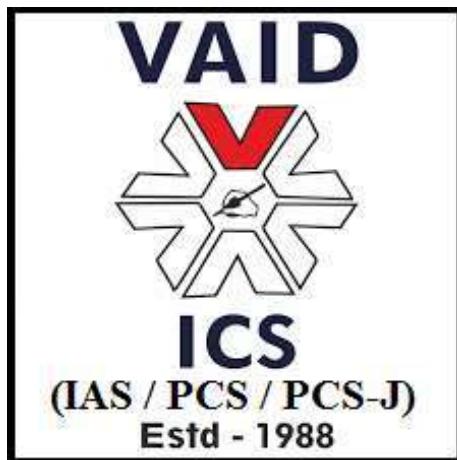


VAID ICS LUCKNOW



CURRENT AFFAIRS MAGAZINE

UPSC / UPPCS

December- January, 2026



B-36, SECTOR-C, ALIGANJ, LUCKNOW-226024

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Bureau of Police Research & Development (BPR&D)/DGP

Why in news ? the term was recently in news regarding the reform in police forces.

About Bureau of Police Research & Development (BPR&D):

The **Bureau of Police Research & Development (BPR&D)** is the apex "think tank" for policing in India. Established on **August 28, 1970**, it operates under the **Ministry of Home Affairs (MHA)** with the primary goal of modernizing the Indian police force and correctional services.

Core Objectives and Mission:

- **Vision:** To transform Indian police into a "SMART" force (Strict and Sensitive, Modern and Mobile, Alert and Accountable, Reliable and Responsive, Techno-savvy and Trained).
- **Mission:** To promote systematic study of police and prison problems and apply **Science and Technology** to law enforcement.
- **Motto:** "Promoting Excellence in Policing."

Key Divisions of BPR&D:

The Bureau is organized into several specialized divisions to handle the diverse needs of internal security:

- **Research & Correctional Administration:** Conducts studies on crime trends, juvenile delinquency, and prison reforms.
- **Training Division:** Standardizes training across India. It oversees the **Central Detective Training Institutes (CDTIs)** in cities like Jaipur, Hyderabad, and Kolkata.
- **Modernization Division:** Acts as an interface between police and the industry to test new weapons, gadgets, and protective gear.
- **National Police Mission (NPM):** Focuses on "Mission Mode" projects like community policing and gender sensitization.
- **Special Projects Division:** Handles critical data like the annual "**Data on Police Organizations**" (DoPO) report.

Major Functions:

1. **Modernization:** Reviewing and standardizing equipment such as arms, ammunition, riot control gear, and vehicles.
2. **Policy Advice:** Assisting the MHA in formulating national policies on internal security.

3. **Capacity Building:** Designing uniform training modules for all ranks, from Constables to IPS officers.
4. **Forensic Integration:** Coordinating with forensic labs to improve the quality of criminal investigations.

Current Updates & Initiatives (2025–2026):

A. Implementation of New Criminal Laws:

As of July 1, 2024, India moved to three new criminal laws: **Bharatiya Nyaya Sanhita (BNS)**, **Bharatiya Nagarik Suraksha Sanhita (BNSS)**, and **Bharatiya Sakshya Adhiniyam (BSA)**.

- **2025–26 Role:** BPR&D is the nodal agency for training millions of police personnel and judicial officers on these laws, focusing on **digital evidence** and **forensic-mandatory investigations**.

B. "One Nation, One Police Uniform":

Following the Prime Minister's vision, BPR&D is finalizing a **standardized uniform design** (color, fabric, and patches) for all State and UT police forces to ensure a singular identity for Indian police.

C. 5G and AI in Policing:

- **Vimarsh 2024-25:** A series of hackathons and projects focused on using **5G technology** for real-time surveillance, drone-based monitoring, and AI-driven crime prediction.
- **Counter-Drone Units:** Development of specialized SOPs and technology to neutralize "rogue drones" at borders and vital installations.

D. SMART Policing & Technology:

- **BHARATPOL Network:** A new initiative to link Indian police databases with INTERPOL's 19 types of databases for faster cross-border crime resolution.
- **Smart Police Stations:** BPR&D has released the **2025 Guidelines** for "Facelifting of Police Stations" to make them more citizen-friendly and technologically integrated.

E. Left-Wing Extremism (LWE) Goal:

- In line with MHA's target, BPR&D is providing specialized tactical research to help make India Naxal-free by **March 31, 2026**.

Key Publications

- **Indian Police Journal (IPJ):** Flagship quarterly journal on policing.
- **Data on Police Organizations (DoPO):** The most authentic statistical record of Indian police infrastructure.
- **Vigilant India:** A fortnightly magazine highlighting recent achievements in internal security.

How Director General of Police (DGP) is appointed?

The appointment of a State Director General of Police (DGP)—also known as the Head of Police Force (HoPF)—is a highly structured process. To prevent political interference, the procedure is governed by the Supreme Court's landmark **Prakash Singh Case (2006)** guidelines and updated **UPSC 2023/2025** rules.

Preparation of the Eligibility List:

The State Government must identify all eligible senior IPS officers from its cadre.

- **Rank:** Officers must be of the rank of **Additional Director General (ADG)** or higher.
- **Service:** Traditionally, 30 years of service was required, but recent UPSC amendments have reduced this to **25 years** to broaden the candidate pool.
- **Residual Tenure:** Officers must have at least **6 months of service left** before retirement at the time of their empanelment.

Role of the UPSC (The Empanelment):

The State does not choose the DGP directly. Instead, it sends the names of eligible officers to the **Union Public Service Commission (UPSC)** at least three to six months before the current DGP retires.

- **The Committee:** A high-level committee at the UPSC—comprising the **UPSC Chairman**, Union Home Secretary, State Chief Secretary, the outgoing State DGP, and a Chief of a Central Police Organization—evaluates the candidates.
- **Criteria:** Selection is based on **merit**, seniority, a "very good" service record, and a wide range of experience (e.g., law and order, intelligence, or central deputation).
- **The Shortlist:** The UPSC selects a **panel of three officers** and sends this list back to the State Government.

Final Selection by the State:

From the three names suggested by the UPSC, the State Government (Cabinet/Chief Minister) has the authority to pick **any one officer** to be the DGP.

Fixed Tenure Rule:

Once appointed, the DGP is entitled to a **minimum tenure of 2 years**, regardless of their actual date of retirement.

- This is designed to ensure the officer can work independently without fear of being transferred or removed by politicians for not "following orders."
- **Removal:** A DGP can only be removed before 2 years in exceptional cases (e.g., conviction in a criminal case, corruption, or medical incapacity), and usually in consultation with the State Security Commission.

Cocaine and "Narco-Terrorism"/ Fentanyl and Synthetic Opioids

Why in News ? The U.S. Department of Justice and the Trump administration have specifically targeted the Maduro government for its alleged role in the **cocaine** trade.

- **Type of Drug: Cocaine.** The U.S. claims Venezuela is a "major drug-transit country" for Colombian cocaine moving toward the U.S. and Europe.
- **The "Cartel of the Suns":** The U.S. alleges that Nicolás Maduro leads a criminal network known as the **Cartel de los Soles** (Cartel of the Suns), comprised of high-ranking Venezuelan military and political officials.
- **Key Claims:**
 - **Strategic Alliance:** The U.S. claims Maduro partnered with the FARC (Colombian rebels) to use cocaine as a "weapon" to "flood" the United States.
 - **Diplomatic Cover:** The 2026 indictment alleges Maduro used **diplomatic passports** and state aircraft to repatriate drug proceeds from Mexico to Venezuela.
 - **Volume:** U.S. reports estimate that **200 to 250 metric tons** of cocaine are trafficked through Venezuela annually.

Mexico: Fentanyl and Synthetic Opioids:

While Venezuela is linked to cocaine transit, the U.S. identifies Mexico as the primary source of the **fentanyl** crisis.

- **Type of Drug: Fentanyl and Methamphetamine.**
- **Key Claims:**
 - **Production Hub:** The DEA asserts that fentanyl is produced overwhelmingly in **clandestine labs in Mexico** using precursor chemicals sourced primarily from **China**.
 - **Cartel Dominance:** The **Sinaloa Cartel** and the **Jalisco New Generation Cartel (CJNG)** are identified as the main organizations smuggling these synthetic drugs across the southwest border.
 - **The "Intolerable Alliance":** The Trump administration has claimed an "intolerable alliance" exists between the Mexican government and organized crime, asserting that cartels effectively "run" the country.

International Body :

UNODC (The Operational Body):

The United Nations Office on Drugs and Crime (UNODC) is the main office responsible for "on-the-ground" work.

- **Role:** It helps countries implement drug laws and monitors the global drug situation.
- **Key Action:** It publishes the **World Drug Report** every year and assists governments in fighting drug trafficking, money laundering, and terrorism.



CND (The Policy-Making Body):

The Commission on Narcotic Drugs (CND) is a group of 53 member nations that makes the "rules."

- **Role:** It decides which drugs should be banned or controlled internationally.

- **Key Action:** If a new synthetic drug appears, the CND votes on whether to add it to the "schedules" (the list of illegal substances) based on advice from the **World Health Organization (WHO)**.

INCB (The Monitoring Body):

The International Narcotics Control Board (INCB) is an independent, "quasi-judicial" body.

- **Role:** It acts as a "watchdog" to ensure countries are following the UN drug treaties.
- **Key Action:** It monitors the legal trade of medicines (to make sure they aren't stolen for illegal use) and can "name and shame" countries that fail to control drug production within their borders.

The Three Main International Drug Treaties:

These bodies get their power from three major international agreements that almost every country in the world has signed:

1. **Single Convention on Narcotic Drugs (1961):** Bans the use of plants like poppy (opium), coca, and cannabis for anything other than medicine or science.
2. **Convention on Psychotropic Substances (1971):** Controls synthetic drugs like LSD, MDMA, and amphetamines.
3. **Convention Against Illicit Traffic (1988):** Focuses on catching traffickers, stopping money laundering, and controlling the chemicals used to *make* drugs (precursors).

The Role of Interpol:

While the UN makes the rules, **INTERPOL** (International Criminal Police Organization) is the body that helps national police forces coordinate **arrests and seizures** across borders. They share "Purple Notices" to alert police about new smuggling methods.

About Fentanyl and methamphetamine:

Fentanyl and methamphetamine are the two most prominent illicit drugs driving the current global drug crisis. Though pharmacologically opposite in nature—one a depressant opioid and the other a stimulant—they are increasingly being used and trafficked together, creating a highly lethal combination often termed a "deadly cocktail."

Fentanyl: The Synthetic Opioid Threat:

Nature: Synthetic opioid (central nervous system depressant)

Potency: 50 times stronger than heroin and 100 times stronger than morphine

Effects: Pain relief, euphoria, respiratory depression

Risk: Very small dosage can cause overdose and death

Trend: Often mixed with heroin, cocaine, or counterfeit pills without users' knowledge

Methamphetamine: The Stimulant Menace:

Nature: Synthetic stimulant

Effects: Increased alertness, energy, euphoria, reduced appetite

Health Impact: Severe addiction, psychosis, cardiovascular damage

Production: Cheap to manufacture, long shelf-life, easy to traffic

Spread: Rapid expansion across North America, Asia, and parts of Africa

First Loan Default Guarantee (FLDG)

Why in News ? The term was recently used in a article.

What is FLDG? First Loan Default Guarantee (FLDG) is a lending model serviced between digital-lending fintechs and their partner banks and NBFCs.

- Under these agreements, the fintech originates a loan and promises to compensate the partners up to a pre-decided percentage in case customers fail to repay.
- The bank/NBFC partners lend through fintech but from their own books.

RBI Framework:

- Regulated Entities (REs) shall ensure that the total amount of default loss guarantee (DLG) cover on any outstanding portfolio which is specified upfront shall not exceed 5% of the amount of that loan portfolio.
- In the case of implicit guarantee arrangements, the **DLG Provider** shall not bear a performance risk of more than the equivalent amount of **5% of the underlying loan portfolio**.
- The RE shall invoke DLG within a maximum overdue period of 120 days, unless made good by the **borrower** before that.
- In terms asset quality, recognition of individual loan assets in the portfolio as NPA and consequent provisioning shall be the responsibility of the RE as per the extant asset classification and provisioning norms irrespective of any DLG cover available at the portfolio level. The amount of DLG invoked shall not be set off against the underlying individual loans. Recovery by the RE, if any, from the loans on which DLG has been invoked and realised, can be shared with the DLG provider in terms of the contractual arrangement.
- Any DLG arrangement shall not act as a substitute for credit appraisal requirements and robust credit underwriting standards need to be put in place irrespective of DLG cover.

Benefits:

- **Expands the customer base of traditional lenders** but relies on the fintech's underwriting capabilities.
- **Enhances deeper partnerships and collaboration** between legacy institutions (Banks, regulated entities, NBFCs) and new age fintechs - democratises access to credit and fuel growth for the unserved and underserved.
- **Strengthens credit penetration** and boosts the digital lending ecosystem.
- **Promotes more transparency and discipline** in the digital lending environment.
- **Widens the scope of resolution** of stressed assets.

Mule Hunter

Why in News ? The term was recently used by the RBI on the issues & challenges of digital fraud.

The Reserve Bank of India (RBI) has introduced *MuleHunter.AI*, an advanced AI-based tool designed to help financial institutions identify mule bank accounts.

- **Objective:** This initiative aims to combat digital frauds and strengthen bank security by identifying accounts used to launder illicit funds.

About MuleHunter.AI

- The *MuleHunter.AI* tool was developed by the RBI Innovation Hub (RBIH) in Bengaluru using **artificial intelligence (AI)** and **machine learning (ML)** technologies.
- *MuleHunter.AI* utilizes advanced ML algorithms that can analyze vast datasets more accurately and quickly, improving detection efficiency.

Advantages:

- **Advantages over Traditional Systems:** High false positives and slow processing times, leading to missed detections.
- **Improved Accuracy and Speed:** The AI/ML model is capable of predicting suspected mule accounts with greater precision and faster than conventional systems. This enables banks to identify mule accounts more effectively, thereby reducing digital frauds.
- **Wider Detection Capabilities:** The system can analyze transaction and account details, leading to the identification of more mule accounts within a bank's system.

What is a Mule Account?

Definition: A mule account is a bank account used by criminals to facilitate the transfer and laundering of illicit funds.

- These accounts are often set up by unsuspecting individuals, either lured by fraudulent schemes or coerced into participating.

Challenges with Mule Accounts:

- **Anonymity:** These accounts are highly interconnected, making it difficult to trace and recover the laundered money.
- The Indian government recently froze around 4.5 lakh mule accounts over the past year, highlighting the urgency of addressing this issue.
- **Scale of the Problem:** Digital frauds involving mule accounts have become a significant challenge for the banking industry and the economy.
- Some large banks report fraudulent transactions amounting to Rs 400-500 crore every month.
- **Undermining Trust:** Mule accounts, often used to launder proceeds of cybercrimes, undermine public trust in the financial system
- **Financial Impact:** These illicit activities put a strain on the banking sector and have broader implications for national security and economic stability.

About the RBIH:

- The Reserve Bank Innovation Hub (RBIH) is a wholly-owned subsidiary of the RBI, established in Bengaluru to foster financial innovation for frictionless finance for all Indians, focusing on **Reg Tech, AI/ML, blockchain**, and digital currency, by creating an ecosystem for startups, banks, and academia to build new financial infrastructure and improve access for low-income groups.
- It acts as a central point for developing tech solutions, running regulatory sandboxes, and promoting financial inclusion through collaborations and challenges.

NIDMS

Why in News? The Union Home Minister, Amit Shah, inaugurated the National Improvised Explosive Device Data Management System (NIDMS) on January 9, 2026. This platform is a landmark initiative in India's internal security infrastructure, consolidating nearly three decades of blast-related data.

The launch of NIDMS marks a shift from fragmented data storage to a unified, AI-driven national security grid. It addresses the long-standing challenge of "data silos" within the

Home Ministry, providing a single-window platform for investigating agencies to counter terrorism more effectively.

About NIDMS (National IED Data Management System):

- **Definition:** A secure national digital platform designed for the standardized collection, integration, and sharing of IED-related data.
- **Scope:** It contains detailed records of every bomb blast in India since 1999.
- **Headquarters:** Located at the National Security Guard (NSG) garrison in Manesar, Haryana.
- **Accessibility:** Accessible to State Police, Central Armed Police Forces (CAPFs), National Investigation Agency (NIA), and other anti-terror organizations.

Key Features and Key Points:

1. AI-Based Predictive Analysis:

The platform utilizes advanced **Artificial Intelligence (AI) software** to analyze vast amounts of data. This allows agencies to perform "predictive analysis," identifying potential future threats based on historical patterns.

2. The "Signature Link" Functionality:

NIDMS can establish technical links between different incidents.

- **Circuit Analysis:** It can identify if the same type of delayed circuit timer or explosive was used in two different cities years apart.
- **Example:** The link between the March 2024 Rameswaram cafe blast and the 2022 Mangaluru blast was identified through similar circuit methods.

3. Modus Operandi (MO) Tracking:

It tracks the "how" of an attack—the specific methods, materials, and logistical signatures used by different terror modules—helping investigators build a comprehensive profile of various outfits.

4. Integration of Silos:

Previously, data was scattered across various case files and regional departments. NIDMS integrates these into a **"Single-Click Access Window"** for real-time investigation.

Significance for Internal Security:

- **Standardization:** It enforces a uniform format for reporting post-blast analyses across all Indian states.
- **Inter-Agency Coordination:** By providing shared access to the NSG's National Bomb Data Centre (NBDC) insights, it fosters better synergy between state police and central agencies.

- **Strategic Policy Formulation:** Analyzing trends in explosions allows the government to formulate more effective counter-terrorism strategies and tighter regulations on explosive precursors.

Conclusion:

The NIDMS is a critical milestone in India's journey toward a "Zero Tolerance Policy" against terrorism. By bridging the gap between technology and traditional investigation, it ensures that data becomes a proactive tool for prevention rather than just a reactive tool for record-keeping.

The Anusandhan National Research Foundation

Why in News ? The Anusandhan National Research Foundation was recently in news in an article that discusses the current status of higher education.

The Anusandhan National Research Foundation is an apex body to provide "high-level strategic direction" to scientific research in the country. The National Research Foundation will play a pivotal role in seeding, nurturing and promoting research, innovation and development across universities, colleges, research institutions, and R&D laboratories.

Anusandhan National Research Foundation Act, 2023:

The Anusandhan National Research Foundation Act of 2023 provides for the establishment of the Anusandhan National Research Foundation (NRF).

- It also repealed the **Science and Engineering Research Board (SERB)** established by an **act of Parliament in 2008** and subsumed it into NRF.
- **NRF**, as an **apex body**, **aims** to provide "high-level strategic direction for research, innovation and entrepreneurship", and enhance "India's national research infrastructure, knowledge enterprise, and innovation potential, for scientific pursuit".

What is National Research Foundation?

