ENSURE IAS

Current Affairs Total (CAT)

JANUARY 2025

Scan Here

Price ₹250

7900-44-7900 | www.ensureias.com

INDEX

Click Here for INDEX

Click Here for INDEX

A. Polity & Governance

Click Here for INDEX

1. Right to Access to Justice Not Absolute: Supreme Court

1. In January 2025, the Supreme Court imposed a penalty of Rs. 1 Lakh on a litigant filing **repetitive and frivolous litigations**.
2. The case was titled ***Pandurang Vithal Kevne vs Bharat Sanchar Nigam Limited.***
3. In the case, the court dismissed a **Special Leave Petition (SLP)** filed by the petitioner (an ex-employee) against Bharat Sanchar Nigam Limited (BSNL) challenging his dismissal Order.
4. The court highlighted that the case was an example of the **blatant misuse and abuse** of the judicial process, leading to burdening of the judiciary.
5. It thus held that the **right to access justice is not absolute** and must be exercised **responsibly**.

What is a Special Leave Petition?

1. The **Special Leave Petition** is granted by the Supreme Court under **Article 136** of the Constitution.
2. It can be given in appeal against the **order or judgment of any court or tribunal** in India, when any **substantial question of law** is involved, or **gross injustice** has been done.
3. It is a **discretionary power** of the Supreme Court.
4. **Time Limit to file:**
   a. Within **90 days** of the High Court judgment.
   b. Within **60 days** against the order of the High Court refusing to grant the certificate of fitness for appeal to SC.

What is the 'Right to Access to Justice'?

1. It is the right of individuals to seek **legal remedies** and **obtain fair and effective resolution** of disputes through a judicial process.
2. In ***Anita Khushwa v. Pushpa Sadan*** **(2016),** the Supreme Court held that **'access to justice'** is a **fundamental right** under,
   a. **Article 14**: The Right to Equality which includes Equality before the law and Equal protection of the law.
   b. **Article 21**: The Right to Life and Personal Liberty
3. The Court identified **four facets of 'access to justice'**:
   a. **Effective adjudicatory mechanisms** must be provided by the state
   b. **Reasonable accessibility** of such mechanisms
   c. **Speedy** adjudication process
   d. **Affordable** adjudicatory processes
4. The Court also pointed out that **justice delayed is 'justice denied'** as delays hinder the proper access of justice.
5. Any person whose fundamental right to access justice is denied can approach the Court for redressal under **Article 32 of the constitution** (Right to Constitutional Remedies).
6. However, in the recent judgement, the Court pointed out that repetitive and meritless pleas **pollute the stream of justice** by putting **hurdles in its dispensation** to others.
7. Thus, **right to access justice is not absolute**.

What are the other provisions related to 'access to justice'?

1. **Article 39A of the Constitution**: Directs the state to ensure **equal justice and free legal aid** for the poor and marginalized.
2. **Legal Services Authorities Act, 1987:**
   a. Establishes **NALSA** (National Legal Services Authority), SLSAs (State Legal Services Authorities), and DLSAs (District Legal Services Authorities) to provide free legal aid.
   b. Covers **marginalized groups** such as women, SC/ST communities, and economically weaker sections.
3. **Public Interest Litigation (PIL):**
   a. PIL allows individuals and organizations to file cases in the **interest of the public**, especially for marginalized and underprivileged sections of society.

Click Here for INDEX

b. It thus removes the barrier of ***locus standi*** (only people with a direct connection to a legal issue can participate in the legal process).

4. **Alternative Dispute Redressal (ADR)**: It involves resolving disputes, grievances, or complaints without going through the formal court system. The methods include **Lok Adalat, Arbitration, Mediation, Conciliation** and **Negotiation.**
5. **Judicial Interpretations**
   a. ***Swapnil Tripathi v Supreme Court of India (2018)***: The SC held that **live streaming of court proceedings** is part of the right to access justice.
   b. ***Hussainara Khatoon v. State of Bihar (1979):*** The SC recognized the right to speedy trial as part of Article 21.

What are frivolous litigations?

1. Frivolous litigation refers to legal proceedings that do not have **merit or reasonable chance** of success and lack a **substantial basis in law or fact**.
2. They are often filed with the intention to **harass or annoy** the opposing party.
3. In ***Subrata Roy Sahara vs Union of India & Ors*** (2014), the Supreme Court held that the Indian judicial system was **grossly afflicted** with frivolous litigations.

What are the other issues surrounding 'access to justice'?

1. **Judicial Pendency:** According to **PRS Legislative Research**, there are around **4.5 crore** pending cases in India.
2. **Infrastructural Gaps:** There are issues like limited courts in rural areas, lack of basic amenities in courts and poor digital infrastructure.
3. **High Cost of Litigation:** The legal fees and court expenses are high in India. Moreover, delays further increase costs.
4. **Lack of awareness:** Several marginalized sections are aware about the free legal aid under **Legal Services Authorities Act, 1987.**

What is the way forward for improving access to justice?

1. **Limiting frivolous litigations**
   a. Impose **heavier Costs** on frivolous cases as done in cases like ***Subrata Roy Sahara v. Union of India (2014).***
   b. **Malicious prosecution** for frivolous lawsuits as done in various jurisdictions such as the US.
   c. **Pre-Screening of Cases**: There must be evaluation of cases before litigation.
2. **Reducing Pendency & Delays:**
   a. Expansion of **fast-track courts** for crimes against women, children, and corruption cases.
   b. Introducing **statutory time limits** for civil and criminal case resolution
3. **Improvement of Judicial Infrastructure**:
   a. Improvement of courtrooms, digital filing systems, and accessibility for disabled persons. For instance, through **National Judicial Infrastructure Authority of India** (NJIAI).
4. **Use of Technology**: Such as use of **Online Dispute Resolution (ODR),** expansion of **e-Courts project** ensuring online filing and virtual hearings.
5. **Improving legal literacy**: Through legal education in schools and community based legal awareness programs.

India's New Trial in Absentia Law

1. Trial in absentia is a legal process where a trial is conducted without the accused present, typically when the accused is evading trial or has absconded.
2. The term **"absinthe"** is derived from Latin, meaning **"in the absence of."** Previously, this process was not permitted under the Indian Criminal Procedure Code (CrPC).

