covers pre-transaction, transaction, and post-transaction phases, aiming to regulate the entire e-commerce lifecycle.

The BIS seeks to establish clear norms to curb unethical practices.

### Pre-Transaction Requirements

Platforms must verify sellers through thorough KYC processes.

Detailed product descriptions, transparent pricing, and safety information are mandatory.

For imported goods, seller details must be clearly displayed.

### Transaction Phase Regulations

Explicit consumer consent is required before finalising transactions.

Platforms must provide a review of transaction details and ensure secure payment options.

Full disclosure of associated charges is necessary to build trust.

### Post-Transaction Practices

Guidelines mandate effective mechanisms for handling refunds, returns, and grievances. Timely delivery updates and addressing counterfeit products are essential for improving consumer experience.

### Consumer Welfare Focus

Platforms must disclose seller information and provide accessible customer support. Compliance with data protection laws is emphasized, restricting personal data usage to disclosed purposes only.

### Transparency in Reviews

The guidelines prioritise authenticity in consumer reviews and ratings. Platforms are required to adhere to standards ensuring reliability and transparency in feedback.

### Survey

A LocalCircles survey revealed consumer dissatisfaction. Nearly half of respondents reported receiving incorrect products, denoting gaps in return and refund processes. Such insights tell the urgent need for the proposed measures.

### Market Context

The Indian e-commerce sector, valued at \$70 billion, is projected to grow. By 2030, the number of online shoppers is expected to reach 500 million, driven by increased internet access and smartphone adoption.

### Implementation and Compliance

E-commerce platforms must implement the guidelines to encourage a trustworthy ecosystem. Regular audits and seller reviews will help maintain compliance and ensure accurate product listings.

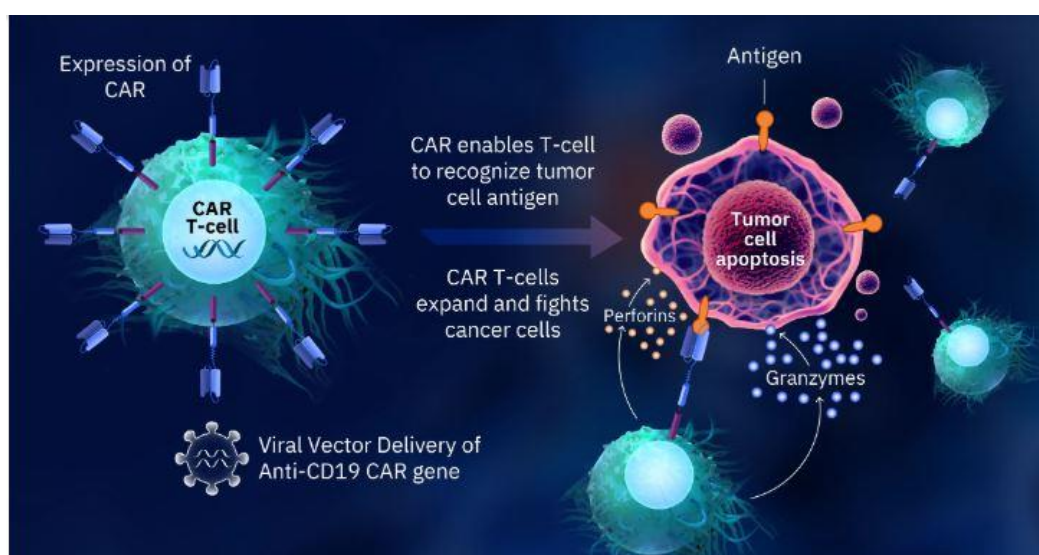
## QUARTEMI

Recently, India witnessed the launch of Qartemi, the country's first internationally licensed CAR-T cell therapy for adult B-cell Non-Hodgkin Lymphoma (B-NHL). This groundbreaking therapy offers new hope for patients suffering from aggressive blood cancers.

What is CAR-T Therapy?

CAR-T therapy is a type of immunotherapy. It involves modifying a patient's T-cells to better target and eliminate cancer cells. The process includes collecting T-cells, genetically modifying them, and reinfusing them into the patient.

This approach is known as a **living drug**.



Impact on Blood Cancer in India

India faces a rising burden of blood cancers, with approximately 120,000 new cases annually. Qartemi aims to address this issue by providing an effective treatment option for patients with relapsed or refractory B-NHL.

Future of Cancer Treatment

The launch of Qartemi is seen as a transformative step in personalised medicine. It combines advanced research with indigenous manufacturing, aiming to redefine cancer treatment standards in India.

What is Non-Hodgkin Lymphoma (NHL)?