In 2005, the Science Advisory Council to the Prime Minister recommended the formation of a **National Science and Engineering Research Foundation**. It was approved by the then PM **Manmohan Singh**. In 2008, it was renamed the Science and Engineering Research Board (SERB).

The National Research Foundation (NRF), an apex body to provide high-level strategic direction of scientific research in the country in accordance with the recommendations of the National Education Policy (NEP), will be established at a **cost of 50,000 crore** over the period **2023-28**.

- **Goals:** To increase private sector contributions to research in India and to ensure that a larger portion of government funds go to state universities and colleges.
- The **Department of Science and Technology (DST)** will be NRF's administrative department.

Functions of National Research Foundation:

National Research Foundation will provide strategic direction for research, innovation, and entrepreneurship in the fields of natural sciences, engineering and technology, environmental and earth sciences, health and agriculture, and scientific and technological interfaces of humanities and social sciences.

Functions of NRF include:

- Preparing the roadmap for short, medium, and long-term research and development.
- Facilitating and funding the expansion of Research and Development and related infrastructure in universities, colleges, and research institutions.
- **Funding competitive peer-reviewed** grant proposals to eligible individuals.
- Assisting in the transformation of research into capital-intensive technology.
- Enhancing India's role and engagement in significant national and **global areas**.
- **Encouraging private and public sector** entities to invest in the foundation.
- Carry out **annual surveys** of scientific research, outcomes, and spending.

BIPOC (Black, Indigenous, and People of Color)

Why in News ? The terms BIPOC & IPLC were recently in news .

While both terms—**BIPOC** and **IPLC**—revolve around marginalized groups and identity, they operate in very different spheres. **BIPOC** is a term centered on **social justice and racial dynamics**, whereas **IPLC** is a technical term used in **global environmental and human rights policy**.

BIPOC (Black, Indigenous, and People of Color):

This acronym emerged primarily in North America (USA and Canada) to shift the conversation around racial equity.

- **Focus: Racial Justice.** It highlights the specific experiences of systemic racism.
- **The "BI" logic:** It places **Black** and **Indigenous** people at the front to acknowledge that while all "People of Color" face prejudice, Black and Indigenous folks have faced unique, historically rooted structural erasure (slavery and genocide/colonization).

- **Usage:** Used in social activism, corporate diversity (DEI), and academic discussions about race.
- **Scope:** Includes anyone who does not identify as White, with a specific emphasis on the unique struggles of the Black and Indigenous experience.

IPLCs (Indigenous Peoples and Local Communities):

This is an international legal and environmental category used by organizations like the United Nations (UN) and the IPCC.

- **Focus: Stewardship and Land Rights.** It recognizes people based on their relationship with the environment and traditional knowledge.
- **The "LC" logic:** The term "Local Communities" is added to "Indigenous Peoples" to include groups who may not meet the strict legal definition of "Indigenous" but have lived on and protected their land for generations (e.g., certain forest-dwelling communities in India or traditional fishing villages).
- **Usage:** Used in international treaties, climate change negotiations (COP), and biodiversity conservation.
- **Scope:** It is less about "race" and more about **land tenure, traditional lifestyles, and ecological knowledge.**

Key Comparison Table:

Feature	BIPOC	IPLCs
Primary Goal	Combatting racism and white supremacy.	Securing land rights and protecting nature.
Identity Base	Race/Ethnicity (Visual and social identity).	Relationship to Land (Traditional knowledge).
Common Context	Urban settings, social media, workplaces.	Remote forests, coastal areas, UN summits.
Geographic Origin	Western (US/Canada) context.	Global (International Law) context.

Feature	BIPOC	IPLCs
Key Example	A Black doctor in New York or an Indigenous artist in Toronto.	A Gond tribal community in India or a traditional farming village in the Amazon.

Why the distinction matters?

A person can be both. For example, an Indigenous person in the US belongs to the BIPOC community in a discussion about police reform, but they are part of the IPLC group when discussing their tribe's rights to manage a national forest.

The main difference is that BIPOC is about *who you are* in a racialized society, while IPLC is about *how you live* and your right to your ancestral territory.

Ethylene Glycol (EG)

Why is this in the news? In January 2026, the Telangana Drug Control Administration (DCA) issued an urgent "stop-use notice" for a specific batch of **Almont-Kid Syrup**. This news is critical because the syrup, intended for children, was found to be contaminated with a highly toxic chemical.

The primary reason for this alert is the discovery of **Ethylene Glycol (EG)** in Almont-Kid Syrup (Batch No. AL-24002). This syrup is a pediatric formulation containing *Levocetirizine Dihydrochloride* and *Montelukast Sodium*, commonly used to treat allergies, hay fever, and congestion in children.

The presence of EG is a "red alert" because it is a lethal industrial solvent. Its inclusion in medicinal syrups has historically been linked to mass tragedies involving acute kidney failure and death in children globally.

About Central Drugs Standard Control Organisation (CDSCO):

The CDSCO is India's national regulatory body for pharmaceuticals and medical devices, functioning under the **Ministry of Health and Family Welfare**.

- **Role:** It is the central authority responsible for the approval of new drugs, clinical trials, and laying down standards for drugs.

- **Coordination:** While State Drug Control Administrations (like Telangana's DCA) handle the manufacture and sale within their borders, the CDSCO ensures uniformity in enforcement across the country.
- **Testing:** In this specific case, the **CDSCO East Zone (Kolkata)** laboratory was the one that tested and flagged the contaminated sample, triggering the nationwide and state-level alerts.

Establishment & Legal Framework:

- **Act:** It is established under the **Drugs and Cosmetics Act, 1940**.
- **Rules:** Its functions are governed by the **Drugs and Cosmetics Rules, 1945**.
- **Evolution:** While the Act dates back to the British era, CDSCO has evolved into a modern regulatory body through various amendments, including the **Medical Device Rules, 2017/2020** and the recent 2023 revision of **Schedule M** (to align with global WHO-GMP standards).

Core Roles and Responsibilities:

The CDSCO operates as the "Central Authority," while State Drug Controllers handle local manufacturing and sales. Its primary roles include:

1. **Approval of New Drugs:** Evaluating the safety and efficacy of new chemical entities before they enter the market.
2. **Clinical Trials:** Regulating and providing permissions for human clinical trials in India.
3. **Import Control:** Monitoring the quality of all drugs imported into the country at various ports.
4. **Laying Standards:** Defining the quality standards for drugs, cosmetics, and medical devices.
5. **Central Licensing:** Acting as the authority for specialized categories like **Vaccines, Blood Products, and Large Volume Parenterals (IV Fluids)**.
6. **Coordination:** Advising State Drug Control Organizations to ensure uniform enforcement of drug laws across all Indian states.

About Ethylene Glycol (EG):

Ethylene Glycol is a colorless, odorless, and sweet-tasting organic compound.

- **Industrial Use:** It is primarily used as an **antifreeze** and coolant in automobiles and as a solvent in industrial processes (paints, inks, and plastics).
- **Why it enters medicine:** It is sometimes used by unscrupulous manufacturers as a cheap, illegal substitute for safe solvents like *Glycerin* or *Propylene Glycol*.

- **Toxicity:**
 - **Metabolism:** When ingested, the body breaks it down into toxic acids (like glycolic and oxalic acid).
 - **Health Impact:** It causes **Acute Kidney Injury (AKI)**, metabolic acidosis, and can damage the central nervous system and heart.
 - **Danger to Children:** Because of its sweet taste, children may consume it without resistance. Even small amounts can lead to coma or death within days if not treated immediately.

Southern Transitional Council (STC)

Why in news ? The Southern Transitional Council (STC) in Yemen has recently announced a new Constitution for the “**State of South Arabia**”.

Nearly a decade since its formation, the STC appears closer than ever to achieving its goal of a separate southern Yemen, — or “**South Arabia**” as it calls the region — independent from the North. However, the subsequent days revealed the group’s struggle to maintain its gain

Conflict in Yemen

Houthi rebels
 Separatists of Southern Transitional Council (STC)
 Pro-government forces



It is a **political and military organisation** based in southern Yemen. It seeks **autonomy or full independence for South Yemen**, reviving the territorial identity that existed before Yemen's unification in 1990.

Formation and Background:

- The STC was **formed in 2017** amid growing dissatisfaction in southern Yemen with the central government based in Sana'a.
- It emerged from long-standing **southern grievances**, including political marginalisation, unequal resource distribution, and lack of representation after unification.
- Historically, South Yemen existed as the **People's Democratic Republic of Yemen**, the only Marxist state in the Arab world, until it unified with North Yemen in 1990.

Political Objective:

- The primary goal of the STC is **self-rule for southern Yemen**, either through:
 - A **federal arrangement with extensive autonomy**, or
 - **Complete secession** and restoration of an independent southern state.
- The STC has announced intentions to pursue **a referendum on independence** in the future.

Territorial Control:

- The STC exercises control over key southern regions, including:
 - **Aden** (de facto southern capital)
 - **Lahj**
 - Parts of **Abyan** and surrounding governorates
- These areas are strategically significant due to their **ports, coastline, and proximity to global maritime routes**.

Military Wing and Capabilities:

- The STC maintains armed units often referred to as **Southern Forces**.
- These forces are well-trained and have experience in urban warfare and counter-insurgency operations.
- The STC has frequently clashed with forces loyal to the internationally recognised Yemeni government.

External Support:

- The STC is widely understood to be **backed by the United Arab Emirates**.
- UAE support has included:
 - Military training

- Logistical and financial assistance
- Political backing in regional power calculations
- This support has made the STC a **key non-state actor** in the Yemeni conflict.

Role in the Yemen Conflict:

- The STC is opposed to the Saudi-backed Presidential Leadership Council (PLC), despite both being against the Houthis.
- This has created a **multi-sided conflict**, where anti-Houthi forces are themselves divided.
- STC advances into oil-rich and coastal regions have intensified tensions with Saudi Arabia.

Strategic Importance:

- STC-controlled areas provide **access to the Gulf of Aden and the Bab el-Mandeb Strait**, a critical chokepoint for global trade.
- Control over these regions gives the STC **geopolitical leverage** disproportionate to its size.

Underwater Domain Awareness (UDA)

Why in News? The term was recently in news.

What is UDA?

Underwater Domain Awareness (UDA) refers to the ability to monitor, detect, and analyze underwater activities in oceans, coastal waters, and inland waterways. It involves the use of advanced sonar, sensors, autonomous systems, and artificial intelligence to track submarines, underwater drones, mines, and other naval threats.

Why is UDA Important?

- **National Security** – Helps in detecting enemy submarines and potential underwater threats.
- **Maritime Surveillance** – Ensures monitoring of **strategic sea routes, choke points, and Exclusive Economic Zones (EEZs)**.
- **Environmental Monitoring** – Tracks underwater pollution, marine biodiversity, and climate-related changes.
- **Underwater Resource Management** – Supports the exploration of deep-sea minerals, oil, and gas reserves.

- **Disaster Management** – Assists in monitoring tsunamis, underwater earthquakes, and oil spills.

The Polar Silk Road

Why in News ? The topic was recently in news regarding the USA & Green land dispute . The USA president has expressed his concern over the China's enflunce & its Polar Silk Road initiatives.

What Is the Polar Silk Road (PSR)?

- The Polar Silk Road (also called the Arctic Silk Road) is an infrastructural-connectivity project by China to integrate Arctic sea routes (especially the **Northern Sea Route**, along Russia's Arctic coast) into its Belt and Road / maritime projection strategy.
- In its 2018 "Arctic Policy," China formally identified the Arctic as a domain of interest, asserting itself as a "Near-Arctic State" and announced to engage in shipping, resource development, scientific research, and governance.

How is the Arctic Becoming Navigable?

Rapid Ice Melt and Warming

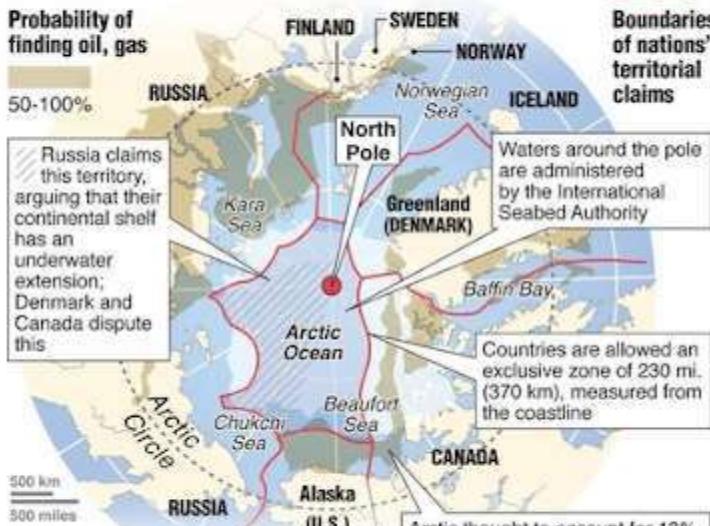
- The Arctic is warming at about **4 times the global average**, causing a steep decline in summer sea ice extent and thickness.
- Some Arctic sea lanes, especially parts of the Northern Sea Route (NSR), are becoming navigable for a larger fraction of the year (summer + parts of spring/fall).

Technological & Logistical Advances:

- Better icebreaking ships, hull designs, navigation aids, satellite mapping, and hydrographic surveys reduce risks. China mentions hydrographic surveys and navigation capacity in its white paper.
- Coordinated efforts in ice monitoring, satellite reconnaissance, and weather forecasting improve route planning.

Rush is on toward resource-rich Arctic

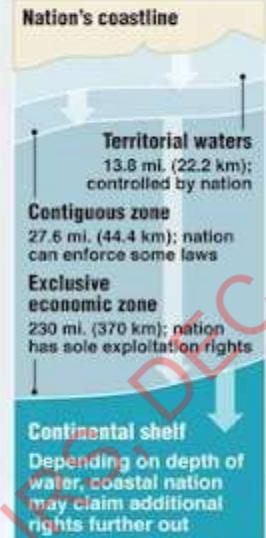
The Arctic holds an estimated 90 billion barrels of undiscovered oil, so as melting sea ice makes the region more accessible, nations are rushing to stake claims to those resources.



Source: U.S. Geological Survey
International Bathymetric Chart
of the Arctic Ocean, Canadian
Hydrographic Service, BBC
Graphic: Robert Dorrell

International rules about territorial waters

A U.N. treaty adopted in 1994 governs national rights:

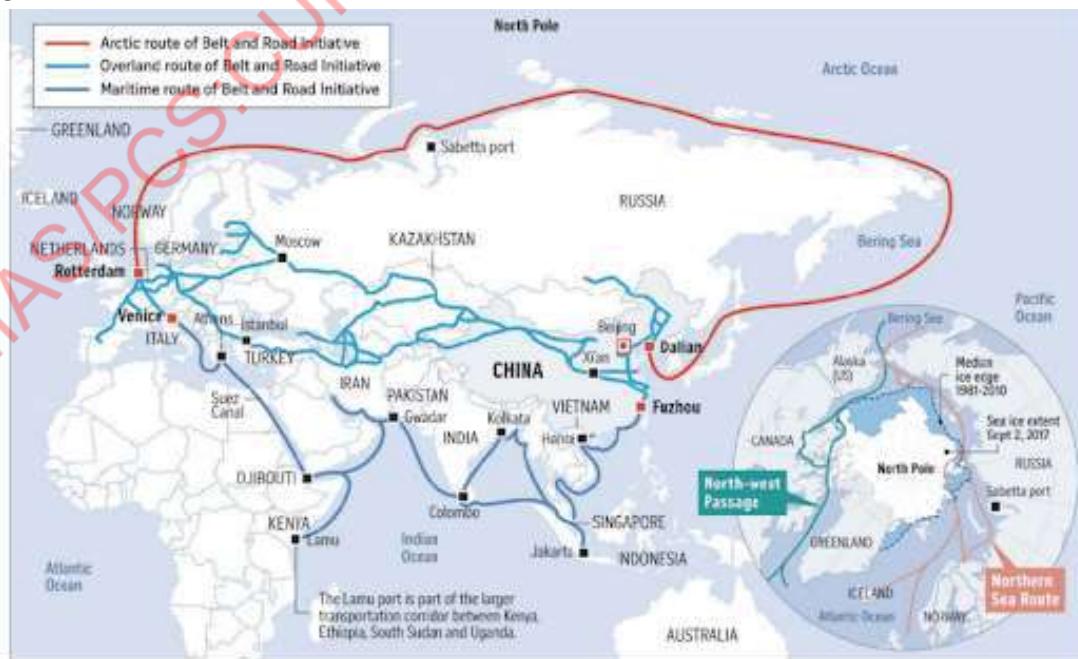


NOTE: The U.S. signed the treaty, but Congress has never ratified it.

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Political & Commercial Push

- Trial voyages are being undertaken to test feasibility, build experience, and signal operational intent.
- China and Russia are exploring infrastructure, port upgrades, and logistical support along Arctic coasts.



What Makes the Polar Silk Road Significant for China?

Shorter Trade Routes and Economic Efficiency:

- The Arctic route can reduce the distance (and hence time and fuel) between East Asia and Europe compared to routes through the **Suez Canal or via the Indian Ocean**.
- This gives China an alternative to reliance on chokepoints (e.g. Strait of Malacca, Suez) and allows more flexibility in supply chains.

Resource Access & Energy Security:

- The Arctic is believed to hold significant reserves of oil, gas, minerals, and non-living resources.
- China has stakes in Russian Arctic energy projects (e.g. Yamal LNG) and is interested in deeper integration.

Futuristic Marine and Space Biotechnology

Futuristic space and marine biotechnology research focuses on using underexplored environments, such as the deep oceans and outer space, to develop new biological knowledge, materials, and manufacturing processes.

- Marine biotechnology involves studying **microorganisms, algae, and other marine life** to discover bioactive compounds, enzymes, biomaterials, food ingredients, and biostimulants. These organisms have evolved to survive high pressure, salinity, low light, and nutrient-poor conditions. Space biotechnology, meanwhile, studies how microbes, plants, and human biological systems behave under microgravity and radiation.