Recent Legal Changes

On December 25, 2023, President Droupadi Murmu gave assent to three major bills to replace key criminal laws in India. These include:

1. **Bharatiya Nyaya Sanhita 2023** – Replaces the Indian Penal Code (IPC).
2. **Bharatiya Nagarik Suraksha Sanhita 2023 (BNSS-2023)** – Replaces the CrPC.

3. **Bharatiya Sakshya Bill 2023** – Replaces the Indian Evidence Act.

Among these, the **BNSS-2023** introduces significant changes, including the provision for **trial in absentia**.

Key Provisions of the BNSS-2023 on Trial in Absentia

The BNSS-2023 law allows trials to proceed in the absence of the accused under specific conditions. Key sections include:

1. **Section 355**: Judges or magistrates can proceed with a trial without the accused if:
   a. The accused's presence is not necessary for justice.
   b. The accused is disrupting court proceedings.
2. **Section 356**: This section specifically addresses proclaimed offenders who abscond to avoid trial. It mandates that:
   a. A **90-day waiting period** is required after charges are framed before the trial can begin.
   b. The trial continues even if the accused is arrested or appears later, and the judgment can be pronounced in the accused's absence.

Importance of the New Law

1. This provision is crucial for ensuring that individuals who abscond, particularly those involved in serious crimes like terrorism, cannot evade justice by fleeing the country.
2. By conducting trials in absentia, India strengthens its case for extraditing such individuals to face trial.
3. Additionally, this law helps maintain the legal integrity of the judicial system by preventing delay in justice.

Global Context of Trial in Absentia

India joins a number of countries that allow trials in absentia, particularly for serious crimes. These countries include:

1. **United States**: Allows trial in absentia for certain crimes, especially terrorism, though defendants still retain the right to defense.
2. **China**: Permits trial in absentia for individuals involved in terrorism, economic crimes, or corruption.
3. **Bangladesh**: Conducts trials in absentia for terrorism and war crimes, especially when the accused is outside the country.
4. **European Union (France, Italy, Spain)**: Several EU countries allow trial in absentia for severe crimes like terrorism and organized crime, ensuring the right to appeal.
5. **Saudi Arabia & UAE**: These nations allow trial in absentia for terrorism, drug trafficking, and organized crime.

Examples of Trials in Absentia

Notable individuals who have been tried in absentia include:

1. **Mengistu Haile Mariam**: The former communist dictator of Ethiopia, who was sentenced to death in absentia in 2008 for genocide.
2. **Martin Bormann**: A senior Nazi official convicted of war crimes during the Nuremberg Trials in 1945-46, in absentia.

3. Karnataka Legalizes Passive Euthanasia for Terminally Ill Patients

1. In January 2025, Karnataka became the **second Indian state, after Kerala**, to implement the Supreme Court's directive permitting passive euthanasia for terminally ill patients.
2. This move underscores the evolving legal and ethical landscape surrounding end-of-life care in India.

Understanding Euthanasia: Passive vs. Active

1. **Passive Euthanasia**: Involves withholding or withdrawing medical treatments that prolong the life of a terminally ill patient, allowing natural death to occur. It is legal in India under specific guidelines.
2. **Active Euthanasia**: Involves deliberate medical intervention, such as administering lethal substances to end a patient's life. It remains illegal in India.

The distinction between passive and active euthanasia in India is rooted in the fact that, in passive euthanasia, death results from the patient's underlying medical condition, while active euthanasia involves direct intervention to cause death.

Key Highlights of Karnataka's Order on Passive Euthanasia

1. **Implementation of Supreme Court Directive**: Karnataka's move follows the Supreme Court's 2018

Click Here for INDEX

ruling on passive euthanasia. The state's decision also aligns with updated 2023 guidelines, which simplified the process of executing passive euthanasia and living wills.

2. **Formation of Medical Boards**: Hospitals across Karnataka must establish medical boards to evaluate patients eligible for passive euthanasia. These boards, consisting of registered medical practitioners appointed by district health officers, will assess and certify cases where life-support withdrawal is appropriate.
3. **Advance Medical Directives (Living Wills)**: The order allows patients to create Advance Medical Directives (AMDs) or Living Wills, specifying their wishes for medical treatment if they become incapacitated. Medical boards will review and respect these directives before making decisions.
4. **Procedure for Approving Passive Euthanasia**:
   a. A primary medical board will first examine the patient's condition.
   b. If passive euthanasia is deemed appropriate, the case is reviewed by a secondary board.
   c. Final approval is granted after strict legal and ethical guidelines are followed to prevent misuse.
5. **Objectives of the Order**:
   a. To respect patient autonomy and allow terminally ill individuals to avoid prolonged suffering.
   b. To provide legal clarity for medical professionals handling end-of-life care.
   c. To ensure ethical safeguards against misuse or coercion.

Legal Framework: Euthanasia in India

1. **Aruna Shanbaug Case (2011)**: Aruna Shanbaug, a nurse in a persistent vegetative state for 42 years, became the focal point of the debate on euthanasia in India.
   - The Supreme Court's ruling allowed passive euthanasia under certain conditions, including withdrawal of life support in cases of permanent vegetative state, with High Court consent.
2. **Common Cause v. Union of India (2018)**:
   a. The Supreme Court recognized the Right to Die with Dignity as a fundamental right under Article 21 of the Constitution.
   b. Passive euthanasia was legalized, and the concept of Living Wills was introduced.
   c. A two-tier approval process was established, involving both medical boards and judicial oversight.
3. **Supreme Court Guidelines Simplification (2023)**: The 2018 guidelines were complex and difficult to implement.
   - In 2023, the Supreme Court simplified the process for executing a Living Will, reduced legal hurdles, and ensured faster decision-making by medical authorities.

Positive Impacts of Legalizing Passive Euthanasia

1. **Respecting Patient Autonomy and Right to Die with Dignity**: Legalizing passive euthanasia respects personal autonomy, allowing patients to control their end-of-life decisions.
2. **Relief from Prolonged Pain and Suffering**: Terminal illnesses like cancer, ALS (Amyotrophic Lateral Sclerosis), and multiple organ failure cause extreme pain. Passive euthanasia can provide relief when even palliative care is insufficient.
3. **Reducing Financial Burden on Families**: Prolonged ICU care is financially draining. Many families face economic hardship while sustaining a terminally ill patient with no chance of recovery.
4. **Easing the Burden on Healthcare Resources**: Passive euthanasia can help free up scarce ICU beds and ventilators, particularly important in times of medical crises like the COVID-19 pandemic.