It is a type of cancer that affects the **lymphatic system**, which is part of the immune system.

The lymphatic system includes organs, glands, vessels, and **lymph nodes** that help fight germs.

NHL occurs when germ-fighting lymphatic cells grow uncontrollably, forming tumors in various parts of the body.

NHL is a **broad group** of lymphomas with many subtypes.

**Common subtypes:**

**Diffuse Large B-cell Lymphoma (DLBCL)**

**Follicular Lymphoma**

NHL is distinct from **Hodgkin Lymphoma**, the other main type of lymphoma.



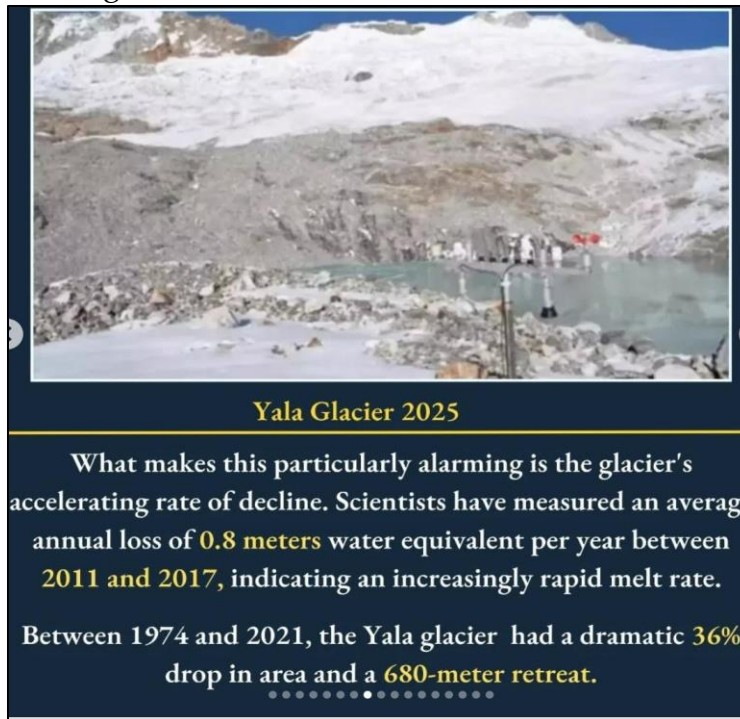
## YALA GLACIER

Yala glacier is expected to vanish by 2040s.

Background: –

It is the only glacier in the entire Himalayas to be included in the Global Glacier Casualty List, a project launched in 2024 through a collaboration between Rice University, University of Iceland, Iceland Glaciological Society, World

Meteorological Organization (WMO), World Glacier Monitoring Service, and UNESCO. It is categorised as “critically endangered”.



Key takeaways

Yala Glacier is situated in the Langtang region of the Himalayas, in Nepal, near the Nepal-Tibet border.

Retreat: The glacier has retreated by 680 meters between 1974 and 2021.

Area Reduction: It has experienced a 36% reduction in area during the same period.

Additional Information

The United Nations has designated 2025 as the International Year of Glaciers' Preservation, to emphasise the importance of glaciers and provide essential hydrological, meteorological and climate services to those dependent on them or affected by cryospheric processes.

Additionally, starting in 2025, March 21 will be observed annually as the World Day for Glaciers.

Another glacier in Asia which made it to the “critically endangered” category of the Global Glacier Casualty List is Dagu glacier in China, which is expected to disappear by 2030.

## GLOBAL PLASTIC ACTION PARTNERSHIP (GPAP)

The Global Plastic Action Partnership (GPAP) has recently reached a significant milestone by expanding its network to include 25 countries.



### Background:

With a combined population of over 1.5 billion people, the expansion highlights a growing global effort to address the urgent issue of plastic pollution. Seven new countries — Angola, Bangladesh, Gabon, Guatemala, Kenya, Senegal, and Tanzania — have joined this collaborative effort.

### Key takeaways

The Global Plastic Action Partnership (GPAP) is a multi stakeholder platform launched by the World Economic Forum in 2019.

Its primary goal is to accelerate the transition to a circular economy for plastics and tackle plastic pollution on a global scale.

### Objectives

**Reduce Plastic Pollution:** GPAP aims to reduce plastic waste leakage into the environment, particularly oceans.

**Promote Circular Economy:** Encourage the reuse and recycling of plastics to minimize waste and environmental impact.

Foster Collaboration: Bring together governments, businesses, and civil society to work towards common goals.

Key Initiatives

National Action Roadmaps: Tailored strategies for each participating country to address plastic waste management.