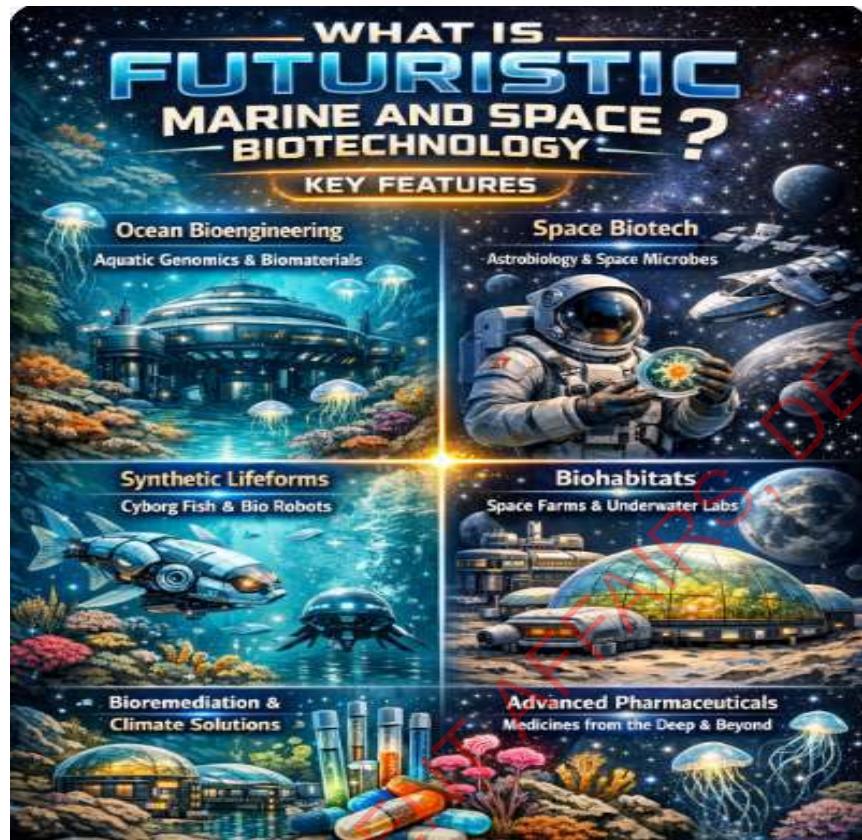
Why does India need them?

India's long coastline of over **11,000 km** and a vast **Exclusive Economic Zone of over 2 million sq. km** give it access to rich marine biodiversity and biomass.

- Yet its share of global marine outputs remains low, indicating significant untapped potential. Investing in marine biomanufacturing can unlock new sources of food, energy, chemicals, and biomaterials, while reducing pressure on land, freshwater, and agricultural systems.

Similarly, **space biotechnology is critical for India's long-term ambitions** in space exploration, enabling **safe food production, human health management**, and biological manufacturing in

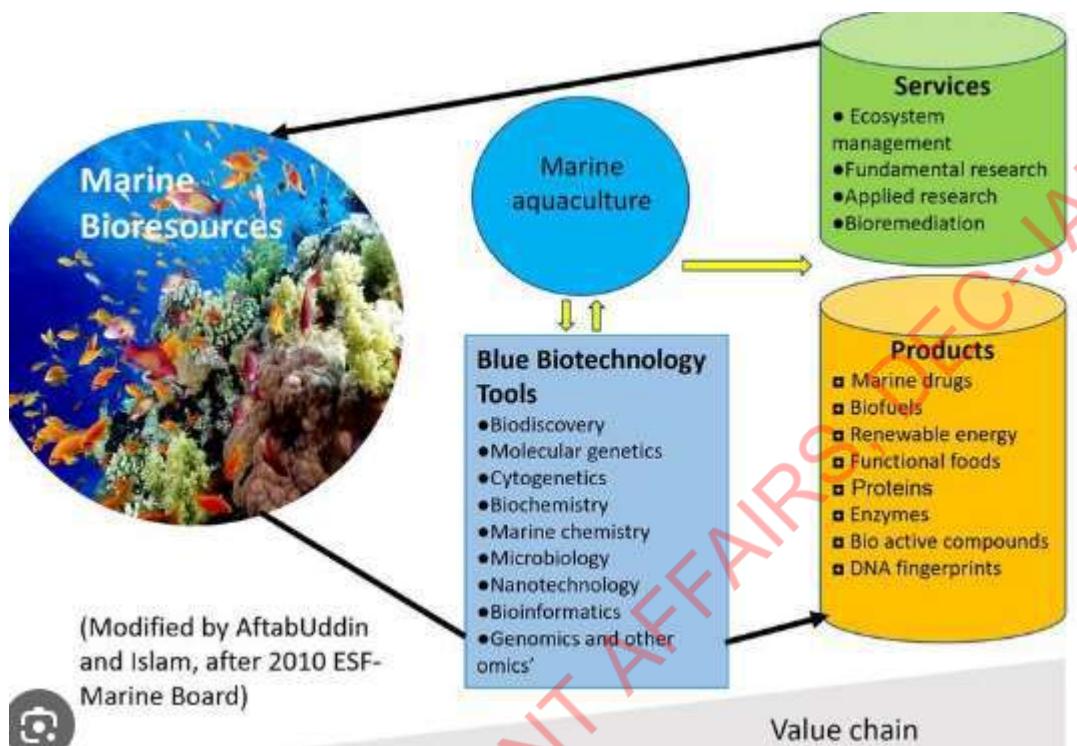
extreme environments. Together, futuristic marine and space biotechnology can position India as a leader in biomanufacturing.



Where does India stand today?

- India's domestic production of marine biomass such as seaweed remains modest, with an annual cultivated output of around 70,000 tonnes. As a result, India continues to import seaweed-derived components such as agar, carrageenan, and alginates for use in food, pharmaceuticals, cosmetics, and medical applications.
- Targeted initiatives under the **Blue Economy agenda**, the **Deep Ocean Mission**, and, more recently, the **BioE3** are pushing the sector toward integrated marine biomanufacturing, linking cultivation, extraction, and downstream applications.
- A small number of private players, such as **Sea6 Energy** and **ClimaCrew**, along with ICAR-Central Marine Fisheries Research Institute and state-led initiatives such as the **Vibrant Gujarat Regional Conference**, are exploring pathways to scale marine biomass into high-value ingredients, and bio-based products.
- In space biotechnology, ISRO's microgravity biology programme is conducting experiments on microbes, **algae**, and **biological systems** to study food production, life-

support regeneration, and human health in space. However, private-sector participation is limited as these technologies are still nascent.



What are other countries doing?

- The European Union funds large-scale programmes on marine bioprospecting, algal-based biomaterials, and bioactive compounds, supported by shared research infrastructure such as the **European Marine Biological Resource Centre**.
- China has rapidly expanded seaweed aquaculture and marine bioprocessing. In space biotechnology, the U.S. leads through NASA and the International Space Station, where research on microbial behaviour, protein crystallisation, stem cells, and closed-loop life-support systems informs drug discovery, regenerative medicine, and long-duration human missions.

What next?

Marine and space biotechnology remain relatively unexplored frontiers, where early movers are likely to gain lasting strategic and technological advantages. The primary risk lies in slow and fragmented progress in research and development. A dedicated roadmap that defines timelines and outcomes for marine and space biotechnology would help channel resources more effectively.

Tropical Forest Forever Facility (TFFF)

The Tropical Forest Forever Facility (TFFF) initiative was launched on the sidelines of the COP30 climate summit in Belém, Brazil, aiming to raise and invest USD 125 billion to conserve tropical forests.

India has joined the Brazil-led TFFF as an observer, reaffirming its commitment to multilateral climate action under the Paris Agreement.

What is the Tropical Forest Forever Facility (TFFF) Initiative?

About:

TFFF is a permanent, self-financing investment fund aimed at conserving tropical forests. It will reward up to **74 developing tropical forest countries** for keeping old-growth forests intact.

Payments will be based on annual satellite remote sensing data for transparent forest monitoring.

Purpose and Rationale:

- It aims to shift economic incentives by making standing forests more valuable than cleared land, countering deforestation driven by higher returns from land conversion.
- It also recognises tropical forests' ecosystem services, including carbon storage, temperature regulation, and biodiversity support.

Funding Structure:

- It aims to raise USD 125 billion, with USD 25 billion from wealthy governments and philanthropists and USD 100 billion from private investors.
- The fund will invest in a mixed portfolio of public and corporate market bonds, and annual returns will be given to tropical forest nations as incentives for forest conservation.

Funding Commitments:

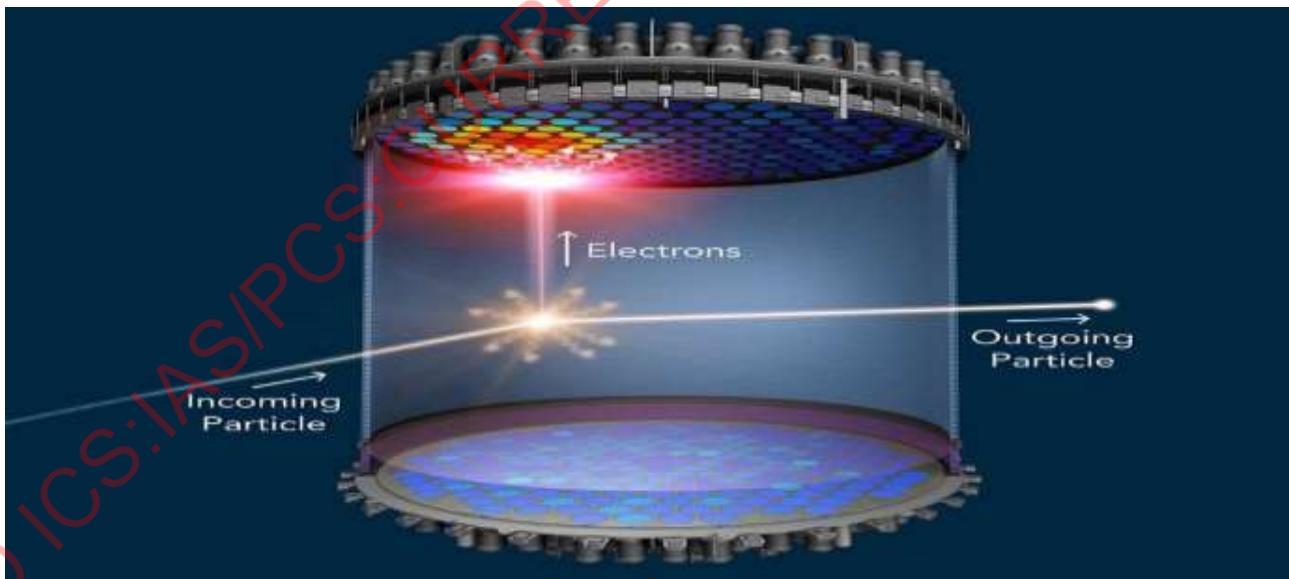
Countries pledging contributions include Brazil (USD 1 billion), Colombia (USD 250 million), Indonesia (USD 1 billion), Norway (USD 3 billion over 10 years), the Netherlands (USD 5 million), and Portugal (1 million Euros).

Weakly Interacting Massive Particles (WIMPS)

Why in News ? Astronomers are debating whether a **recent study** offers the first direct evidence of **dark matter** — the invisible substance making up ~27% of the universe — or is yet another false alarm.

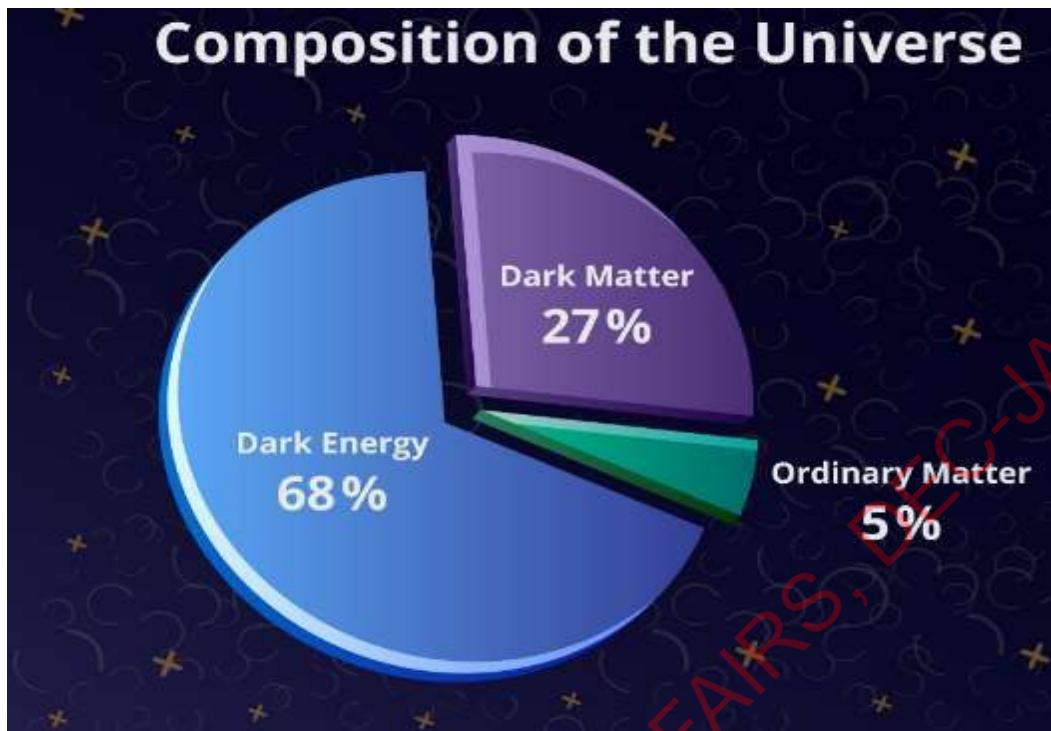
- In a paper published November 2025 in the *Journal of Cosmology and Astroparticle Physics*, University of Tokyo researcher **Tomonori Totani** analyzed 15+ years of NASA Fermi Gamma-ray Space Telescope data.
- He identified a **halo-like excess** of ~20 GeV gamma rays around the Milky Way's center, matching predictions for annihilation of **weakly interacting massive particles (WIMPs)** — a leading dark matter candidate.
- If confirmed, this would reveal dark matter as a new particle beyond the Standard Model, solving a mystery dating to Fritz Zwicky's 1930s observations of galaxy clusters needing "missing mass" for gravitational stability.

WIMPs, or **Weakly Interacting Massive Particles**, are a leading theoretical class of subatomic particles proposed to explain the mystery of **dark matter**. Although they haven't been directly observed yet, they are the focus of some of the most sensitive experiments in modern physics.



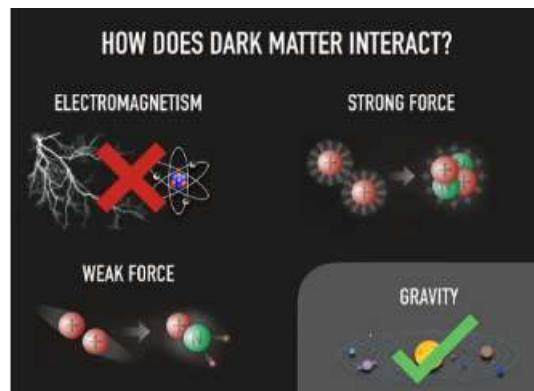
What are WIMPs?

WIMPs are hypothetical particles that do not belong to the "Standard Model" of physics (the current list of known particles like electrons and quarks). They are defined by three primary characteristics:



1. **Weak Interactions:** They do not interact with the electromagnetic force. This means they do not emit, absorb, or reflect light, making them **invisible** to telescopes. They only interact via **gravity** and the **weak nuclear force**.
2. **Massive:** Despite the name "wimp," they are actually quite heavy. Scientists estimate they could be **1 to 1,000 times more massive than a proton**.
3. **Slow-Moving ("Cold"):** Because of their large mass, they move relatively slowly compared to the speed of light. This allows them to clump together under gravity, forming the "scaffolding" that holds galaxies together.

The "WIMP Miracle": Physicists discovered that if a particle with these specific properties existed in the early universe, the amount of them left over today would almost exactly match the amount of dark matter we observe. This striking coincidence is why WIMPs became the top candidate for dark matter.



What is Dark Matter?

Dark matter is a substance that does not emit, absorb, or reflect light (electromagnetic radiation). This makes it completely invisible to traditional telescopes. However, it has **mass** and exerts a massive **gravitational pull**.

- **The 5% Rule:** Everything you have ever seen—stars, planets, trees, people, and atoms—makes up less than **5%** of the universe.
- **The Dark Majority:** Dark matter makes up about **27%** of the universe. The remaining **68%** is "dark energy," a different mystery that is causing the universe to expand faster.

Aravalli Range: Judicial Intervention and Ecological Restoration (2025)

Why in News ? In November 2025, the Supreme Court (SC) of India issued a landmark order settling a long-standing dispute over the **uniform definition** of the Aravalli hills. The Court paused fresh mining leases across four states—Delhi, Haryana, Rajasthan, and Gujarat—while directing a shift toward **sustainable management** rather than an outright permanent ban.

Geographical and Ecological Significance:

The Aravallis are not just a mountain range; they are a vital life-support system for North India:

- **Oldest Fold Mountains:** Nearly **two billion years old**, representing one of the world's oldest geological features.
- **Climate Stabilizer:** Acts as a barrier against the **eastward expansion of the Thar Desert** (preventing desertification) into the Indo-Gangetic plains, including Haryana and Western UP.
- **Water Security:** Serves as a primary **groundwater recharge zone** for the water-stressed National Capital Region (NCR) and is the source of rivers like the **Luni, Sakhi, Sabarmati, and Chambal**.
- **Mineral Wealth:** Richly endowed with **sandstone, marble, granite**, and critical minerals like **copper, zinc, and tungsten**.

The Issue: Excessive and Illegal Mining:

Despite rules laid down by the Environment Ministry since the 1990s, the range has faced:

- **Environmental Degradation:** Four decades of quarrying for stone and sand has led to **plummeting groundwater levels and deteriorating air quality**.

- **Failure of Bans:** While the SC imposed a blanket ban in 2009 in specific Haryana districts, it noted that **total bans** often backfire by giving rise to **violent sand mafias** and **illegal mining syndicates**.
- **International Commitments:** Protection is essential to meet India's goals under the UN Convention to Combat Desertification (UNCCD), specifically restoring **26 million hectares** of degraded land by 2030.

ARAVALLI RANGE

Oldest Mountain Range in India

- **Location:** Stretches across Northern-Western India.
- **Length:** Approximately 670 km (420 mi), running in a southwest direction.
- **States Covered:** Starts near Delhi, passes through southern Haryana, Rajasthan, and ends in Ahmedabad, Gujarat.
- **Highest Peak:** Guru Shikhar on Mount Abu, Rajasthan - 1,722 m.
- **Geological Significance:** One of the Earth's oldest mountain ranges, dating back to the Proterozoic era.
- The word Aravalli is a composite of two Sanskrit roots: "ara" meaning "ridge" and "vali" meaning "row," which together translate to the "line of peaks."



Key Judicial and Executive Interventions (2025):

The Uniform Definition (October-November 2025):

Previously, states and agencies like the Forest Survey of India (FSI) used inconsistent criteria (slopes vs. buffer zones).

- **The 100-Metre Rule:** The SC-appointed committee ruled that **only hills above 100 metres** would be classified as the Aravalli range.
- **Rationale:** This was deemed more inclusive than previous FSI definitions based on slope angles, ensuring better protection for the "continuity and integrity" of the range.

Aravalli 'Green Wall' Project (June 2025):

- **The Buffer Zone:** Creation of a **5-km green buffer** area around the range across 29 districts.

- **Objective:** To expand green cover and act as a biological shield against desertification.

Central Empowered Committee (CEC) Recommendations:

The Court adopted the CEC's "comprehensive approach":

- Mandatory scientific mapping of the entire range.
- Macro-level Environmental Impact Assessment (EIA).
- Strict prohibition in ecologically sensitive areas (tiger corridors, water bodies, and NCR).