Navigating the Pitfalls: The Need for Strict Monitoring

1. **Potential for Misuse and Coercion**: There is a risk that family members or medical institutions might pressure patients into choosing euthanasia for personal or financial reasons.
   - **For example**, some elderly patients in the Netherlands have reported feeling pressured into euthanasia.
2. **Ethical and Moral Concerns**: Many religious and ethical traditions oppose euthanasia. The Catholic Church, for instance, believes that only God should end life, and Hindu philosophy emphasizes the importance of natural death as part of the life cycle.

3. **Psychological Burden on Healthcare Workers**: Physicians, who take an oath to "do no harm," may experience emotional difficulty in ending a patient's life, even when it is legally permitted.
4. **Risk of Slippery Slope**: There is a concern that legalizing passive euthanasia could lead to the demand for active euthanasia or euthanasia for non-terminal conditions like mental illness or disabilities. This has been observed in countries like Canada, where euthanasia laws initially limited it to terminally ill patients but later expanded to include those with severe psychiatric conditions.
5. **Impact on Palliative Care Development**: Some argue that resources should be invested in improving palliative care instead of legalizing euthanasia. In India, palliative care infrastructure is still underdeveloped, with few specialized centers available to manage end-of-life care.

Global Practices

1. **Netherlands (Legal Since 2002)**: Both passive and active euthanasia are allowed under strict medical guidelines. Patients must have unbearable suffering with no hope of recovery and must make repeated requests for euthanasia.
2. **United States (Varied Laws by State)**: Some states, like Oregon, Washington, and California, allow physician-assisted suicide for terminally ill patients with a prognosis of six months or less to live.
3. **India (Passive Euthanasia Only)**: India permits only passive euthanasia, following the Supreme Court's guidelines. States like Kerala and Karnataka have implemented these court orders at the state level.

Way Forward

Euthanasia presents both benefits and challenges. While it **respects patient autonomy** and alleviates suffering, it raises significant **moral, ethical, and legal concerns**. To address these issues, stronger legal safeguards and improved palliative care are crucial to prevent misuse while ensuring **dignity for terminally ill patients**.

Going forward, states must ensure proper implementation, ethical medical oversight, and legal clarity. A comprehensive pan-Indian law on passive euthanasia with clear guidelines and robust mechanisms would provide greater legal certainty and safeguard patient rights while preventing exploitation.

4. Domicile-Based PG Medical Admissions Unconstitutional

Click Here for INDEX

1. In a significant ruling, the Supreme Court of India, in the case **Tanvi Behl v. Shrey Goel and others (2025)**, declared domicile-based reservations for Post-Graduate (PG) medical admissions unconstitutional.
2. The ruling came after appeals were made against a decision by the Punjab and Haryana High Court, which had already scrapped such reservations.

What is Domicile-Based Reservation?

Domicile-based reservation is a practice where states allocate a portion of PG medical seats specifically for candidates who are residents of that state. In India, PG medical admissions are divided as follows:

1. The **Centre** conducts counseling for **50%** of the total intake.
2. The remaining **50%** of seats are filled through state-specific counseling bodies, where a quota for domicile candidates is applied.

Supreme Court's Ruling on Domicile-Based PG Admissions

The Supreme Court ruled that domicile-based reservations in PG medical admissions were unconstitutional for the following reasons:

1. **Violation of Equality**: Domicile reservations create inequality among students based on their state of residence, which violates **Article 14 (Right to Equality)** of the Indian Constitution.
2. **Impeding Professional Mobility**: The ruling emphasized that Indian citizens have the constitutional right to reside and practice their profession anywhere in India.
   - Domicile-based restrictions in PG medical admissions impede this mobility and the freedom to practice medicine in different states.
3. **Merit-Based Admission**: The Court reiterated that PG medical admissions should be determined based on **merit** through the **National Eligibility cum Entrance Test (NEET)**, rather than domicile, ensuring a uniform and fair selection process across the country.

Click Here for INDEX

4. **Impact on Existing Admissions**: The Court clarified that the ruling would not affect admissions that have already been granted based on domicile-based reservations.
5. **Clarification on Domicile vs. Residence**:
   a. **Domicile** refers to a person's legal permanent residence, not simply their place of current residence.
   b. India recognizes a **single domicile system** – 'Domicile of India.' State-specific domiciles are not legally valid.
6. **Historical Context**: The Court contrasted this ruling with the **1984 Dr. Pradeep Jain vs. Union of India** case, where residence-based reservations were allowed for **MBBS admissions** due to states' investments in medical infrastructure.
   - However, the Court pointed out that this logic does not apply to PG medical courses.

Constitutional Provisions Involved

The ruling invoked several key constitutional provisions:

1. **Article 14**: Right to Equality.
2. **Article 15**: Prohibits discrimination on grounds of religion, race, caste, sex, or place of birth.
3. **Article 16**: Equal opportunity in public employment.
4. **Article 19**: Protects the freedom to reside and settle in any part of India.
5. **Article 5**: Defines the Domicile of India.

Pros and Cons of Domicile-Based Reservation in Education

Pros:

1. **Local Representation**: Ensures local students have better representation and opportunities in state-run educational institutions.
2. **Affirmative Action**: Acts as a tool for affirmative action, especially for disadvantaged communities, fostering social and economic mobility.
3. **Improved Regional Access**: Provides better access to higher education for local communities, contributing to the overall upliftment of regional economies.
4. **Workforce Development**: Contributes to the creation of an educated workforce that supports regional economic development and growth.

Cons:

1. **Restriction on Freedom**: Domicile-based reservations may infringe on the fundamental right to move freely and access education anywhere in India, as guaranteed by **Article 19**.
2. **Division Among States**: These quotas contribute to regional divisions and hinder the creation of a unified educational and professional landscape.
3. **Limitations on Talent**: Restricting access to top talent from other states can limit innovation and discourage investment in local businesses and industries.
4. **Overlooking Structural Issues**: Domicile-based quotas may not address deeper issues such as inadequate infrastructure, lack of exam preparation support, and mismatches between academic training and industry needs.

5. Dibrugarh announced as Assam's Second Capital

1. On 26th January 2025, During Republic Day celebrations, the **Chief Minister of Assam Himanta Biswa Sarma** announced that **Dibrugarh** would be developed as the **second capital of Assam.**
   a. The current capital of Assam is **Dispur** which is a suburb of **Guwahati**.
   b. This was also the **first time** the Chief Minister unfurled the national flag in Dibrugarh.
2. And **a session of the Assembly** would be held in Dibrugarh every year from **2027**.