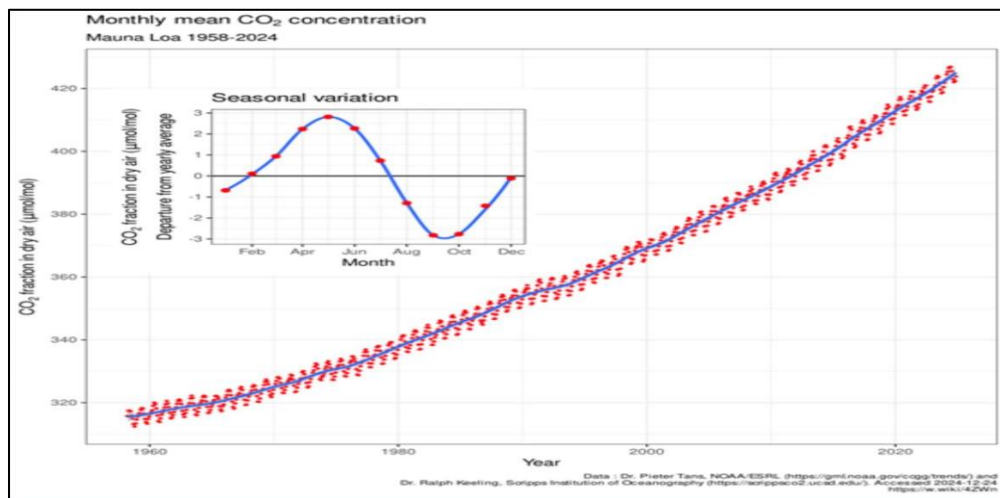
Investment Mobilization: GPAP has mobilized significant investments to support sustainable plastic management.

Job Creation: Focus on creating green jobs, especially for informal waste workers.

Awareness and Education: Raise awareness about the impact of plastic pollution and promote sustainable practices.

## KEELING CURVE

In 2024, the yearly average level of the greenhouse gas carbon dioxide (CO<sub>2</sub>) rose faster over the prior year than ever before in the 67-year-old Keeling Curve record.



Background: –

When researchers took the average readings for all 12 months in 2024, the average was 3.58 parts per million (ppm) higher than for 2023's average. That broke the record for largest jump set in 2016 of 3.41 ppm. In both instances, the climate pattern El Niño played a role.

Key takeaways

The Keeling Curve is a graphical representation of the concentration of carbon dioxide (CO<sub>2</sub>) in Earth's atmosphere over time.

Origin: Named after Dr. Charles David Keeling, who began continuous monitoring of atmospheric CO<sub>2</sub> levels in 1958 at the Mauna Loa Observatory in Hawaii.

The curve shows the steady increase in atmospheric CO<sub>2</sub> levels since 1958.

It also captures seasonal fluctuations caused by natural processes like photosynthesis and plant respiration.

CO<sub>2</sub> levels decrease during spring and summer as plants absorb CO<sub>2</sub> through photosynthesis, and increase during fall and winter due to plant decay.





കേരള സ്റ്റേറ്റ് സിവിൽ സർവീസ് അക്കാദമി



## Prelims Cum Mains (PCM)

ഡിഗ്രി / പിജി പഠനത്തോടൊപ്പം, ജോലിയോടൊപ്പവും പരിശീലനം  
(Regular & Weekend)

## Civil Service Foundation Course

ഹയർ സെക്കൻഡറി വിദ്യാർത്ഥികൾക്ക്



## Talent Development Course

ഹൈസ്കൂൾ വിദ്യാർത്ഥികൾക്ക്

വിശദ വിവരങ്ങൾക്കും അഡ്മിഷനും [kscsa.org](http://kscsa.org) എന്ന വെബ്സൈറ്റ് സന്ദർശിക്കുക

### PCM CENTRES

Trivandrum	<b>8281098864</b>
Kollam	<b>8281098867</b>
Ernakulam	<b>8281098873</b>
Palakkad	<b>8281098869</b>
Malappuram	<b>8281098868</b>
Kozhikode	<b>8281098870</b>
Kannur	<b>8281098875</b>

### OTHER CENTRES

Pathanamthitta	<b>8281098872</b>
Alappuzha	<b>8281098871</b>
Kottayam	<b>8281098863</b>
Idukki	<b>8281098863</b>
Thrissur	<b>8281098874</b>
Wayanad	<b>9496810543</b>
Kasaragod	<b>8281098876</b>

**CENTRE FOR CONTINUING EDUCATION KERALA**

ANATHARA LANE, CHARACHIRA KOWDIAR PO. THIRUVANANTHAPURAM KERALA. PIN - 695003

DIRECTORCCEK@GMAIL.COM

**KSCSA**