The SC's Calibrated Approach: Sustainable Mining

Rather than a permanent total ban, the Court directed the preparation of a **Management Plan for Sustainable Mining (MPSM)**:

1. **Zoning:** Demarcating "No-Go" zones vs. "Regulated Mining" zones.
2. **Carrying Capacity:** Determining how much mining the environment can actually support without collapsing.
3. **Restoration:** Articulating specific measures for rehabilitation of quarried land.

Conclusion: Way Forward

The 2025 SC order shifts the focus from **ad-hoc bans** to **scientific governance**. The success of the Aravalli protection depends on:

- **Inter-State Coordination:** Harmonizing the 100-metre definition across Gujarat, Rajasthan, Haryana, and Delhi.
- **Technological Monitoring:** Using satellite imagery and drones to check the rise of illegal syndicates.
- **Ecological Integrity:** Treating the Aravallis as a **single ecological unit** rather than fragmented state properties.

Table Top Red Road Markings

Why in News? In a landmark step towards eco-sensitive infrastructure development, the National Highways Authority of India (NHAI) has introduced **India's first wildlife-safe road on a stretch of National Highway 45 (NH-45) in Madhya Pradesh**. The initiative aims to reduce animal-vehicle collisions while ensuring smooth road connectivity through forest corridors.

Location of India's First Wildlife-Safe Highway

- The wildlife-safe road is located on the **11.96-kilometre Hiran Sindoor** section of NH-

45, which connects Bhopal and Jabalpur.

- Situated around 60 kilometres from Jabalpur, the highway passes through a dense forest corridor flanked by the **Nauradehi Wildlife Sanctuary** and the **Veerangana Durgavati Tiger Reserve**.
- This region is home to tigers, deer, sambar, jackals, and other wildlife, making it a critical ecological zone where frequent animal crossings have historically led to accidents and fatalities.



What Are Table Top Red Road Markings?

- The most distinctive feature of this project is the introduction of '**table-top red road markings**', a first in India.
- Unlike conventional speed breakers, these markings consist of slightly raised, chequered red surfaces laid across the road.
- The design creates a table-top effect that naturally encourages drivers to slow down without sudden braking.
- The bright red colour was deliberately chosen for its high visibility compared to traditional white or yellow markings, serving as a visual warning that motorists are entering a wildlife-sensitive zone.
- Nearly the entire **12-kilometre forest** stretch has been covered with these markings to ensure consistent speed moderation.

About Green Highways Initiative:

- The **Green Highways (Plantation, Transplantation, Beautification & Maintenance) Policy**, launched by the Indian government in 2015, is a major initiative designed to balance rapid infrastructure growth with environmental sustainability.

- As of late **2025**, the project has evolved from simple tree-planting into a sophisticated "Green Corridor" mission involving cutting-edge technology and circular economy practices.

Key Objectives:

The initiative focuses on three core pillars: **Ecology**, **Economy**, and **Employment**.

- Environmental Impact:** To reduce air pollution and dust by creating "natural sinks" and to minimize soil erosion on highway embankments.
- Safety:** To reduce the glare from headlights of oncoming vehicles using median shrubs and to provide shade during extreme summers.
- Inclusive Growth:** To provide "dignified employment" to local rural communities, including farmers and Self-Help Groups (SHGs), for the maintenance of these green belts.

2025 Progress and Innovations:

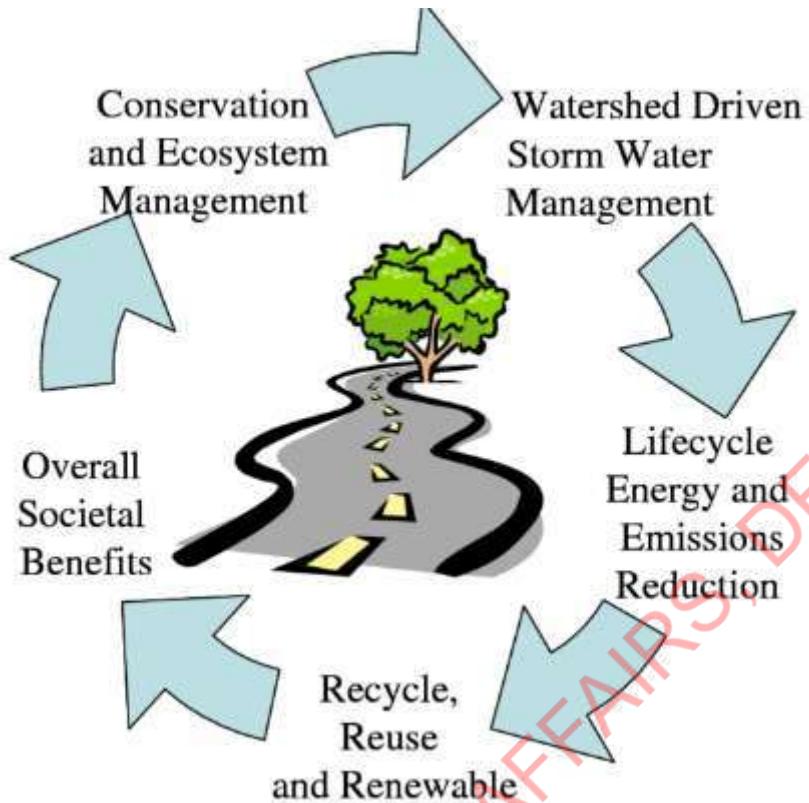
In the current 2025-26 fiscal year, the mission has reached several significant milestones:

- The 45 Million Milestone:** The National Highways Authority of India (NHAI) has successfully planted over **45 million (4.5 crore) trees** and transplanted 70,000 mature trees across the national network.
- Waste-to-Wealth Technology:** Under the leadership of Nitin Gadkari, the ministry has begun utilizing **80 lakh tonnes of plastic waste and steel slag** (industrial waste) in road construction to create "green pavements."
- Wildlife-Safe Roads:** In December 2025, India launched its first **wildlife-safe road** on NH-45 in Madhya Pradesh, featuring 25 dedicated animal underpasses and "table-top red markings" to guide animals safely through tiger reserves.
- Digital Monitoring:** Every tree is now tracked using ISRO's **Bhuvan** and **GAGAN** satellite systems. Geo-tagging ensures that contractors are held accountable for the 90% survival rate required by their contracts.

Financial & Operational Model:

The initiative is self-sustaining through a unique funding mechanism:

- Dedicated Fund:** 1% of the total project cost of every highway is set aside specifically for plantation and maintenance.
- Turnkey Contracts:** NGOs, private companies, and government agencies are awarded "Green Contracts" where they are responsible for the health of the plants for a period of 5 years.



Revenue Sharing: Plantation agencies have the rights to the "usufructs" (the fruits and dried fuel wood) from the trees they maintain, creating a local micro-economy.



Why in News? The Union Environment Ministry has notified the Environmental (Protection) Fund Rules, 2026. These rules establish specific procedures for the utilization of the Environmental (Protection) Fund, which was originally envisioned in the Jan Vishwas Act, 2023, to facilitate the decriminalization of environmental offenses.

Key Points of the Notification:

Funding Source:

- The fund is composed of penalties imposed for violations under three major acts: the **Environment Protection Act (EPA), 1986**, the **Air Act, 1981**, and the **Water Act, 1974**.
- Penalties are first credited to the **Consolidated Fund of India (CFI)** and then transferred to the **Public Account of India**.

Objectives of the Environmental (Protection) Fund:

- The primary objective of the Environmental (Protection) Fund is to convert regulatory penalties into tangible environmental outcomes. The rules seek to:
 - Strengthen pollution prevention, control, and mitigation mechanisms
 - Support remediation of environmentally contaminated sites
 - Promote research and adoption of clean and green technologies
 - Enhance the institutional capacity of environmental regulatory bodies
- By doing so, the fund aligns with the broader principle of "**polluter pays**," ensuring that environmental damage leads to corrective and restorative action rather than remaining a purely punitive measure.

Permitted Areas of Fund Utilisation:

- The notified rules specify **11 broad categories of activities** for which the Environmental (Protection) Fund can be used. These include:
 - Prevention, control, and mitigation of air, water, and soil pollution
 - Remediation and restoration of contaminated and degraded environmental sites
 - Installation, operation, and maintenance of environmental monitoring equipment
 - Development of laboratory infrastructure for environmental testing and compliance
 - Capacity building of regulatory institutions and technical personnel
 - Research and innovation in clean technologies and sustainable practices
 - **Development of Information Technology (IT)-enabled systems for environmental monitoring**
- These provisions aim to ensure that fund utilisation directly contributes to improving environmental quality and regulatory effectiveness rather than being diverted for unrelated purposes.

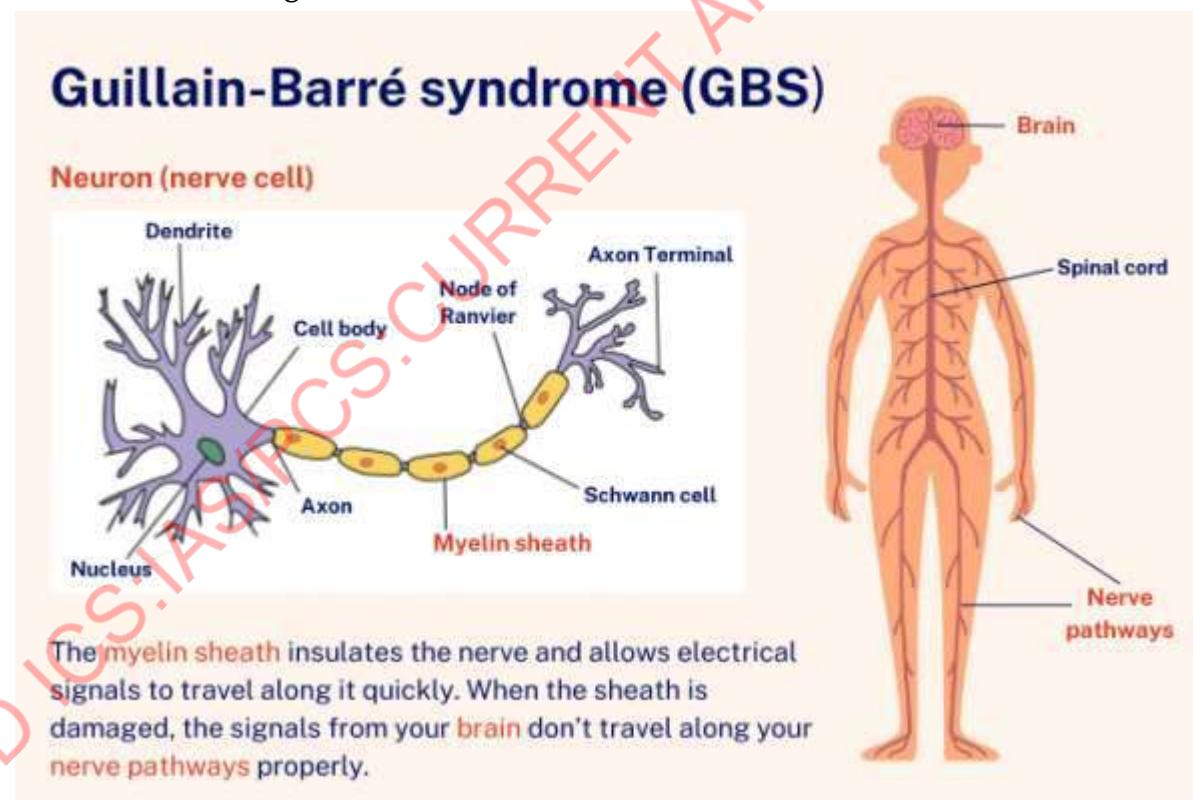
Administrative Structure and Fund Management:

- The rules clearly outline the institutional framework for administering the **Environmental (Protection) Fund**.

- The Union Ministry of Environment, Forest and Climate Change will be the primary authority for administering the fund, or it may notify any other competent body for this purpose.
- To ensure decentralised yet coordinated implementation:
 - Dedicated Project Management Units (PMUs) will be created at both central and state levels
 - Penalties collected will be credited to the fund following a standardised procedure
 - The Central Pollution Control Board (CPCB) will develop and maintain an online portal for managing fund-related processes

Guillain-Barré Syndrome (GBS)

Why in news ? Recent reports from Madhya Pradesh (Neemuch district) indicate multiple cases and deaths linked to Guillain-Barré Syndrome (GBS), prompting public health response and outbreak investigation.

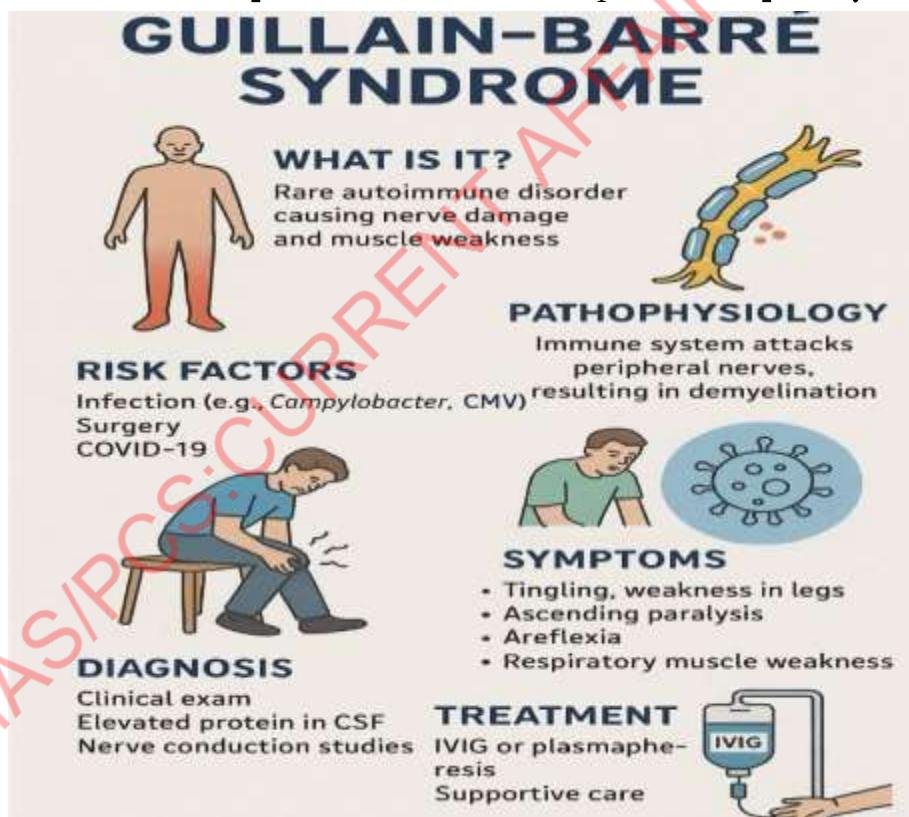


What is Guillain-Barré Syndrome (GBS)?

- GBS is an autoimmune disorder where the immune system attacks peripheral nerves, causing **muscle weakness** and, in severe cases, **paralysis**.
- It is **rare**, affecting 1–2 per 100,000 people annually.
- It is more common in **adults and males**.
- It is often triggered by **viral or bacterial infections**, especially *Campylobacter jejuni* (a cause of gastroenteritis), **influenza**, **Epstein-Barr virus**, **Zika virus**, or, in rare cases, **vaccinations**.

Its Symptoms:

- **Early signs:** Tingling, weakness in legs spreading to the upper body, pins-and-needles sensation, back pain.
- **Severe cases:** Paralysis, breathing difficulties, loss of speech, vision problems.
- **Complications:** Can affect the **autonomic nervous system**, leading to irregular heartbeat, blood pressure fluctuations, and potential **respiratory failure**.



Treatment and Recovery:

- No definitive cure, but treatments include:
 - **Plasma Exchange (Plasmapheresis):** Removes harmful antibodies attacking nerves.

- **Intravenous Immunoglobulin (IVIG) Therapy:** Injects healthy antibodies to counteract immune attacks.
- **Supportive care:** Some patients require ventilator support, physical therapy, and months to years of rehabilitation.

Project Suncatcher

What is Project Suncatcher?

Project Suncatcher is Google's "moonshot" research project aimed at moving AI data centers off the planet and into Earth's orbit. It was officially unveiled in late 2025 as a radical solution to the massive energy and environmental costs of AI on Earth.

The AI Energy Crisis: Terrestrial data centers are consuming record amounts of electricity and water (for cooling). Global demand is expected to rise by 165% by 2030, putting immense pressure on power grids.

- **Milestone Announcement:** Google recently confirmed it is moving from "theory" to "testing," partnering with the satellite company **Planet Labs** to launch the first prototypes.
- **The Space Race 2.0:** It's not just Google; companies like **SpaceX**, Nvidia, and **ISRO** are all racing to claim "orbital real estate" for computing, making this a top tech and geopolitical headline.

Core Aims & Objectives:

- **Harness Unlimited Energy:** In space, solar panels are **8x more productive** than on Earth. By using "dawn-dusk" orbits, satellites can stay in near-constant sunlight, providing 24/7 power without batteries.
- **Zero-Resource Cooling:** It aims to eliminate the need for millions of gallons of Earth's fresh water by using the vacuum of space and specialized radiators for cooling.
- **Infinite Scalability:** Moving to space bypasses Earthly constraints like land availability, local regulations, and aging power grids.
- **Data Sovereignty:** Since space isn't owned by any nation, orbital data centers could potentially bypass strict regional data laws, offering a new kind of "international" cloud.

AI in orbit

Google's Project Suncatcher proposes a constellation like Starlink's, but relying on densely choreographed clusters

■ Artificial intelligence's (AI) rising **energy** demands have pushed Google to explore solar-powered datacentres located in space

■ Its Project Suncatcher proposes **dense** satellite clusters that maintain constant line of sight with the sun to run on solar power

■ As with terrestrial AI facilities space-based datacentres require **high internal bandwidth** rather than high downlink speed

■ Google has found that its chips can resist radiation well, although **cooling** them remains a significant engineering hurdle

■ Economic feasibility depends on launch costs dropping significantly to compete with ground-based technology prices

While challenges remain, past successes like Starlink suggest dismissing space technology is often unwise



Heat is on: A datacentre in space will be blasted with solar energy all the time and have to dissipate heat in a vacuum. CREATED WITH NANO BANANA PRO

Key Technical Specs:

- **The Brain:** Uses **Trillium v6e TPUs** (Google's custom AI chips), which have been tested to survive space radiation for at least 5 years.
- **The Network:** Uses **Laser Links** (Free-Space Optical Links) to beam data between satellites at **tens of terabits per second**—essential for complex AI "thinking."
- **The Formation:** Satellites will fly in **dense clusters** (81 satellites in a group), spaced as close as **200 meters** apart to act as a single, giant supercomputer.