Dibrugarh

1. **Dibrugarh** is a major city in eastern Assam situated **along the Brahmaputra in upper Assam.**
2. **Economy:** It is a major producer of **Tea** and **Oil.**
   a. It is often called the **"Tea City of India"** because of its vast tea estates.
   b. It is also home to **Duliajan oilfields** operated by Oil India Limited.
3. The **Dibru-Saikhowa National Park** is in Dibrugarh district and the adjoining district of Tinsukia.
   a. It was declared as India's **ninth biosphere reserve** among the 18 existing biosphere reserves in 1997.
   b. It is famous for the **rare white-winged wood duck**.

c. The park is also home to other rare creatures such as water buffalo, black-breasted parrotbill, tiger and capped langur.

What are the reasons for choosing Dibrugarh as the second capital?

1. **Administrative decentralization**: It ensures that the administrative powers and responsibilities are distributed from **Dispur in Guwahati** to **Dibrugarh.**
2. **Power Centre:** Upper Assam which includes **Dibrugarh** is seen as a power centre of Assam.
   a. It dates to the six hundred years of **Ahom dynasty's rule in Assam**. It is thus a heartland of **"indigenous Assamese"** culture and identity.

The Ahom Dynasty

1. The **Ahom kingdom (1228–1826)** was a late medieval kingdom in the Brahmaputra Valley (present-day Assam).
2. It was established by **Sukaphaa**, a Tai prince from Mong Mao (present-day Yunnan Province, China).
3. It retained its independence for **nearly 600 years** despite encountering Mughal expansion in Northeast India.
4. With the defeat of the Burmese after **the First Anglo-Burmese War** and the **Treaty of Yandabo in 1826**, control of the kingdom passed into East India Company hands.

   b. Upper Assam has often **projected the CM face**, such as the 15-year rule by **Tarun Gogoi's Congress** or even the breakthrough for the BJP in 2016, when people chose **Sarbananda Sonowal** as their Chief Minister.
3. **Reaping political gains:** Upper Assam is also home to different **ethnic Assamese groups**, including five – Ahom, Moran, Motok, Chutia, and the tea tribes – of the six which have long been demanding Scheduled Tribe (ST) status.
4. **For action against militancy:** Dibrugarh and the adjoining district of Tinsukia have been the stronghold of the **United Liberation Front of Asom (Independent)**.
   a. **ULFA** is a **separatist militant organization** seeking to establish an **independent sovereign nation state of Assam** for the indigenous Assamese people through an **armed struggle**.
   b. **Dibrugarh and Tinsukia** are among the four Assam districts where the controversial **Armed Forces Special Powers Act (AFSPA)**, which gives the Armed Forces a free hand to curb insurgency, is still in force.

What is the background of Politics in Assam?

1. The **Brahmaputra Valley of Assam** is divided into:
   a. **'Ujoni'**: Upper or eastern Assam
   b. **'Namoni'**: Lower or western Assam'.
2. The **Ujoni** has been the **power centre** in the State since 1978 and has given Assam **six Chief Ministers**.
3. The Ujoni has largely fuelled the **BJP's rise to power** in the State. For instance, the former CM of Assam **Sarbananda Sonowal** who came to power in 2016 was from Dibrugarh.
4. Much of its electoral performances since the 2014 Lok Sabha election have been attributed to the shift of the Adivasi or tea plantation workers, and other communities like Ahoms, Morans and Motoks, **away from the Congress**.
   a. These four communities are among six that have been promised **status of Scheduled Tribes (ST).**
5. However, in the **recent Lok Sabha elections**,
   a. The loss of the **Jorhat seat to Gaurav Gogoi**, a Congress leader was a setback to the BJP.
   b. Jorhat is one of five Ujoni parliamentary seats. The others are Dibrugarh, Kaziranga, Lakhimpur, and Sonitpur.
   c. In **Dibrugarh, Mr. Sonowal** secured 54.27% of the votes polled, 10% less than his predecessor Rameswar Teli mustered in 2019.

Click Here for INDEX

6. This has led to **fears within the ruling party of losing power** in Upper Assam in the upcoming Assembly elections of 2026.
7. Thus, the recent decision of declaring Dibrugarh as the second capital is to ensure that **political power is retained in Upper Assam**.
8. **What are the other efforts regarding Dibrugarh?**
   a. In 2024, Himanta Biswa Sarma opened a **CM secretariat in Dibrugarh**, the first outside the state capital.
   b. He also announced an **urbanisation push in Dibrugarh**, including the construction of an expressway to shorten travel time between the town and Guwahati.
9. **What are other proposed developments in Assam?**
   a. Raj Bhavan in **Tezpur** and its development as the cultural capital of Assam.
   b. Secretariat and chief secretary's office in **Silchar.**

What are the provisions for creating a new capital?

1. The capital of a state has been **nowhere discussed** in the Constitution.
   However, as per the **Constitution** in:
   a. **Article 2:** It gives the Parliament the **power to establish or admit new states** into the Union.
   b. **Article 3:** It gives the Parliament the **power to create new states and change** the boundaries, names, and areas of existing states.
   c. **Article 4:** It allows the Parliament to make laws that amend the **First and Fourth Schedules.**
      i. **First Schedule:** Lists the names and boundaries of India's states and union territories
      ii. **Fourth Schedule:** Provides for the allocation of seats to various States and Union Territories with respect to Rajya Sabha.
2. As per legal experts, based on the above provisions on the powers of the Parliament, **only the Parliament** can decide the capital of a state (including establishing a new one).
3. In this regard, the Parliament would need to pass a **legislation** to establish a new capital city

Which are the other states in India with more than one capital?

STATE/UNION TERRITORY	CAPITALS	REASONS
UT of Jammu and Kashmir	Srinagar (Summer), Jammu (Winter)	To avoid the harsh winters of Srinagar and administrative convenience.
Maharashtra	Mumbai, Nagpur (Winter)	To ensure equitable regional development and administrative efficiency.
Himachal Pradesh	Shimla, Dharamshala (Winter)	Winter extremes in Shimla, which faces heavy snowfall during winter, causing landslides.
Uttarakhand	Dehradun, Gairsain (Summer)	To ensure inclusive governance and regional development.