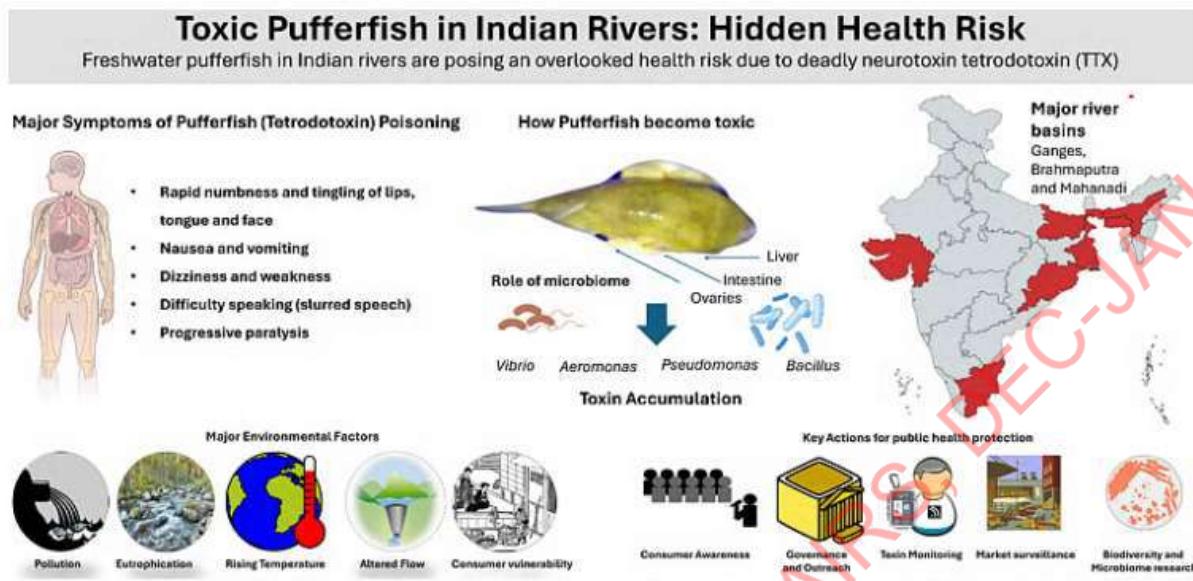
Roadmap & Future:

- **2027 Mission:** Launch of **two prototype satellites** to test if the chips and lasers actually work in the harsh environment of orbit.
- **2030s Goal:** As launch costs drop toward **\$200/kg** (thanks to rockets like SpaceX Starship), Google believes space-based AI will become cheaper than building on the ground.

Pufferfish poisoning

Why in news ? Scientists have officially recorded the first case of pufferfish poisoning in India. A **23-year-old man from Gujarat** suffered sudden numbness, vomiting, and paralysis

after eating a low-cost freshwater fish bought from a local market. This incident has exposed a significant, previously "invisible" health risk in India's river regions.



The Fish: Names and Locations:

Pufferfish are known by various local names like **Toadfish**, **Patkafish**, **Balloonfish**, and **Fugu**.

- Species:** There are about 32 species found in Indian waters.
- Habitats:** They are primarily found in the **Ganga**, **Brahmaputra**, and **Mahanadi** river basins, as well as the **Western Ghats**.
- Role in Nature:** They are bottom-dwelling (benthic) fish that eat both plants and animals. Some species, like the dwarf pufferfish, are now **vulnerable** due to pollution and the aquarium trade.

The Toxin: Tetrodotoxin (TTX):

The danger lies in a potent neurotoxin called **Tetrodotoxin (TTX)** found in the fish's skin and internal organs.

- Extreme Potency:** It is one of the deadliest poisons in nature.
- Resilience:** It is **heat-stable** (cooking does not destroy it) and water-soluble.
- How it kills:** It blocks sodium channels in the body, stopping nerves from sending signals. This leads to tingling, a drop in blood pressure, muscle paralysis, and eventually **respiratory failure**.

The Source of the Poison:

Evidence suggests the fish do not create the poison themselves. Instead, it comes from **bacteria** (like *Vibrio* and *Bacillus*) that live inside the fish's gut, liver, and ovaries. Studies

from the **Mahanadi River** show that these fish carry dense and diverse microbial communities that help produce or store the toxin.

FISHY PROBLEM



- 11 species of pufferfish found along Gujarat coast
- Pufferfish contain tetrodotoxin, which is hundreds of times lethal than cyanide
- The toxin is stored in its liver, ovaries
- Death can occur within 15 minutes of eating this fish
- TTX does not dilute during cooking process

The Public Health Gap:

Unlike Japan, where only licensed chefs can prepare pufferfish, India has almost no safety regulations for them.

- **Unintentional Sales:** Pufferfish are often caught accidentally with other freshwater fish and sold to unsuspecting buyers.
- **Lack of Awareness:** Most consumers and fishermen are unaware of the toxin or how to handle the fish safely.
- **No Surveillance:** India currently lacks a system to track fish toxins or assess the risks to people living near major rivers.

Central Silk Board (CSB)

Why in News ? Recently, the **Central Silk Board** has announced an ambitious plan to **double India's silk value chain**, currently valued at **Rs 55,000 crore**, to **1.1 lakh crore** by **2030**.

About CSB:

- It is a statutory body under the Union Ministry of Textiles, established by the **Central Silk Board Act, 1948** (later amended as Central Silk Board (Amendment) Act, 2006).

- It is responsible for formulating policies and implementing programs for the development of sericulture and silk industry.
- It undertakes and supports scientific, technological, and economic research in sericulture, and oversees the production and supply of quality silkworm seeds and cocoons.
- Headquarter: Bengaluru, Karnataka



Status of Silk Production in India:

- The nation now ranks as the second-largest silk producer worldwide.
- Its share of global production jumped from 6% in 1949 to 42% in 2023.
- Raw silk production has increased from 1,242 metric tonnes in 1949 to 38,913 metric tonnes in 2023-24.
- Efficiency improvements are evident, as renditta has decreased from 17 in 1949 to 6.47 in 2023-24.

In sericulture, Renditta is the number of silk cocoons needed to produce one kilogram of yarn. A lower renditta indicates that the cocoon produces higher quality yarn.

Top Producing states:

Karnataka is India's leading silk producer, accounting for roughly one-third of the nation's raw silk, especially mulberry silk, with significant production in districts like Ramanagara and Kolar, followed by Andhra Pradesh, West Bengal, and Tamil Nadu.

Donroe Doctrine

Why in News ? The term "Donroe Doctrine" has surged into global headlines following a dramatic U.S. military operation in early January 2026. It represents a 21st-century evolution of American foreign policy that prioritizes unilateral force, economic control, and the "protection" of the Western Hemisphere from non-American influence.

The term became a focal point due to **Operation Absolute Resolve**, a high-stakes military raid on **January 3, 2026**.

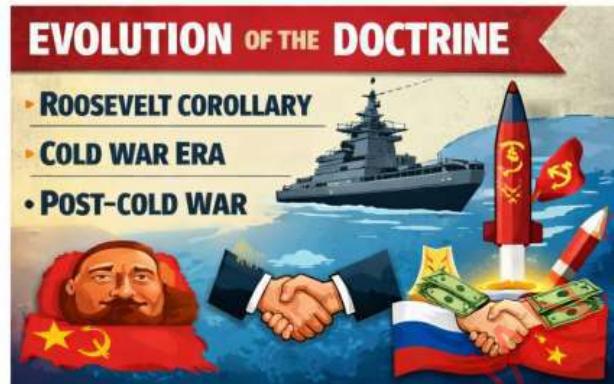
- **The Raid:** U.S. Special Forces (Delta Force and FBI) struck Caracas, Venezuela, seizing President **Nicolás Maduro** and his wife, Cilia Flores.
- **The Justification:** The Trump administration framed the raid as a "law enforcement action" rather than an invasion, citing Maduro's indictment for narco-terrorism and drug trafficking.
- **The Outcome:** Maduro was flown to New York for prosecution. While Vice President **Delcy Rodríguez** assumed the interim presidency in **Venezuela**, the U.S. signaled it would exert significant control over the country's oil infrastructure.
- **The Name:** President Trump coined the term "Donroe Doctrine" (a portmanteau of his name and James Monroe) to describe this era of "reasserting American dominance" in the region.

What is the Donroe Doctrine?

The Donroe Doctrine is a modern, more aggressive interpretation of the 1823 Monroe Doctrine.

It is defined by three main pillars:

- **Strategic Denial:** The U.S. explicitly forbids "non-hemispheric competitors" (specifically China, Russia, and Iran) from owning infrastructure or positioning military assets in the Americas.
- **Transactional Predation:** Unlike previous eras that used "soft power" or aid, this doctrine is transactional. It focuses on securing resources (like Venezuelan oil) as a matter of U.S. national security and economic interest.
- **Domestic Security Linkage:** It treats internal Latin American issues—such as drug trafficking and migration—as direct military threats to the U.S. homeland, justifying "lightning strikes" and raids across borders without prior UN or Congressional approval.



Evolution: From 1823 to 2026:

Phase	Doctrine / Corollary	Core Concept
1823	Monroe Doctrine	Defensive: "Europe, stay out." Warned European powers not to recolonize the independent Americas.
1904	Roosevelt Corollary	Police Power: Asserted the U.S. right to intervene in Latin American nations to "stabilize" them and keep Europe away.
1960s	Cold War Era	Anti-Communism: Used the doctrine to justify opposing Soviet influence (e.g., Cuban Missile Crisis, Nicaragua).
2025	Trump Corollary	Economic Security: Framed non-American ownership of "vital assets" (canals, oil, mines) as a threat to the U.S.
2026	Donroe Doctrine	Unilateral Dominance: Explicitly uses military force to remove foreign leaders and secure resources, disregarding international law.

Reusable Launch Vehicle (RLV)

Why in news? The **Reusable Launch Vehicle (RLV)** was recently in news regarding the ISRO missions in space.

About RLV:

A **Reusable Launch Vehicle (RLV)** is a spacecraft or rocket designed to return to Earth substantially intact, allowing it to be refurbished and launched again for subsequent missions.

For decades, rockets were "expendable"—meaning they were discarded in the ocean or burned up in the atmosphere after a single use. Modern RLV technology is currently revolutionizing the space industry by treating rockets more like airplanes.

How it Works?

Most RLVs are "partially reusable," meaning only the largest and most expensive part (the first-stage booster) is recovered.

- **Vertical Landing:** Used by **SpaceX (Falcon 9)**. After separation, the booster uses "grid fins" to steer itself and reignites its engines (entry burn and landing burn) to land vertically on a drone ship or a landing pad.
- **Horizontal Landing (Spaceplanes):** Used by the **Space Shuttle** (retired) and currently ISRO's **RLV-TD (Pushpak)**. These vehicles have wings and land on a runway like a traditional aircraft.
- **Parachute Recovery:** Some systems, like **Rocket Lab's Electron**, have experimented with using parachutes to slow down components for mid-air capture or soft water landings.

Why Reusability Matters?

The primary driver for RLVs is **cost**.

- **Economics:** Building a rocket costs tens of millions of dollars. If you only pay for fuel and minor refurbishment instead of a brand-new rocket every time, the cost per kilogram of payload drops significantly.
- **Cadence:** Reusability allows for a much higher frequency of launches. SpaceX, for example, can now launch several times a week because they have a fleet of flight-proven boosters.
- **Sustainability:** It reduces the amount of "space junk" and marine debris caused by discarded rocket stages falling back to Earth.

VAID | ICS

Why Reusability Matters!

Economics	Cadence	Sustainability
Lower Costs	Frequent Launches	Less Space Waste

What is RLV?

Reusable Launch Vehicle (RLV)

A spacecraft or rocket designed to return to Earth and be launched again, allowing it to be refurbished and launched again for subsequent missions.

RETURN • REFURBISH • RELAUNCH

VAID | ICS

Major Players and Vehicles

(2026 Status)

Vehicle	Project
Falcon 9 SpaceX	Operational
Starship SpaceX	Testing/Flight Fully Reusable (Booster & Fairings)
Pushpak (RLV-TD) ISRO (India)	Testing/Flight Fully Reusable (Booster & Fairings)
New Glenn Blue Origin	Near-Operational Partially Reusable (Booster)
Long March 10/12 CNSA (China)	In Development Reusable variants

How it Works?

Reusable Launch Vehicle (RLV)

Used by SpaceX (Falcon 9)
Booster lands vertically after using grid fins and reigniting engines.

Horizontal Landing (Spaceplanes)

Used by the Space Shuttle (retired) & ISRO's Pushpak (RLV-TD) Spaceplane
lands horizontally like an aircraft

Major Players and Vehicles (2026 Status):

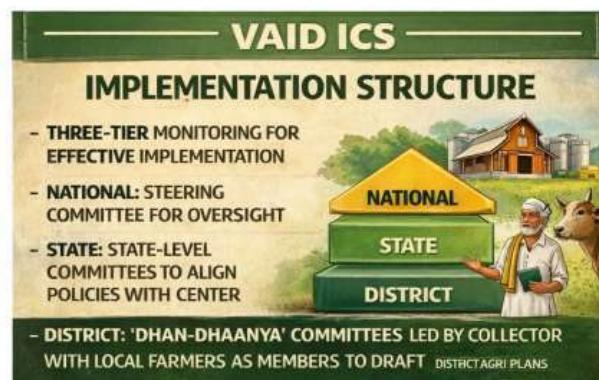
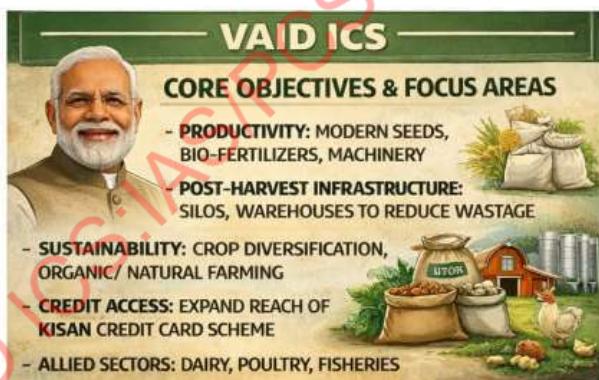
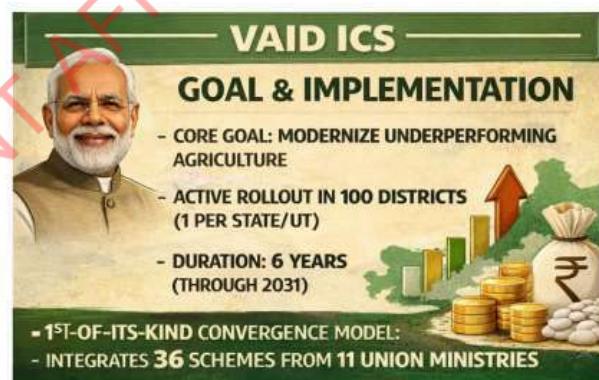
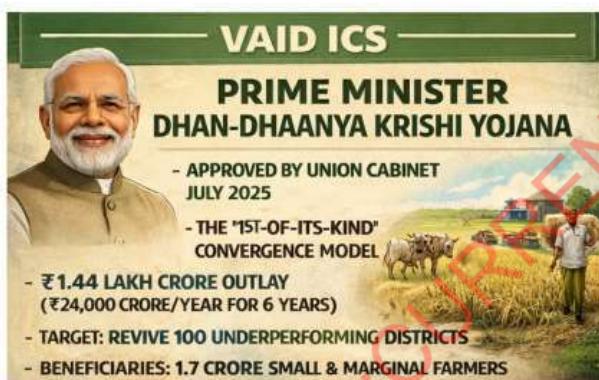
Vehicle	Organization	Status	Reusability Level
Falcon 9	SpaceX	Operational	Partially Reusable (Booster & Fairings)
Starship	SpaceX	Testing/Flight	Fully Reusable (Both stages)
Pushpak (RLV-TD)	ISRO (India)	Testing	Technology Demonstrator (Spaceplane)
New Glenn	Blue Origin	Near-Operational	Partially Reusable (Booster)
Long March 10/12	CNSA (China)	In Development	Reusable variants expected soon

Prime Minister Dhan-Dhaanya Krishi Yojana (PMDDKY)

Why in the News? The scheme is currently in the news because the **Union Cabinet**, chaired by Prime Minister Narendra Modi, formally approved its implementation details on **January 21, 2026**.

The **Prime Minister Dhan-Dhaanya Krishi Yojana (PMDDKY)** is a flagship agricultural transformation initiative approved by the Union Cabinet in **July 2025** (and officially launched in **October 2025**) to modernize farming in India's underperforming regions.

- **Budgetary Commitment:** It follows through on the promise made in the **Union Budget 2025-26**.
- **Massive Outlay:** The government has committed **Rs 24,000 crore annually** for a period of **six years** (totaling **Rs 1.44 lakh crore** through 2031).
- **Operational Launch:** The news highlights the transition from a "proposal" to an "active rollout" phase across 100 identified districts.



Key Points of PMDDKY:

This scheme is described as a "first-of-its-kind" convergence model for the agriculture sector.

- **Target Audience:** It aims to directly benefit **1.7 crore farmers**, specifically small and marginal landholders.
- **Geographic Focus:** It targets **100 underperforming districts** across India. To ensure regional balance, **at least one district** is selected from every State and Union Territory.
- **The Convergence Model:** Instead of creating a new administrative silo, it **merges 36 existing schemes** from **11 different Union Ministries** (including Rural Development, Jal Shakti, and Finance) into one unified framework.
- **Strategic Inspiration:** It is modeled after the **Aspirational Districts Programme (ADP)**, utilizing the same "3Cs" approach: Convergence, Collaboration, and Competition.

Core Objectives & Pillars:

The scheme focuses on a "saturation approach" to fix the gaps in the agricultural value chain:

- **Productivity:** Providing high-yielding seeds, bio-fertilizers, and modern machinery.
- **Post-Harvest Infrastructure:** Building storage units (silos, warehouses) at the **Panchayat and Block levels** to reduce wastage.
- **Sustainable Practices:** Shifting away from monoculture toward **crop diversification** and promoting **natural/organic farming**.
- **Credit Access:** Expanding the reach of the **Kisan Credit Card (KCC)** and facilitating both short-term (input) and long-term (asset building) loans.
- **Allied Sectors:** Integrating dairy, poultry, and fisheries to ensure farmers have multiple income streams.

Implementation Structure (Three-Tier):

To ensure the scheme doesn't fail due to poor local management, a strict monitoring hierarchy has been established:

1. **National Level:** A National Steering Committee for oversight.
2. **State Level:** State-level committees to align local policies with the center.
3. **District Level:** Led by the **District Dhan Dhaanya Samiti** (chaired by the District Collector), which includes **progressive farmers** as members to draft "District Agriculture and Allied Activities Plans."

Selection Criteria for Districts:

Districts are not chosen randomly; they are identified based on three specific data-driven indicators:

1. **Low Agricultural Productivity:** Output per hectare is significantly below the national average.
2. **Low Cropping Intensity:** Land is left fallow for large parts of the year.

3. **Low Credit Disbursement:** Farmers have limited access to institutional banking.

The Tribal Council of Little and Great Nicobar Islands

Why in News ? The Tribal Council of Little and Great Nicobar Islands recently wrote to the), flagging "unanswered" grievances over the project's impact on tribal lands, forest rights, and ancestral villages. This follows a November 2025 NCST interview where its chairperson claimed no such representations were received, prompting the council to resubmit old complaints. The project involves diverting ~130 sq km of forest land and denotifying tribal reserves, raising fears of displacement for Nicobarese and Shompen tribes.

Key Points:

Tribal Concerns:

- **Affected Groups:** Nicobarese (Scheduled Tribe) and Shompen (Particularly Vulnerable Tribal Group, ~200-300 people).
- **Issues:** Potential displacement from ancestral lands (including pre-2004 tsunami villages), loss of forest rights, lack of informed consent, and violation of **Forest Rights Act (FRA), 2006**.
- **Council Actions:** Withdrew No-Objection Certificate (NOC) in November 2022; reiterated in July 2025 and December 2025 letters that they oppose project in tribal reserves or Shompen areas.
- **Allegations:** Earlier consent was obtained under misinformation; forest rights not properly settled before diversion.

About Tribal Council of Little and Great Nicobar Islands:

The Tribal Council of Little and Great Nicobar Islands is a statutory body established under the **Andaman and Nicobar Islands (Tribal Councils) Regulation, 2009**. It represents the indigenous tribal communities in the southern Nicobar group, primarily the **Nicobarese** (a Scheduled Tribe) and the **Shompen** (a Particularly Vulnerable Tribal Group, or PVTG, with a population of ~200–300).

Structure & Role:

- Comprises elected or appointed representatives (e.g., captains from village councils).
- Has limited advisory and executive powers focused on tribal welfare, land rights, cultural preservation, and local governance.

- Unlike Sixth Schedule autonomous councils, it lacks legislative or judicial authority but plays a key role in consultations for development projects affecting tribal areas.

Leadership:

- **Chairman:** Barnabas Manju (long-serving leader, based in Campbell Bay, Great Nicobar).
- He has been vocal about tribal rights since at least 2021.

Key Stance on Great Nicobar Project:

- The council opposes aspects of the Rs 81,000 crore mega-infrastructure project (transshipment port, airport, township, power plant) due to potential displacement, forest diversion (~130 sq km), and denotification of tribal reserves (~84 sq km).
- Issued a No-Objection Certificate (NOC) in August 2022 but withdrew it in November 2022, alleging misinformation and lack of informed consent.
- Demands return to pre-2004 tsunami ancestral villages and protection under the **Forest Rights Act (FRA), 2006**.
- Recent actions: Wrote to NCST on December 6, 2025, highlighting "unanswered" grievances; also complained to Union Tribal Affairs Minister in July 2025.

Broader Context

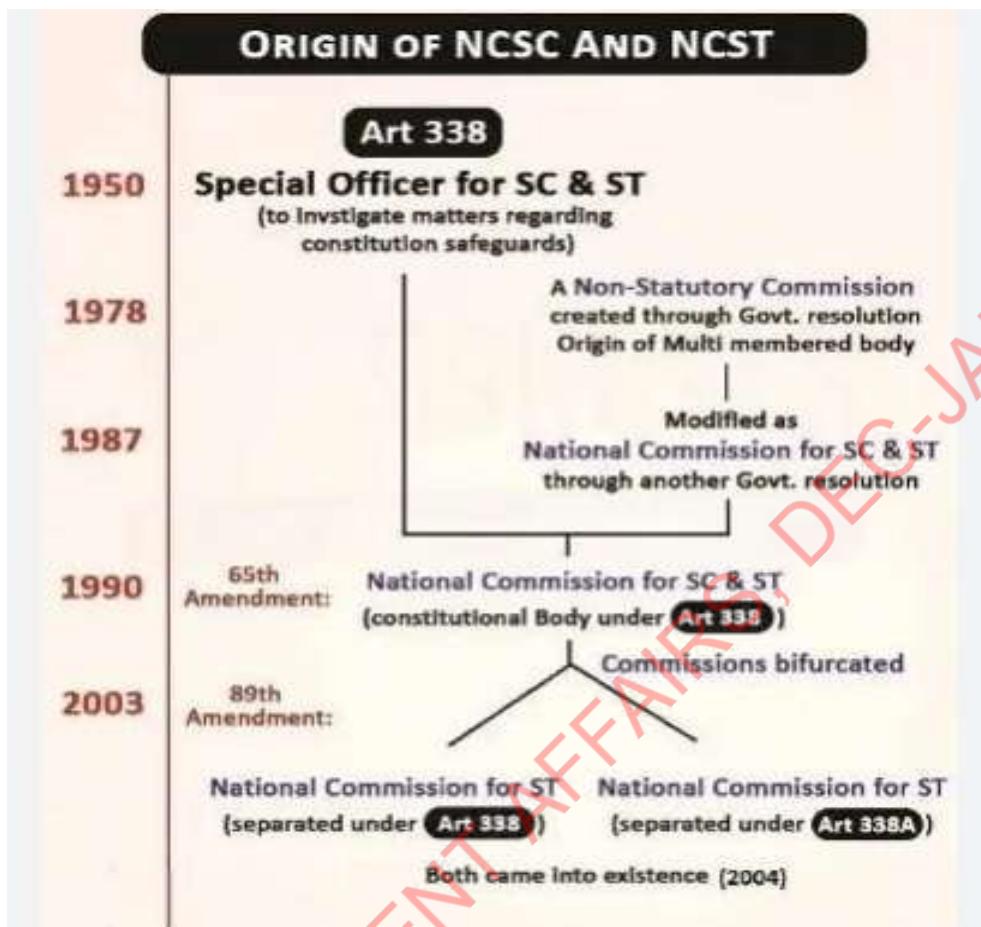
- Operates in a highly restricted tribal reserve area (under the 1956 Protection of Aboriginal Tribes Regulation).
- Focuses on protecting Shompen (semi-nomadic foragers) and Nicobarese (settled with plantations and fishing) from external impacts.

About National Commission for Scheduled Tribes (NCST):

The National Commission for Scheduled Tribes (NCST) is a **constitutional body** established under **Article 338A** of the Indian Constitution (inserted via the 89th Amendment Act, 2003). It was carved out from the earlier combined SC/ST Commission to focus exclusively on tribal issues.

- **Composition**

- Chairperson: Antar Singh Arya (current as of 2025).
- Vice-Chairperson + 3 Members (including one woman).
- Appointed by the President for a 3-year term; Chairperson has Cabinet Minister rank, others have senior bureaucratic status.



- **Functions & Powers**

- Investigate and monitor safeguards for Scheduled Tribes under the Constitution, laws, or government orders.
- Evaluate socio-economic development progress and advise on planning.
- Inquire into complaints, summon witnesses, and have civil court-like powers.
- Submit annual reports to the President (laid before Parliament).
- Consulted on major policy matters affecting STs.

About Particularly Vulnerable Tribal Groups (PVTGs) in India:

Particularly Vulnerable Tribal Groups (PVTGs) are a special sub-category of Scheduled Tribes (STs) in India, identified as the most disadvantaged and vulnerable among tribal communities. They face extreme socio-economic challenges and require targeted protection and development interventions. The term was changed from Primitive Tribal Groups (PTGs) in 2006 to avoid derogatory connotations and emphasize vulnerability.

Identification Criteria:

PTVGs are recognized based on the following key characteristics (as per Ministry of Tribal Affairs guidelines):

- Pre-agricultural level of technology (e.g., reliance on hunting, gathering, shifting cultivation).
- Low or stagnant/declining population.
- Extremely low literacy rates.
- Subsistence-level economy.
- Geographical isolation and limited contact with mainstream society.

Particular VULNERABLE TRIBAL GROUPS



These criteria were first outlined in the Dhebar Commission report (1973) and formalized in the Fifth Five-Year Plan (1974–79).

Number and Distribution:

- There are 75 PVTGs across 18 states and 1 Union Territory (Andaman & Nicobar Islands).
- Highest numbers: Odisha (13 PVTGs), followed by Andhra Pradesh (12).
- Estimated population: Around 47–48 lakh (as per recent habitation surveys; 2011 Census figures were lower).
- They inhabit remote, often forested or hilly areas, with many groups facing habitat threats from development projects.

Government Initiatives:

- **Development of PVTGs Scheme** (Ministry of Tribal Affairs): Provides 100% central funding for habitat-level plans focusing on housing, education, health, livelihoods, and cultural preservation.
- **Pradhan Mantri Janjati Adivasi Nyay Maha Abhiyan (PM-JANMAN)**: Aims to saturate PVTG habitations with basic facilities (e.g., roads, housing, water, electricity).
- **Habitat Rights Recognition**: Granted to some groups (e.g., in Odisha, Madhya Pradesh, Chhattisgarh) under the Forest Rights Act, 2006, to protect traditional territories.
- Emphasis on **Conservation-cum-Development (CCD)** plans to balance development with cultural integrity.

Private Capital Expenditure (capex)

Why in the News? The article highlights a key economic paradox: India's GDP is expanding robustly (around 6–7% in recent quarters), but private capital expenditure (capex) remains stagnant at ~12% of GDP for over a decade.

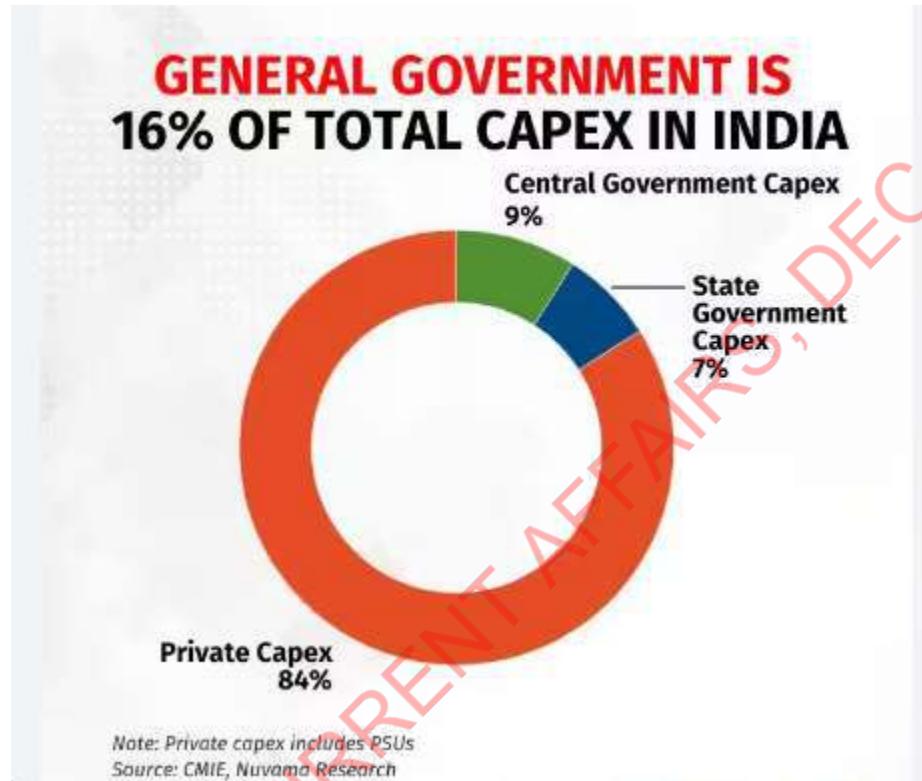
Key Points:

- **GDP Growth vs. Private Capex Disconnect**
 - India's GDP has grown rapidly post-COVID, but private capex (investment in machinery, plants, etc.) has been stuck at ~12% of GDP since ~2011.
 - Total Gross Fixed Capital Formation (GFCF) rose to ~33.7% of GDP in FY25, but private share declined to 34.4% in FY24 (lowest since 2011–12).
 - Public capex (government + state) has driven growth, while private sector remains cautious.

Recent Data Highlights:

- Listed companies' capex rose 11% YoY in FY25 to ~₹9.4 lakh crore (CareEdge Ratings).
- Gross fixed assets of ~4,500 companies grew 8.5% YoY as of September 2025 (Bank of Baroda).
- MoSPI's private capex survey shows intentions for FY26 at ₹4.89 lakh crore (down 26% from FY25), though data has caveats.
- Informal sector fixed assets grew only 1.9% YoY to September 2024.
- **Capacity Utilization and Demand:**

- Manufacturing capacity utilization remains low (~75–76% in recent RBI OBICUS surveys), indicating excess capacity and no urgent need for new investments.
- Companies face weak demand, high input costs, and global uncertainties (e.g., US tariffs, trade wars).



Core Issues:

- **Stagnant Private Investment:**
 - Private capex has not revived despite corporate profits hitting highs and government incentives.
 - Firms prefer financial investments, debt repayment, or acquisitions over new capacity.
- **Over-Reliance on Public Capex:**
 - Government spending has filled the gap, but private sector must lead for sustainable, job-creating growth.
 - Risks: **Crowding out private investment**, fiscal strain if public capex slows.
- **Broader Economic Risks;**
 - Low private investment could cap long-term growth potential.

- Global headwinds (tariffs, geopolitical tensions) and domestic demand weakness add caution.

Way Forward:

To revive private capex, experts suggest:

- **Boost Demand** → Targeted fiscal measures for consumption (e.g., tax cuts, rural support) to create demand-pull for investments.
- **Policy Reforms** → Simplify taxes, reduce regulatory hurdles, and improve ease of doing business.
- **Incentives** → Extend PLI schemes, provide viability gap funding, and encourage PPPs in infrastructure.
- **Monetary Support** → Potential rate cuts if inflation eases, lowering borrowing costs.
- **Structural Fixes** → Address excess capacity, enhance credit flow to productive sectors, and channel household savings into productive investments.

What is Private Capital Expenditure (Capex)?

Private capital expenditure (private capex) refers to the spending by private sector companies (such as corporations, firms, and businesses) on acquiring, upgrading, or maintaining **long-term fixed assets** that are used to generate future income. These assets are typically physical and long-lasting, meant to expand production capacity or improve efficiency.

Key Components of Private Capex:

Private capex generally includes:

- **Machinery and equipment** (e.g., new factory machines, computers, vehicles)
- **Buildings and infrastructure** (e.g., new factories, warehouses, offices, hotels)
- **Land improvements** (e.g., construction of roads, bridges, or facilities within company premises)
- **Technology and R&D-related fixed assets** (e.g., specialized software, testing labs)
- **Expansion or modernization** of existing facilities

It does **not** include:

- Day-to-day operational expenses (opex) like salaries, raw materials, or utilities
- Financial investments (e.g., buying stocks or bonds)
- Short-term working capital

How Private Capex is Measured?

- **Gross Fixed Capital Formation (GFCF)** – the official economic measure that includes both private and public capex.
- **Private capex** is the **private sector portion** of GFCF.

- In India, it is tracked through:
 - Ministry of Statistics and Programme Implementation (MoSPI) surveys
 - RBI's Order Books, Inventories and Capacity Utilisation Survey (OBICUS)
 - Corporate balance sheets and project announcements

What is Crowding Out of Private Investment?

Crowding out refers to a situation where **increased government spending or borrowing** reduces (or "crowds out") **private sector investment** in the economy. It happens when the government competes with private borrowers for the same pool of available funds, leading to higher interest rates or reduced access to credit for businesses.

This phenomenon is a key concept in **macroeconomic theory**, particularly in discussions about fiscal policy, public debt, and the balance between public and private sector activity.

How Crowding Out Works ?

Financial Crowding Out :

- Government borrows heavily to finance its spending (e.g., infrastructure projects, subsidies).
- This increases demand for loanable funds in the financial market.
- With limited savings available, interest rates rise.
- Higher borrowing costs make it more expensive for private companies to take loans for new projects (capex), leading them to cut back on investment.

Resource Crowding Out:

- Government spending absorbs labor, materials, and other resources.
- This reduces availability for private firms, driving up costs and limiting private expansion.

Psychological/Expectation Crowding Out:

- Large public deficits signal future tax hikes or inflation.
- Businesses become cautious and delay or reduce investments.

Will Bangladesh withdraw from the NPT?

No country can simply "give" a nuclear bomb to another — doing so would violate multiple international treaties, including the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), and would trigger severe global consequences.

Legal & Treaty Restrictions

- **Pakistan is a signatory to the NPT as a non-nuclear weapon state?** → Actually, Pakistan is not a signatory to the NPT, but it is still bound by international norms and faces scrutiny from the UN Security Council and the International Atomic Energy Agency (IAEA).
- **Bangladesh is a signatory to the NPT** as a non-nuclear weapon state, meaning it has pledged not to acquire nuclear weapons.
- Any transfer of nuclear weapons or technology would be considered **illegal proliferation**.

Political & Strategic Realities

- Nuclear weapons are tightly guarded **national assets**. Countries do not share them because it undermines their own security.
- If Pakistan were to attempt such a transfer, it would face **international sanctions, diplomatic isolation, and possibly military consequences**.
- **Bangladesh itself has no nuclear weapons program** and focuses only on peaceful nuclear energy (like the Rooppur Nuclear Power Plant, built with Russian assistance).

Global Consequences

- Such an act would **destabilize South Asia**, where India, Pakistan, and China already have nuclear arsenals.
- It would likely provoke **immediate global intervention** from powers like the US, Russia, and China, as well as the UN.

In short: No, Pakistan cannot legally or realistically give a nuclear bomb to Bangladesh. Doing so would violate international law, trigger massive global backlash, and is not in the interest of either country.

International Commitments

NPT (Non-Proliferation Treaty): Bangladesh joined the NPT in 1979 as a non-nuclear weapon state, pledging never to develop or acquire nuclear arms (Inderscience Publishers).

IAEA Safeguards: It signed a Comprehensive Safeguards Agreement in 1982 and implemented it at its TRIGA research reactor in 1986 (Inderscience Publishers).

Additional Protocol (2001): Strengthened transparency and monitoring of its nuclear activities (Inderscience Publishers).

Treaty on the Prohibition of Nuclear Weapons (TPNW): Bangladesh signed in 2017 and ratified in 2019, becoming one of the first 50 states to commit to a nuclear-weapon-free world (ICAN).

Focus on Peaceful Nuclear Energy

Bangladesh's nuclear program is energy-oriented, not military.

- It built the **Rooppur Nuclear Power Plant** with Russian assistance, aiming to add 2400 MWe to its grid by 2024–2025 (Inderscience Publishers).
- Nuclear technology is used for **research, medicine, and industry**, not weapons.

Can Bangladesh drop out of NPT & IAEA?

Yes, technically: Any country can withdraw from the **Nuclear Non-Proliferation Treaty (NPT)**. Article X of the treaty allows withdrawal with a **3-month notice** if a nation believes its "supreme interests" are jeopardized.

IAEA (International Atomic Energy Agency): Membership is voluntary. A country could withdraw or stop cooperating with safeguards at any time.

What happens if Bangladesh did this?

Global Backlash

Withdrawal would immediately raise suspicion that Bangladesh intends to pursue nuclear weapons. It would signal a major shift from their "Atoms for Peace" policy to a military one.

Sanctions:

The **UN Security Council** and major powers (US, EU, China, Russia) would likely impose heavy economic and diplomatic sanctions. Since Bangladesh's economy relies heavily on exports to the US and EU, this could be devastating.