Other States which have proposed more than one capital

STATE	CAPITALS	REASONS
Karnataka	Bengaluru, Belagavi	Because Belagavi and other parts of northern Karnataka were neglected in terms of development.

Andhra Pradesh	Visakhapatnam (Executive capital), Amaravati (Legislative), and Kurnool (Judicial)	Decentralized development and administrative efficiency.
Tamil Nadu	Chennai, Madurai	To reduce pressure on Chennai and promote industrial and economic growth in the southern districts of the state.

Click Here for INDEX

What are the issues with multiple state capitals?

1. **High costs:** This includes **infrastructure costs** for government offices, residences, and transport networks; and **operational costs** for administrative changes.
2. **Administrative:** As additional logistics, administrative and communication channels will be necessary.
3. **Possible inconvenience to citizens:** As they may have to travel between capitals for legal matters, business approvals etc.
4. **Political unrest:** There can be protests and unrests, as seen in Andhra Pradesh where three capitals were proposed.

6. Doctrine of Merger

1. The **Doctrine of Merger** in law refers to the principle that when a higher court makes a final decision on an appeal, the lower court's judgment merges with the appellate court's decision.
2. The judgment of the lower court no longer exists independently, and the decision made by the higher court becomes the final ruling in the case.

Reason Behind the Doctrine

1. **Respect for Court Hierarchy**: The doctrine ensures that the decisions of lower courts are respected, but the ruling of higher courts prevails, reinforcing the judicial hierarchy.
2. **Prevention of Conflicting Decisions**: It ensures uniformity in legal rulings and prevents contradictory decisions on the same legal issue.
3. **Finality of Decisions**: Once the higher court delivers its verdict, it provides a clear resolution to the case, eliminating the need for the matter to be revisited. This guarantees certainty and stability in the judicial process.

Exceptions to the Doctrine of Merger

While the doctrine applies generally, there are specific exceptions where it may not apply:

1. **Dismissal for Procedural Reasons**: If the higher court dismisses an appeal due to procedural grounds like time limitations or lack of jurisdiction, the doctrine does not apply.
   - Since no merit-based decision has been made, the lower court's judgment is not merged into the higher court's ruling.
2. **Remand for Fresh Consideration**: When a higher court remands a case back to a lower court for further examination or reconsideration, the doctrine does not apply.
   - In this case, the lower court's decision does not merge with the appellate court's judgment as the higher court has not rendered a final ruling.
3. **Extraordinary Jurisdiction under Article 136**: The Supreme Court's exercise of its extraordinary jurisdiction under Article 136 of the Indian Constitution allows it to hear cases outside its regular purview. In certain circumstances, the doctrine may not apply here.

Article 136 of the Indian Constitution

It grants the **Supreme Court** the discretionary power to grant **Special Leave to Appeal** (SLA) from any judgment, order, decree, or sentence passed by any court or tribunal in India, except military tribunals.

The **key aspects** of Article 136 include:

1. **Special Leave to Appeal**: The Supreme Court has the discretion to decide whether to grant special leave to appeal, meaning it can choose which cases to hear.
2. **Scope**: This special leave can be granted for decisions from any court or tribunal in India, regardless of whether the decision is made by a lower or higher court.

Click Here for INDEX

3. **Exclusion for Armed Forces**: The provisions of Article 136 do not apply to cases related to the Armed Forces, where appeals cannot be made under this clause.

Criticisms of the Doctrine of Merger

Despite its role in promoting finality and consistency, the **Doctrine of Merger** faces criticism:

1. **Rigidity**: Critics argue that the doctrine can be overly rigid, making it difficult to correct errors made by lower courts after their decisions merge with the appellate court's ruling.
2. **Limitation in Rectifying Mistakes**: Once the lower court's judgment merges with the higher court's decision, it becomes difficult to revisit or amend judicial errors, even if the lower court made a mistake.

Landmark Cases

The **Doctrine of Merger** has been shaped and clarified by several landmark cases:

1. **Kunhayammed v. State of Kerala (2000)**: The Supreme Court clarified that the doctrine does not apply automatically in every case. Its application depends on the nature of the jurisdiction and the specifics of the case.
2. **State of Madras v. Madurai Mills Co. Ltd. (1967)**: This case established that when an appellate court modifies the lower court's decision, the lower court's decree merges with the appellate court's ruling.
3. **Gojer Bros. (P) Ltd. v. Ratan Lal Singh (1974)**: The Supreme Court ruled that even when an appeal is dismissed without a detailed order, the doctrine of merger still applies, meaning the lower court's judgment merges with the appellate court's ruling.

7. 8th Pay Commission

1. A year before the end of the 7th Pay Commission (PC), In **January 2025,** the Union government approved the establishment of the **8th Pay Commission**. The exact date for its setup has not been announced yet.
2. This Pay Commission will revise the salaries of nearly 50 lakh central government employees and allowances of 65 lakh pensioners

What is a Pay Commission (PC)?

1. A pay commission is constituted by the **central government** approximately **every decade** to revise the salary structure of its employees and determine pension payments.
2. Pay commissions **consult with central** and **state governments**, along with other stakeholders, before recommending salary structures, benefits, and allowances for government employees.
   - Their recommendations are often adopted by state-owned organisations.
3. The commission also suggests formulas for revising **Dearness Allowance (DA)** and dearness relief for central government employees and pensioners, aiming to offset the **impact of inflation.**
   a. The recommendations are suggestive, there is **no obligation** on the government to accept the recommendations of the pay commission.
   b. **DA is a crucial component** of the salary that adjusts for the **cost of living** to offset the impact of **inflation.**
   c. The **DA for employees and pensioners** is calculated based on the latest Consumer Price Index for Industrial Workers (CPI-IW), which is released by the Labour Bureau each month.
4. **Since 1947,** seven Pay Commissions have been constituted, with the **last one (7th) constituted in 2014** and implemented on January 1, 2016 and its term will conclude on December 31, 2025.
   a. The 7th pay commission saw an expenditure increase of Rs 1 lakh crore for fiscal 2016-17.
   b. The chairman of the 7th Pay Commission is **Justice Ashok Kumar Mathur.**
   c. Notable, the **First Pay** Commission was setup in 1946.

What is inflation?

1. Inflation refers to the rate at which the general price level for goods and services increases over a period of time, causing a decrease in purchasing power of money or real income.
   - **In other words,** as inflation rises, each unit of currency can buy fewer goods and services than before.