Isolation:

Bangladesh would lose its standing as a responsible global actor. It would face isolation in:

- **Trade & Aid:** Most international trade agreements are tied to security stability.
- **Technology:** Cooperation on the **Rooppur Nuclear Power Plant** would likely cease, as Russia (the primary partner) follows IAEA guidelines for technology transfer.

Regional Instability:

India and Pakistan, already nuclear-armed, would view a nuclearized Bangladesh as a direct existential threat. This could trigger:

- **Military escalation** along borders.
- **Political tension** and the collapse of regional cooperation frameworks (like SAARC or BIMSTEC).

BlueBird Block-2 Satellite

BlueBird Block-2 is a **next-generation communications satellite** developed by the American company **AST SpaceMobile**. It was successfully launched by ISRO on December 24, 2025, using the **LVM3-M6** rocket from Sriharikota, India. This is the **heaviest commercial satellite ever launched from Indian soil**.

Key Specifications

- **Mass:** Approximately **6,100 kg** (the heaviest payload launched by LVM3 to Low Earth Orbit).
- **Orbit:** Low Earth Orbit (LEO) at an altitude of \sim 520-600 km (inclination \sim 53°), enabling direct connection to standard mobile phones.
- **Antenna:** Massive **223 m²** (about **2,400 sq ft**) phased-array antenna – the largest commercial communications antenna in LEO to date. It is **3x larger** and offers **10x more capacity** than the earlier Block-1 satellites.
- **Capacity:** Up to **120 Mbps per coverage cell** (supports 4G/5G voice, video calls, messaging, streaming, and data).
- **Technology:** Powered by the **AST5000 ASIC** chip, allowing **direct-to-mobile connectivity** with unmodified, off-the-shelf smartphones (no extra hardware required).

Mission Purpose

- Part of AST SpaceMobile's **global LEO constellation** to create the world's first **space-based cellular broadband network**.
- **Direct-to-Device** service: Provides 4G/5G internet and calls in remote areas (forests, oceans, mountains, deserts) where traditional cell towers cannot reach.
- **Plan:** Launch a total of **60+ Block-2 satellites** for continuous global coverage. The first Block-1 batch (5 satellites) was launched in September 2024.
- **Partnerships:** Collaborations with 50+ mobile operators (e.g., AT&T, Verizon), covering over **2.8 billion users** worldwide.

Launch and Significance

- **Launch:** December 24, 2025, via ISRO's LVM3-M6 (India's most powerful rocket). This was LVM3's **6th operational flight** and **third dedicated commercial mission**.

- **Milestone:** Maintains ISRO's 100% success rate for LVM3 and marks the **heaviest LEO payload** launched from India. It is part of a commercial agreement between **NewSpace India Limited (NSIL)** and AST SpaceMobile.
- **Future Impact:** Proves LVM3's reliability for upcoming missions like **Gaganyaan** (human spaceflight) and other heavy-lift projects.

This satellite has the potential to **revolutionize global mobile connectivity** by bringing high-speed internet and calls to every corner of the planet – even the most remote places. AST SpaceMobile's vision: "**Connectivity everywhere, all the time**

Libya : Libyan National Army (LNA)

The country remains deeply divided between two primary political and military power centers. the **Libyan National Army (LNA)** and the **Government of National Unity (GNU)**

The Libyan National Army (LNA)

The LNA is the military force controlling **Eastern and Southern Libya**, including the critical "Oil Crescent" where most of Libya's energy wealth is located.

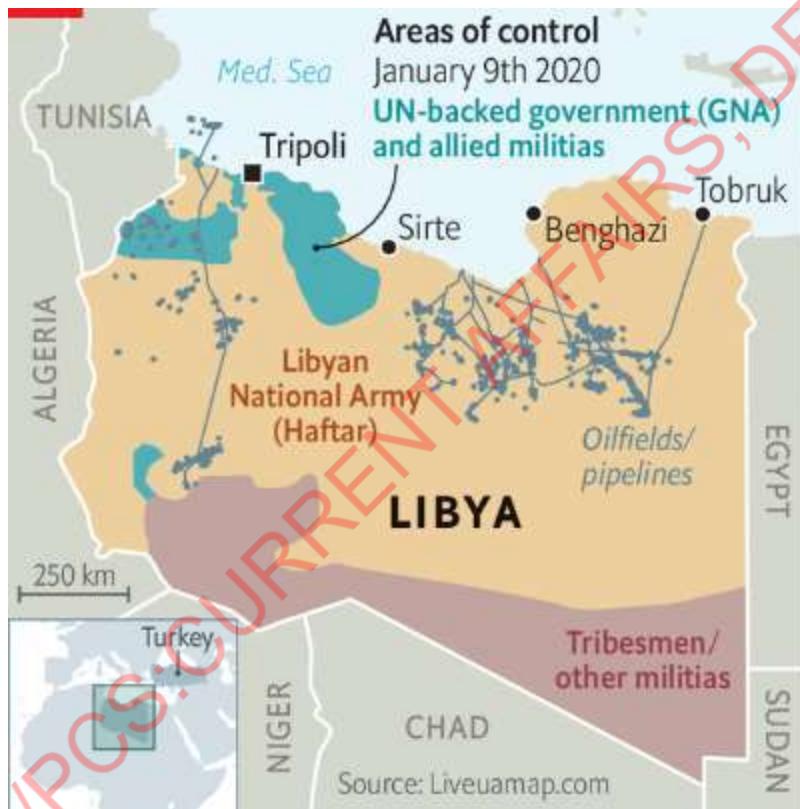
- **Leader:** Field Marshal **Khalifa Haftar**.
- **Headquarters:** Benghazi and Tobruk.
- **Political Affiliation:** It is the military arm of the **House of Representatives (HoR)**, Libya's elected parliament that relocated to the east after conflict broke out in Tripoli.
- **Military Characteristics:** The LNA is structured more like a conventional army than its rivals. It consists of professional soldiers, former Gaddafi-era officers, and various tribal militias.
- **Strategic Goal:** Haftar's primary goal has been to unify Libya under a strong centralized military leadership, often positioning himself as a bulwark against Islamic extremism.
- **Foreign Support:** Traditionally supported by Egypt, the UAE, and Russia (including the Wagner Group/Africa Corps). The recent deal with **Pakistan** signifies an effort to modernize its air force and ground tech to gain a decisive edge over Tripoli.

The Government of National Unity (GNU):

The GNU is the internationally recognized interim government based in **Western Libya**.

- **Leader:** Prime Minister **Abdulhamid al-Dbeibah**.
- **Headquarters:** Tripoli.
- **Political Affiliation:** It was established in 2021 through a UN-led political process (the Libyan Political Dialogue Forum) intended to lead the country to national elections.

- **Military Characteristics:** Unlike the LNA, the GNU does not have a single unified army. Instead, it relies on a coalition of powerful, semi-autonomous **militias and armed groups** based in Tripoli, Misrata, and Zintan.
- **Strategic Goal:** The GNU seeks to maintain international legitimacy, control the Central Bank of Libya (to manage oil revenues), and eventually hold national elections—though these have been repeatedly delayed.
- **Foreign Support:** Primarily supported by **Turkey** (which provides significant drone technology and military advisors) and Qatar, with varying degrees of diplomatic backing from the UN and Western nations like Italy and the US.



India : The World's Fourth Largest Economy

Why in News? As of late 2025, official government data confirms that India has surpassed Japan to become the world's fourth-largest economy with a nominal GDP valued at \$4.18 trillion.

Key Highlights

- **Ranking Shift:** India has displaced Japan and is now trailing only the US, China, and

Germany.

- **Fastest Growing:** With a real GDP growth of **8.2%** in Q2 of FY 2025-26, India remains the fastest-growing major economy globally.
- **The 2030 Vision:** India is projected to overtake Germany by 2027-28 and reach a GDP of **\$7.3 trillion** by 2030, securing the 3rd rank.
- **International Confidence:** Global agencies like the World Bank, IMF, and Moody's have raised their growth forecasts, citing robust domestic demand.

Top 10 Largest Economies in the World (2025)



Rank	Country	GDP (USD)	2025 Projected Real GDP Growth (%)	GDP Per Capita (USD)
1	United States of America	\$30,34 trillion	2.7 %	90,510
2	China	\$19,53 trillion	4.6 %	13,230
3	Germany	\$4,92 trillion	0.8 %	58,740
4	India	\$4,39 trillion	6.5 %	2,910
5	Japan	\$4,27 trillion	1.1 %	33,940

TOP 10 Largest Economies by GDP (Current Prices) - 2025

How India Became the 4th Largest Economy?

Several factors have fueled this rapid expansion:

- **Domestic Consumption:** A massive middle class and rising urban consumption have driven internal demand, making India less dependent on global slowdowns.
- **Structural Reforms:** Simplification of the tax regime (GST) and the 2025 budget reforms (such as increasing the tax-free income limit to Rs12 lakh) have boosted disposable income.
- **Capital Expenditure (Capex):** Massive government spending on physical infrastructure (highways, ports, and renewable energy) has created a multiplier effect.
- **Digital Public Infrastructure (DPI):** The success of UPI and digital identity has formalized the economy and improved financial inclusion.

Challenges Ahead:

While the growth is impressive, several hurdles remain to reach the \$7.3 trillion goal:

- **Job Creation:** Ensuring that economic growth translates into high-quality jobs for the world's largest youth population.
- **Global Trade Headwinds:** Potential trade barriers or tariffs from major economies could impact India's export ambitions.
- **Skill Mismatch:** The rapid rise of AI and automation requires a massive upskilling effort (like the AI Pragya initiative) to keep the workforce relevant.
- **Regional Disparity:** Bridging the gap between highly industrialized states and developing regions like Purvanchal and Bundelkhand.

Way Forward:

- **Focus on High Middle-Income Status:** The ultimate goal is to move beyond a "developing" tag to a "high middle-income" status by the centenary year of independence (2047).
- **Export-Led Growth:** Moving toward a \$1 trillion merchandise export target by 2030.

Southern Transitional Council (STC): Mukalla Port

Why in the News? Saudi Airstrikes on Mukalla: Saudi warplanes targeted Yemen's southern port city following the unauthorized arrival of vessels from a UAE port.

- **Coalition Rupture:** The incident exposed a public and sharp division between Saudi Arabia and the UAE, who previously led the coalition against the Iran-aligned Houthi movement.
- **Open Confrontation:** Riyadh has labeled UAE-backed movements as an "imminent threat" to its national security, moving the conflict from a proxy dispute to an open confrontation.

Key Points of the Conflict:

The Mukalla Port Incident:

- **Weapon Shipments:** Saudi Arabia accused two ships from the UAE port of Fujairah of disabling tracking systems to unload weapons and armored vehicles for separatist forces.
- **Military Action:** The Saudi-led coalition conducted a "limited airstrike" at the port to neutralize what it deemed a threat to regional peace and stability.
- **Damage Reported:** While Saudi state media reported no casualties, local residents noted damage to nearby homes, and Yemeni media showed footage of burned vehicles.

The Role of the Southern Transitional Council (STC):

- **Separatist Movement:** The STC, formed in 2017, seeks the independence of South Yemen, which was a separate state until 1990.
- **UAE Support:** Backed by the UAE, the STC commands the Southern Armed Forces and controls strategic territory, including the city of Aden.
- **Political Defiance:** Despite being part of Yemen's Presidential Leadership Council, the STC has seized territory from Saudi-backed units and rejected orders from the central government.



The "Red Line" for Saudi Arabia:

- **Border Security:** Riyadh fears that instability in eastern provinces like Hadramout and al-Mahra will spill over into its own borders.
- **Eastern Interests:** These provinces are vital because they border Saudi Arabia, house key land routes to Oman, and contain significant oil reserves.
- **Warning to Partners:** Saudi Arabia has declared any threat to its national security a "red line" and warned that it will act to prevent any power shift along its southern frontier.

The UAE and Yemen Government Response:

- **UAE Denial:** The UAE rejected accusations of directing STC military operations and claimed the intercepted shipments were intended for its own counterterrorism teams.

- **Military Withdrawal:** Following the tensions, the UAE Ministry of Defence announced the termination and withdrawal of its remaining counterterrorism teams from Yemen.
- **Government Escalation:** Rashad al-Alimi, head of Yemen's Presidential Leadership Council, canceled a defense pact with the UAE and ordered their forces to leave within 24 hours.
- **Blockade:** Al-Alimi imposed a temporary no-fly zone and a sea and ground blockade on ports to reassert state authority.

Regional Implications:

- **Divided Anti-Houthi Front:** The escalation creates a new front where former allies are fighting each other while the Houthi movement remains firmly entrenched in the north.
- **Humanitarian Crisis:** A new wave of internal conflict threatens to worsen what is already one of the world's most severe humanitarian crises, with over 150,000 people killed in a decade of war.



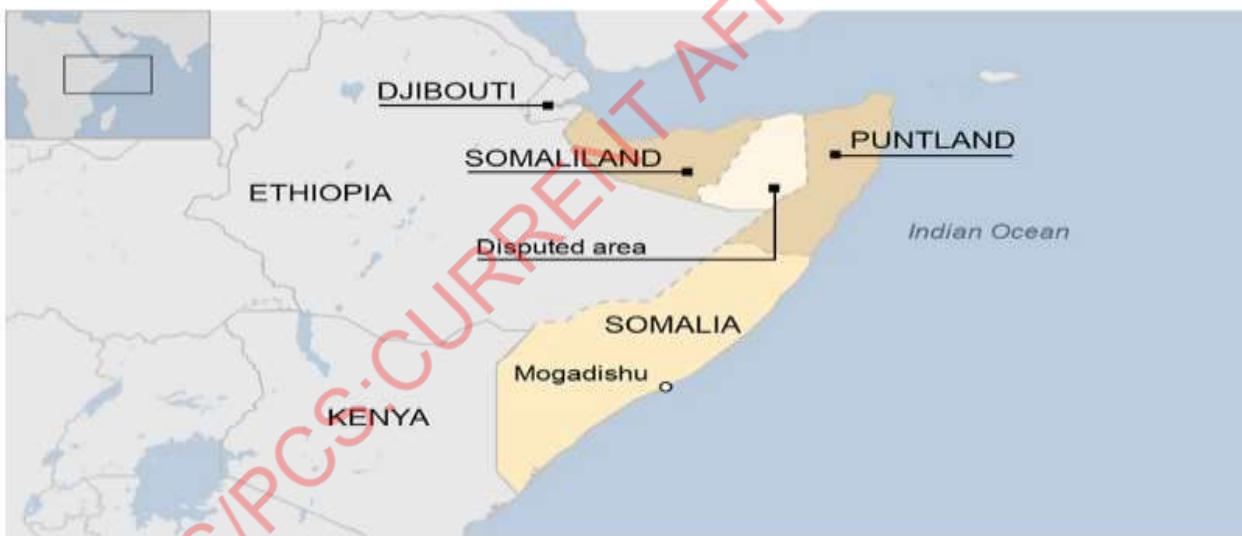
Republic of Somaliland

Why in the news? On December 26, 2025, Israel became the first country in the world to formally recognize the Republic of Somaliland as an independent and sovereign state. This is a historic breakthrough for Somaliland, which has operated as a de facto independent state since 1991 but had never received official recognition from a UN member state until now.

Strategic and Geopolitical Points:

The "Abraham Accords" Expansion:

- **The Framework:** Prime Minister Netanyahu framed the recognition as being "in the spirit of the Abraham Accords."
- **Regional Strategy:** By recognizing Somaliland, Israel aims to expand its network of allies in the Horn of Africa and the Muslim world, even as it faces diplomatic tension elsewhere.
- **Somaliland's Role:** President Abdirahman Mohamed Abdullahi has expressed readiness for Somaliland to officially join the Accords.



Maritime and Security Interests (The Red Sea):

- **Berbera Port:** Somaliland controls a critical coastline along the Gulf of Aden. The Port of Berbera is a vital gateway to the Red Sea.
- **Countering Houthis:** Proximity to Yemen makes Somaliland a "forward base" for monitoring and conducting operations against Houthi militants, who have frequently targeted Red Sea shipping.
- **UAE Influence:** The United Arab Emirates already has a military presence in Berbera, and Israel's recognition aligns with the UAE's regional security goals.

Monitoring China:

- **Djibouti Alternative:** China has a major military base in neighboring Djibouti. Israel and its allies (like the US) view Somaliland as a strategic "hedge" to monitor and counter growing Chinese influence in the Horn of Africa.
- **The Taiwan Factor:** Somaliland is one of the few places that recognizes Taiwan. By supporting Somaliland, Israel aligns with a territory that already challenges China's "One China" policy.

Domestic Autonomy vs. International Law:

- **Functioning State:** The news highlights that Somaliland already has its own currency, police, and democratic elections, making it a more stable partner than the rest of Somalia.
- **Legal Successor:** Somaliland claims to be the successor of the 1960 "State of Somaliland" (the former British protectorate), which was independent for five days before joining Somalia.

Regional and Global Reactions:

- **Somalia's Condemnation:** Somalia views this as a "deliberate attack" on its sovereignty and territorial integrity.
- **African Union (AU):** The AU has "firmly rejected" the move, fearing it sets a dangerous precedent for other secessionist movements across the continent.
- **International Backlash:** Nations like Turkey, Egypt, and Djibouti have condemned the recognition, viewing it as interference in Somalia's internal affairs.
- **US Uncertainty:** While some US politicians (like Senator Ted Cruz) support the move, President Trump has reportedly expressed skepticism, famously asking, *"Does anyone know what Somaliland is, really?"*

History of Somaliland:

The Colonial Split (1884–1960)

The roots of the current situation lie in the **"Scramble for Africa."** Unlike most of the Somali-inhabited territories, the region was divided between two different European powers:

- **British Somaliland (North):** The British established a protectorate in 1884. They governed it with a "light touch," primarily using it to supply meat for their naval base in Aden.
- **Italian Somaliland (South):** Italy colonized the southern region, establishing a much more direct and invasive administrative system.

Five Days of Independence (June 1960):

This is the legal "smoking gun" for Somaliland's current claim to sovereignty:

- On **June 26, 1960**, British Somaliland gained independence and became the **State of Somaliland**.
- It was a sovereign nation for **five days**, during which it was recognized by **35 countries** (including the US, UK, and Israel).
- On **July 1, 1960**, driven by a romanticized vision of "Pan-Somalism," the State of Somaliland voluntarily entered a union with the newly independent Italian Somaliland to form the **Somali Republic**.

The Failed Union and "Somalisation" (1969–1991):

The union was troubled from the start. Northerners felt marginalized by the southern-dominated government in Mogadishu.

- **Siad Barre's Rise:** In 1969, General Siad Barre took power in a coup. He attempted to eliminate clan identities through a process of "Somalisation."
- **The Rebellion:** By the 1980s, the **Somali National Movement (SNM)** was formed in the north to fight against Barre's increasingly oppressive regime.
- **The Genocide:** Between 1987 and 1989, Barre responded with extreme brutality. He ordered the aerial bombardment of Hargeisa (the capital of Somaliland), killing between **50,000 and 200,000 people**. This is often referred to as the **Isaaq Genocide**.