2. **Rising inflation** affects the financial well-being of households, especially those with lower incomes or fixed incomes.
    - As the cost of goods and services increases, it reduces the quantity of goods and services that can be purchased with the same nominal income, thereby affecting households' cost of living.
3. **High inflation** eats away the real interest earned from keeping one's money in the bank or similar savings instruments.
4. Earning a **6% nominal interest** from a **savings deposit** effectively means earning no interest if inflation is at 6%.
    - By the reverse logic, borrowers are better off when inflation rises because they end up paying a lower "real" interest rate.
5. There are different **methods for measuring inflation** such as Consumer Price Index (CPI), Wholesale Price Index (WPI), GDP deflator, Producer Price Index (PPI), and wage inflation, with each focusing on a specific aspect of price changes.

8. 75 Years of ECI and National Voters' Day

1. The 15th National Voters' Day (NVD) celebrated across the country on 25th January.
2. This Year's Theme "**Nothing Like Voting, I Vote for Sure".**
3. Since 2011, National Voters' Day (NVD) has been observed annually on January 25 to commemorate the foundation day of the Election Commission of India (ECI) , established on January 25, 1950, a day before India became a Republic.
4. The Election Commission also celebrates 75 years of its dedicated service to the nation.

About Election Commission of India (ECI)

1. The Election Commission of India (ECI) is a permanent constitutional body established on **25th January 1950**.
2. **Constitutional Provision of ECI**: ECI's functioning is governed by **Part XV** of the Constitution, which includes **Articles 324 to 329**.
3. **Statutory Provisions of ECI**: The **Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023** regulates their appointment, service conditions, tenure, etc.
4. **Key Role**: ECI administers elections to:
    a. **Lok Sabha** (House of the People)
    b. **Rajya Sabha** (Council of States)
    c. **State Legislative Assemblies**
    d. **Offices of the President and Vice President**
5. **Composition of the Election Commission:** The ECI is composed of:
    a. **Chief Election Commissioner (CEC)**
    b. **Two Election Commissioners (EC)**
        - Initially, the commission only had a CEC. However, in **1989**, two Election Commissioners were appointed and continued till **1st January 1990**. Since **1993**, the commission has permanently included two Election Commissioners.

Key Provisions of the Chief Election Commissioner and Other Election Commissioners Act, 2023:

This Act replaces the **1991 Act** and aims to enhance the autonomy of the ECI. It specifies the qualification, appointment process, tenure, and other critical aspects.

Key Provisions	Details
Qualifications for CEC and EC	1. Must hold or have held a post equivalent to **Secretary to the Government of India**.
	2. Must possess **integrity** and substantial **experience** in managing elections.
Search Committee	**Composition**: Headed by the **Minister of Law and Justice**, includes two members of the rank of **Secretary or higher**.
	Function: Prepares a **panel of 5 candidates** for selection.
Select Committee	**Composition**: Includes the **Prime Minister (Chairperson)**, the **Leader of Opposition in the Lok Sabha**, and a **Union Cabinet Minister** nominated by the Prime Minister.
	Function: Recommends **eligible candidates** to the **President** for the appointment of CEC and EC.

Click Here for INDEX

Key Provisions	Details
Term of Office	**Tenure**: **6 years** or until **65 years** of age, whichever is earlier.
	Reappointment: Not allowed.
Salary and Benefits	Salary is equivalent to that of a **Supreme Court Judge**.
Resignation and Removal	**Resignation**: CEC or EC can resign by writing to the **President**.
	Removal: - **CEC**: Can be removed in the same manner as a **Supreme Court judge**. - **ECs**: Require the **recommendation of the CEC** for removal.
Legal Protection	CEC and ECs are protected from **civil or criminal proceedings** for acts performed in their official capacity.

Key Initiatives of ECI:

1. **Electronic Voting Machines (EVMs)**: Introduced in 1977 and piloted in 1982, EVMs modernized the electoral process.
2. **Systematic Voters' Education and Electoral Participation (SVEEP)**: Launched in 2009 to promote voter education, awareness, and literacy.
3. **cVIGIL App (2018)**: Allows citizens to report violations of the Model Code of Conduct (MCC) in real-time.
4. **Voter Verified Paper Audit Trail (VVPAT)**: Introduced in 2013, it provides a verifiable paper trail, enhancing transparency in elections.
5. **National Electoral Roll Purification and Authentication Programme (NERPAP)**: Launched in 2015, NERPAP aims to create error-free and authenticated electoral rolls.
6. **International Cooperation**: ECI is a founding member of the **Association of World Election Bodies (A-WEB)**, **Stockholm**, and the **Commonwealth Electoral Network (CEN)**.

Refer Current Affairs Total (CAT) Magazine December 2023, Page 2-3 for Comprehensive Coverage of ***Chief Election Commissioner and Other Election Commissioners Act, 2023***

9. First foundation day of Lokpal and Lokayukta

The Lokpal of India, established under the **Lokpal and Lokayuktas Act, 2013,** celebrated its first foundation day in January 2025.

Lokpal and Lokayuktas Act, 2013:

The **Lokpal and Lokayuktas Act, 2013** established statutory anti-corruption bodies at both the **Union** and **State** levels to address complaints regarding corruption among public functionaries. The Act was amended in 2016 to:

- **a.** Enable the leader of the **single largest opposition party** in the **Lok Sabha** to be part of the **Lokpal selection committee** if there is no recognized Leader of Opposition.
- **b.** Amend **Section 44**, which deals with the disclosure of assets and liabilities.

Lokpal:

1. **Composition**:
   - **a.** The Lokpal consists of a **Chairperson** and up to **8 Members**, with at least **50%** being **Judicial Members**.
   - **b.** At least **50%** of the members must come from **SC**, **ST**, **OBC**, **Minorities**, and **women**.
2. **Eligibility**:
   - **a.** The **Chairperson** and **Members** must have substantial experience in managing elections, hold or have held a post equivalent to **Secretary** in the **Government of India**, and possess **integrity**.
3. **Term of Office**:
   - **a.** **5 years** or until the age of **70 years**, whichever is earlier.
   - **b.** Reappointment is **not allowed**.
4. **Appointment**:
   - **a.** The **President** appoints the Lokpal after receiving recommendations from the **Selection Committee**:
     - **i.** **Prime Minister** (Chairperson)
     - **ii.** **Speaker of Lok Sabha**
     - **iii.** **Leader of Opposition** or Leader of the **single largest opposition party** in the Lok Sabha

iv. **Chief Justice of India** or a nominated **Supreme Court Judge**
v. **One eminent jurist** nominated by the President

5. **Jurisdiction**:
   a. The **Lokpal** has jurisdiction over:
      i. **Prime Minister**, Ministers, Members of Parliament, and **Central Government employees**.
      ii. **Exclusion**: The Prime Minister is excluded on matters related to **international relations**, **national security**, **atomic energy**, and **space**.
6. **Powers and Functions**:
   a. **Supervision** over investigations conducted by the **Delhi Special Police Establishment (DSPE)**.
   b. **Search and Seizure**: Can authorize searches and seizures for evidence during investigations.
   c. **Central Vigilance Commission (CVC)** must report to the **Lokpal** on referred complaints.
   d. **Civil Court Powers** for preliminary inquiries under the **Code of Civil Procedure, 1908**.

Lokayukta:

1. **Establishment**:
   - Lokayuktas are established by **State Governments** through laws, and their structure, eligibility, and appointment processes vary by state.

Issues with the Lokpal/Lokayukta Offices:

1. **Protection for Whistleblowers**: The Act lacks adequate provisions to protect complainants, discouraging people from filing complaints due to the risk of counteractions.
2. **Political Influence**: The selection committee of **Lokpal/Lokayukta** involves political figures, which can lead to political bias.
   - Additionally, there are no clear criteria for selecting the **eminent jurist**, which could lead to manipulation in appointments.
3. **Limited Jurisdiction**: The **Prime Minister** is excluded from inquiries into official conduct by anyone other than **Parliament**. This can impair effective accountability.
4. **Other Lacunae**:
   a. **Constitutional Backing**: Lokpal and Lokayukta lack constitutional backing.
   b. **Time Limit**: Complaints against corruption cannot be registered after **7 years**.
   c. **Judiciary Exclusion**: The **Judiciary** is not under the purview of the Lokpal.
   d. **Appointment of Lokayukta**: There is no clear procedure for the appointment of **Lokayuktas**.

Way Forward:

1. **2nd ARC Recommendations: Prime Minister** should remain outside the purview of the **Lokpal** to avoid undermining the government's leadership capacity.
2. **Constitutional Backing:** Providing **constitutional backing** and **financial autonomy** would strengthen the functioning of Lokpal and Lokayuktas.
3. **Decentralized Institutions:** Distribute power across decentralized bodies, each with proper **accountability measures**, to prevent concentration of authority.
4. **11th All India Lokayukta Conference (2012) Recommendations:**
   a. **Make Lokayukta** the nodal agency for all corruption complaints.
   b. Grant **Lokayukta** jurisdiction over **State-level probe agencies**.
   c. Include **bureaucrats** under **Lokayukta's purview**.
   d. Provide **powers of search, seizure**, and the ability to initiate **contempt proceedings**.
   e. Provide **administrative and financial autonomy** to the **Lokayuktas** for better functioning.
   f. Bring **NGOs** funded by the government under **Lokayukta's jurisdiction**.

As aptly stated by Publius Cornelius Tacitus, "The more corrupt the state, the more laws." In this context, what the country needs is the **better execution** of existing laws rather than the continuous creation of new ones. Strengthening the current **Lokpal and Lokayukta** structures would lead to more effective accountability and reduced corruption.

Click Here for INDEX

10. Uttarakhand Implements Uniform Civil Code (UCC)

A **Uniform Civil Code (UCC)** is a proposal for a **common set of laws** that applies to all citizens of a country, regardless of their religion, caste, or community. The primary objective of the UCC is to provide a **single legal framework** governing personal matters such as **marriage, divorce, inheritance, adoption**, and **succession of property**. The UCC seeks to replace the **multiple, religion-based personal laws** that exist in the country, ensuring **equality** and **non-discrimination** for all citizens.

In **Uttarakhand**, the journey towards implementing the UCC began with significant legislative actions:

1. On **February 7, 2024**, Uttarakhand's Legislative Assembly passed the **Uniform Civil Code (UCC) Bill**.
2. The bill was granted **assent by President Droupadi Murmu** on **March 13, 2024**.
   - The draft of this bill was prepared by a **five-member committee**, which was headed by **former Supreme Court Justice Ranjana Prakash Desai**.
3. Finally, on **January 27, 2025**, **Uttarakhand became the first Indian state to officially implement the Uniform Civil Code (UCC)** post-Independence.
4. The UCC in Uttarakhand now applies to all residents of the state, with the exception of **Scheduled Tribes** and **natives who have migrated out of the state**.

Constitutional Provision for UCC

1. The **Indian Constitution** under **Article 44** directs the Indian State to endeavor to provide a **Uniform Civil Code** for its citizens.
2. The implementation of UCC in Uttarakhand falls under the legislative powers of the **Concurrent List**, which includes subjects like **marriage**, **adoption**, and **succession**.

Salient Features of Uttarakhand's Uniform Civil Code

Uttarakhand's UCC introduces several key provisions, which are outlined below:

1. Marriage and Divorce

a. **Marriage Ceremonies**: Marriages can be conducted through any religious or non-religious ceremony under the **Special Marriage Act**.

b. **Compulsory Registration**: All marriages must be registered within **60 days** of the ceremony. Failure to register will incur a **monetary fine of Rs. 20,000**, although the marriage will not be annulled for this failure.

c. **Common Age of Marriage**: The minimum age of marriage is fixed at **18 years for women** and **21 years for men**.

d. **Bigamy and Polygamy**: Both bigamy and polygamy are banned.

e. **Right to Remarry**: The right to remarry after a divorce is guaranteed, which indirectly bans practices like **Iddat** and **Nikah Halala**. Forceful adherence to these practices is criminalized.

f. **Gender Equality in Divorce**: Gender equality is ensured in matters of divorce.

g. **Child Custody**: The custody of children under **5 years of age** will remain with the mother after a divorce.