Re-Declaration of Independence (1991–Present):

As the central government in Mogadishu collapsed into total civil war in 1991, the SNM and northern clan elders decided to dissolve the union.

- **May 18, 1991:** At the Grand Conference in Burao, Somaliland re-asserted its independence based on its **1960 colonial borders**.
- **State Building:** While the rest of Somalia struggled with warlords and Al-Shabaab, Somaliland spent 30 years building a stable democracy with its own:
 - **Currency:** The Somaliland Shilling.
 - **Democratic Elections:** They have held multiple peaceful, one-man-one-vote elections.

Security: A disciplined army and police force that have kept the region largely free of terrorism.

Facts for Prelims

Operation Absolute Resolve

Why in News? On January 3, 2026, the United States launched "Operation Absolute Resolve," a large-scale military strike in Venezuela. U.S. forces (specifically Delta Force) entered Caracas, resulting in the **capture of President Nicolás Maduro** and First Lady Cilia Flores. They were immediately flown to New York to face criminal charges in a U.S. federal court.

The Prohibition of the Use of Force (UN Charter):

The most significant legal hurdle for the U.S. is **Article 2(4) of the UN Charter**, which mandates that all member states must refrain from the threat or use of force against the **territorial integrity or political independence** of any state.

- **The Violation:** Legal scholars and the UN Secretary-General have noted that a unilateral military strike on a capital city **to seize a leader** is a direct breach of this article.
- **The U.S. Defense:** The U.S. has invoked "**Self-Defense**" (Article 51), arguing that Maduro's alleged "narco-terrorism" acts as a non-traditional weapon of mass destruction threatening American lives. However, traditional law requires an "actual armed attack" to trigger this right.

Sovereign Immunity of Heads of State:

Under **Customary International Law**, sitting heads of state enjoy "personal immunity" (*ratione personae*), which protects them from the criminal jurisdiction of foreign courts.

- **The Dispute:** Generally, a sitting president cannot be arrested by another country.
- **The U.S. Loophole:** The U.S. government (and many others) **does not recognize Maduro as the legitimate president** of Venezuela, following the disputed 2024 elections. U.S. courts typically follow the executive branch's lead: if the White House says he isn't the president, the court may rule he has no immunity.

The "Ker-Frisbie" Doctrine:

A unique feature of U.S. law is the **Ker-Frisbie Doctrine**. This rule states that U.S. courts can put a defendant on trial **regardless of how they were brought to the country**—even if they were kidnapped or forcibly abducted from a foreign nation.

- This was the same legal basis used to try General **Manuel Noriega** of Panama in 1989 after a similar U.S. invasion.

Lack of International Mandate:

For a military intervention to be clearly legal under international law, it usually requires:

- **UN Security Council Authorization:** (Which did not happen; Russia and China would have vetoed it).
- **Consent of the Host State:** (The Venezuelan government has called the move an "act of aggression" and "kidnapping").

I-PAC (Indian Political Action Committee)

Why is I-PAC in the news? On **January 8 and 9, 2026**, the ED conducted raids at multiple locations in Kolkata and Delhi linked to I-PAC. The key points of the controversy include:

- **The Coal Smuggling Link:** The ED claims the raids are part of an investigation into a **money laundering case** involving illegal coal smuggling and hawala transactions. They allege that proceeds from this crime were used to fund political activities (specifically citing the 2022 Goa Assembly elections).
- **Mamata Banerjee's Intervention:** In an unprecedented move, West Bengal CM Mamata Banerjee personally arrived at the home of I-PAC chief Pratik Jain and the I-PAC office during the raids.
- **The "Data Loot" Allegation:** The CM accused the ED of "stealing" the Trinamool Congress (TMC) party's **election strategy**, candidate lists for the 2026 polls, and confidential data under the guise of an investigation.
- **Legal Face-off:** Both I-PAC/TMC and the ED have moved the **Calcutta High Court**. The ED is seeking a probe against the CM for "obstructing" their work and allegedly removing evidence (hard disks and files), while the TMC is challenging the legality of the raids.

What is I-PAC?

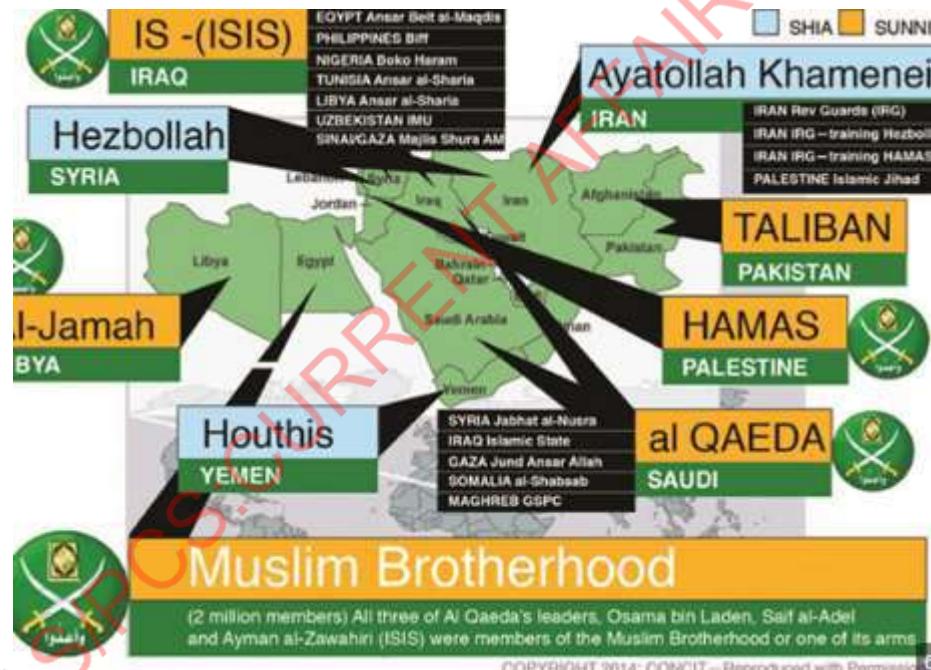
I-PAC (Indian Political Action Committee) is India's most prominent political consultancy firm.

- **Purpose:** It functions as a professional bridge between citizens and political parties. Instead of being a formal part of a party, it provides "election management" services.

- **Core Services:** Strategic planning, data analytics, social media management, on-ground voter outreach, and narrative building.
- **Famous Campaigns:** Founded by **Prashant Kishor** (who exited in 2021), the group is known for successful campaigns like *Abki Baar Modi Sarkar* (2014), *Nitish ke Saat Nishchay* (Bihar), and notably, the TMC's *Didi Ke Bolo* in West Bengal.
- **Current Role:** It serves as the primary "war room" and IT cell for the TMC in West Bengal, helping them prepare for the upcoming 2026 Assembly elections.

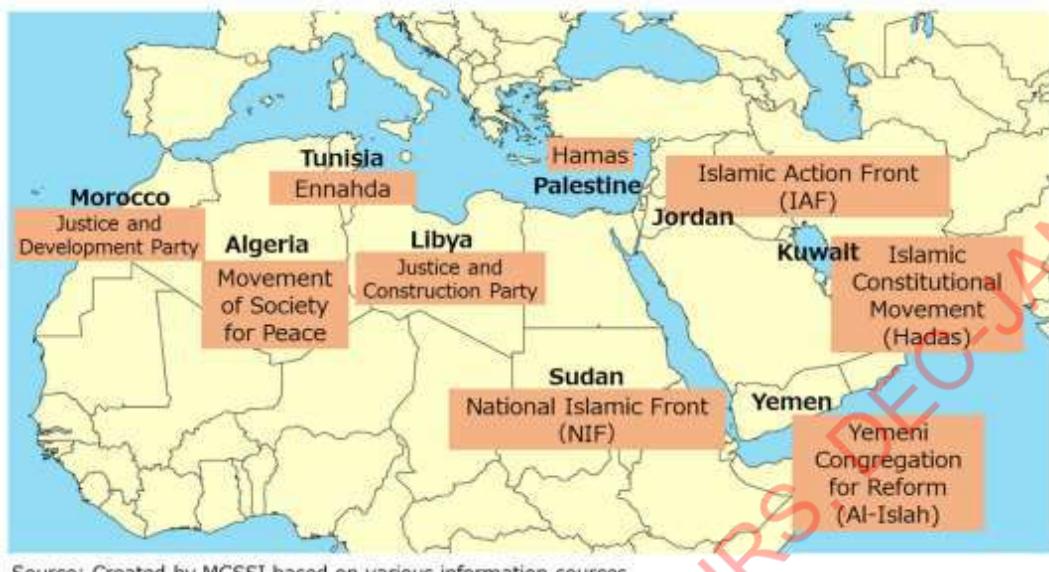
Muslim Brotherhood Organisation

Why in news ? Donald Trump has recently declared Muslim Brotherhood as an Terrorist organization .



the Muslim Brotherhood is a transnational Sunni Islamist political organization, founded in Egypt in 1928 by Hassan al-Banna, aiming to establish an Islamic state and society through gradual Islamization, evolving from a movement resisting Western influence to a complex network with charitable, political, and sometimes militant wings, often facing bans and controversy, including recent terrorist designations for some of its branches by entities like the U.S. government and various Arab nations.

Figure 3: Major political parties in the Middle East aligned with the Muslim Brotherhood



Key Aspects:

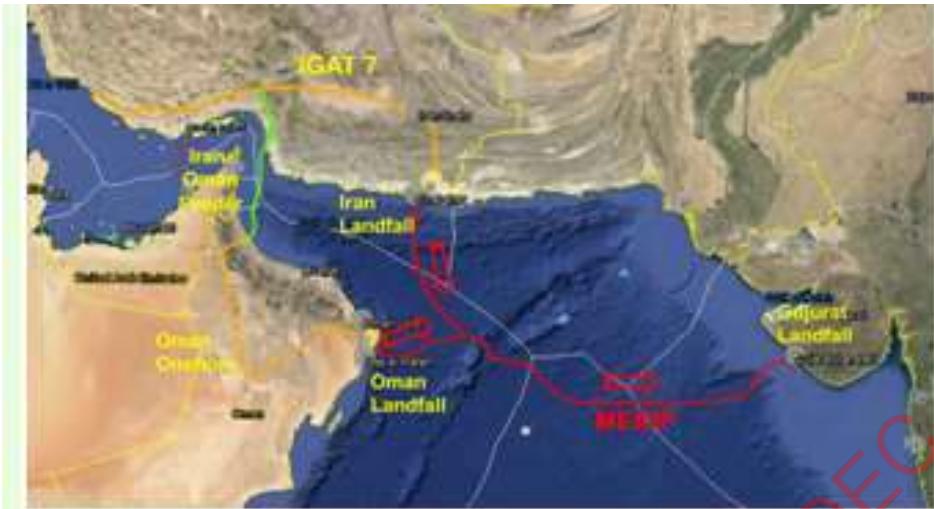
- Origins:** Founded in Egypt to counter Westernization and revive Islamic principles in public life.
- Ideology:** Believes Islam provides a comprehensive system for all aspects of life, advocating for a gradual shift towards a purely Islamic society and governance.
- Structure:** A transnational network with local chapters, influential across the Middle East and beyond, often operating discreetly.
- Controversy & Actions:**
 - Engaged in political activism, charitable work, and sometimes militant activities, leading to bans in Egypt (since 2013) and other countries.
 - Has faced accusations of violence, destabilization, and links to terrorism, prompting designations by some governments.

Its political arm in Egypt won the 2012 presidential election but was overthrown.

Middle East–India Deepwater Pipeline (MEIDP)

The Middle East–India Deepwater Pipeline (MEIDP) is a proposed 1,300 km subsea natural gas pipeline connecting major Middle Eastern gas fields to India.

It aims to create a direct, secure, long-term energy corridor across the Arabian Sea.



Aims:

- Diversify India's natural gas import routes beyond LNG terminals.
- Strengthen India's energy security through stable, pipeline-based supply.
- Enhance strategic cooperation with Iran and Oman.
- Reduce transportation costs and dependence on chokepoints like the Strait of Hormuz.

Project Route / Process:

Phase 1:

- Pipeline originates from Chabahar (Iran).
- Another branch begins at Ras Al-Jafan (Oman).

Phase 2:

- Both branches merge in the deepwater region of the Gulf of Oman.

Phase 3:

- A single deepwater pipeline crosses the Arabian Sea.

Terminal Point:

Landfall at Porbandar, South Gujarat (India).

Operation Trashi-I/ White Knight Corps

Operation Trashi-I: This specific mission was launched by the Army's **White Knight Corps** (16 Corps) on January 19, 2026.

Intelligence-Led: The search operation was triggered by specific intelligence regarding the presence of terrorists in the upper reaches of Kishtwar.

- The **White Knight Corps** (also known as the **16 Corps**) is one of the most critical and largest operational formations of the Indian Army. It is part of the **Northern Command** and is headquartered at **Nagrota**, Jammu and Kashmir.
- It is specifically designed to handle both the conventional threat from across the border and the internal security challenge of counter-insurgency.

Core Responsibility & Geography:

The White Knight Corps is responsible for the security of the **Jammu region**. Their area of operation is vast and diverse, spanning from the plains of the International Border (IB) to the rugged, high-altitude mountains of the Pir Panjal range.

- **Border Guarding:** They guard a significant portion of the **Line of Control (LoC)**.
- **Counter-Terrorism:** They are the primary force conducting operations in districts like **Rajouri, Poonch, Doda, Kishtwar, and Ramban**.

Operational Roles:

The Corps maintains a dual-role capability:

- **Conventional Warfare:** Preparing for a full-scale war, focusing on mountain warfare and defending the territory against external aggression.

Counter-Insurgency (CI) / Counter-Terrorism (CT): Under the umbrella of "**Operation Rakshak**," the Corps works to eliminate terrorist modules. They oversee several **Rashtriya Rifles (RR)** sectors that are specifically trained for jungle and mountain guerrilla warfare.

Salafi jihadism

Salafi jihadism, also known as Salafi-jihadism, jihadist Salafism and revolutionary Salafism, is a religiopolitical Sunni Islamist ideology that seeks to establish a global caliphate through armed struggle.

The Strategic Crisis in the Sahel (Mali, Burkina Faso, Niger):

The "Central Sahel" remains the global epicenter of jihadist activity, now accounting for nearly half of all global terrorism-related deaths.

- **JNIM Siege of Bamako:** Throughout 2025, the al-Qaeda-affiliated **JNIM** (Jama'at Nasr al-Islam wal Muslimin) has effectively placed the Malian capital, Bamako, under a "siege of attrition." In November 2025, JNIM expanded a blockade on fuel imports, causing a nationwide energy crisis and forcing the closure of schools and businesses.



- **Near-Collapse of the Malian Junta:** Analysts from the Soufan Center and Atlantic Council warned in December 2025 that the **Malian military government** is on the brink of collapse. A JNIM takeover would represent the **first time an al-Qaeda affiliate** has seized formal control of a sovereign state since the Taliban's 2021 return in Afghanistan.
- **ISSP Expansion:** The **Islamic State Sahel Province (ISSP)** has reached its highest level of lethality. In 2025, it conducted record numbers of large-scale attacks in southern Niger and moved freely across the Mali-Niger border. On **December 25, 2025**, the United States conducted Tomahawk missile strikes against ISSP camps in northwest Nigeria, marking a significant escalation in foreign intervention.

Ol Chiki script

Why in News ? The Ol Chiki script (used for writing the Santali language) is in the news because 2025 marks its centenary year, and the President of India, Droupadi Murmu, released the Constitution of India in the Santali language written in **Ol Chiki script**.

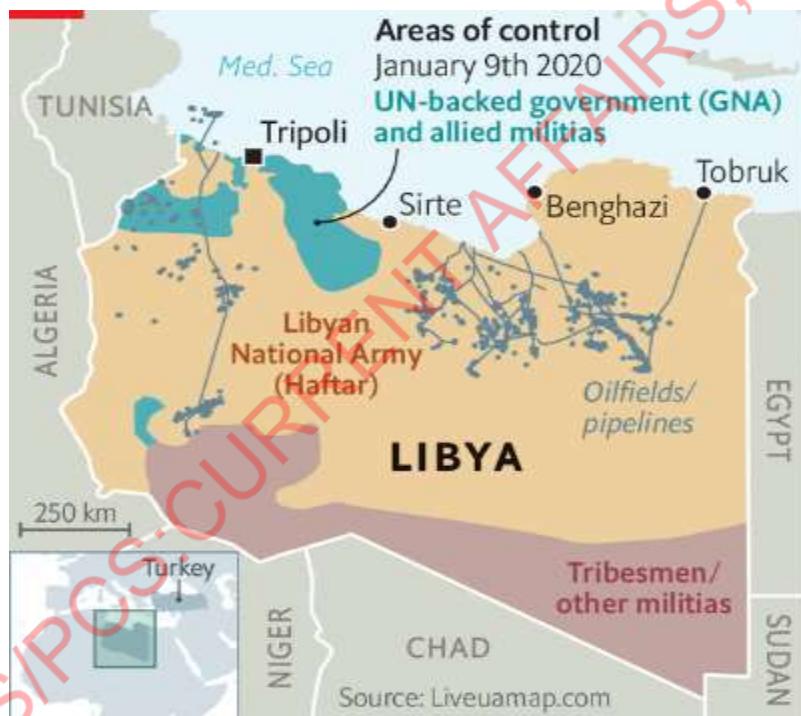
About Ol Chiki Script:

The Ol Chiki script is the official writing system of the Santali language, **created in 1925** by **Pandit Raghunath Murmu**. It has **30 letters**, is **written left to right**, and is unique because its

characters are designed to resemble natural shapes and objects familiar to Santali speakers

- Invented in 1925 by Pandit Raghunath Murmu, a social reformer and writer from Odisha.
- Developed specifically for the Santali language, which belongs to the Austroasiatic family.
- Before Ol Chiki, Santali was written in scripts like Devanagari, Bengali, and Odia, but none fully captured its phonetics

The Government of National Unity (GNU)



The GNU is the internationally recognized interim government based in **Western Libya**.

- **Leader:** Prime Minister **Abdulhamid al-Dbeibah**.
- **Headquarters:** Tripoli.
- **Political Affiliation:** It was established in 2021 through a UN-led political process (the Libyan Political Dialogue Forum) intended to lead the country to national elections.

Military Characteristics: Unlike the LNA, the GNU does not have a single unified army. Instead, it relies on a coalition of powerful, semi-autonomous **militias and armed groups** based in Tripoli, Misrata, and Zintan

- **Strategic Goal:** The GNU seeks to maintain international legitimacy, control the Central Bank of Libya (to manage oil revenues), and eventually hold national elections—though these have been repeatedly delayed.
- **Foreign Support:** Primarily supported by **Turkey** (which provides significant drone technology and military advisors) and Qatar, with varying degrees of diplomatic backing from the UN and Western nations like Italy and the US.

VAID/ICS:IAS/PCS:CURRENT AFFAIRS, DEC-JAN.,2026