2. Inheritance and Succession

a. **Influence of the Indian Succession Act (1925)**: The inheritance rules follow principles from the **Indian Succession Act**.

b. **Muslim Communities' Rights**: Muslims can transfer **any amount of property** according to their will, rather than being restricted to one-third as per their religious texts.

c. **Intestate Succession for Hindus**: There is **no difference** between ancestral and self-acquired property for intestate succession among Hindus.

d. **Class of Heirs**: A list of heirs is defined for inheritance, including:

   i. **Class-1 heirs**: Children, widow, parents, etc.

   ii. **Class-2 heirs**: Siblings, nieces, nephews, grandparents, etc.

   iii. **Others**: Individuals most closely related to the deceased person.

e. **Equal Property Rights**: Both sons and daughters are granted **equal property rights** across all classes of heirs.

f. **Disqualification from Inheritance**: In cases of murder or remarriage before the death of the person, the individual may be disqualified from inheritance. However, **disease or deformity of heirs** is not a ground for disqualification.

g. **Consideration of All Children**: Adopted children, illegitimate children, children born through surrogacy, and children born via assisted reproductive technology are considered **biological children** for inheritance.

3. Live-in Relationships

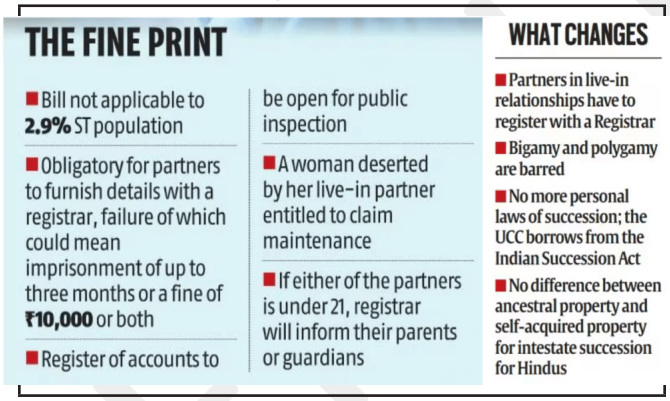
a. **Definition**: Live-in relationships are explicitly defined as **cohabitation between a man and a woman** in a relationship resembling marriage.

b. **Registration**: Registration of live-in relationships is mandatory. Failure to register can result in a **jail term of up to 3 months**.

c. **Termination**: Couples must notify authorities upon the termination of a live-in relationship, with penalties for failing to do so.

d. **Right to Maintenance**: Women in live-in relationships have the right to claim **maintenance** if deserted by their partner.

e. **Scope**: These provisions apply to all individuals residing in Uttarakhand as well as Uttarakhand residents living elsewhere in India.



Issues, Concerns, and Criticisms of Uttarakhand's UCC

While the implementation of the UCC in Uttarakhand is a significant step, it has raised several concerns and criticisms:

1. **Not Comprehensive**: The UCC **excludes Scheduled Tribes** from its provisions, meaning that a large population will continue to follow their own customs for marriage, succession, and inheritance.
2. **Invalidation of Homosexual Live-in Relationships**: The provision on live-in relationships recognizes only **heterosexual relationships**, which may conflict with the **Navtej Singh Johar case (2018)**, where the Supreme Court decriminalized homosexuality.
3. **Lack of Synergy with National Laws**: The UCC stipulates a minimum marriage age of **18 for women**, while the **Prohibition of Child Marriage (Amendment) Bill, 2021** seeks to raise the minimum age to **21**. This highlights a conflict between state and national laws.
4. **Violation of Fundamental Rights**: Critics argue that the UCC **impinges on the right to freedom of religion**, particularly for Muslim communities.
5. **Invasion of Privacy and Autonomy**: The mandatory registration of live-in relationships and the requirement to notify authorities if either partner is under 21 years of age may infringe upon individuals' **freedom to choose** their life partner, as upheld in the **Joseph Shine Case (2018)**.
6. **Impact on Women's Property Rights**: The removal of the distinction between **separate and coparcenary property** could lead to the situation where property is willed entirely to sons, potentially excluding daughters and reinforcing **patriarchy**.
7. **Reduction in Mother's Share**: The inclusion of the father as a **Class-1 heir** in intestate succession reduces the **mother's share**, as she would now receive only half of what she would have received under the **Hindu Succession Amendment Act, 2005**.
8. **Christian Women's Inheritance**: Under the UCC, Christian women may receive **less property** compared to the current system, as inheritance would be divided equally between children, rather than giving them half of the intestate's property.
9. **Lack of Uniformity**: If each state enacts its own UCC, there would be **28 different UCCs**, which contradicts the very notion of **uniformity**.

Uttarakhand's implementation of the UCC marks a significant milestone in the legal landscape of India. However, it raises various issues that need further deliberation and potential refinement. As the first state to adopt a Uniform Civil Code post-Independence,

Click Here for INDEX

Uttarakhand's approach could serve as a **learning benchmark** for future laws, with the possibility of a **national-level UCC**—an issue that has been previously discussed in the **Shah Bano case**. The long-term impact of this code will depend on how it addresses its shortcomings and adapts to evolving legal and social contexts.

11. Internet Shutdowns in 2024

1. Recently, the advocacy body **'Access Now'** released a report which documented a record high 296 shutdowns in 2024, with **India leading** in **government-imposed restrictions.**
2. The report is part of the **#KeepItOn campaign**, a coalition of over 345 organizations from 106 countries committed to ending internet shutdowns.

Global Overview of Internet Shutdowns

Record Numbers and Geographic Spread

1. **Total Shutdowns:** 296 shutdowns in 2024 across 54 countries, marking a record high.
   a. This represents a significant increase from 283 shutdowns in 2023 and a **35% rise** in the number of affected countries since 2022.
2. **Top Offenders:** The following **four nations** together accounted for roughly **71% of all shutdowns** recorded.
   a. **Myanmar:** 85 shutdowns, driven largely by conflict since the 2021 military coup.
   b. **India:** 84 shutdowns, the **highest among democratic nations**.
   c. **Pakistan:** 21 shutdowns—the highest annual total for the country.
   d. **Russia:** 19 shutdowns, including actions during its full-scale invasion of Ukraine.

Triggers for Shutdowns

1. **Conflict-Related Actions:** 103 shutdowns in 11 countries, with methods ranging from cutting fiber optic cables and deploying jamming devices to launching cyberattacks and physically destroying infrastructure.
2. **Protests and Political Unrest:** 74 shutdowns were imposed during protests in 24 countries, aimed at curbing mobilization.
3. **Exam-Related Shutdowns:** 16 shutdowns in 7 countries were enacted to prevent exam cheating, particularly affecting regions in the Middle East and North Africa.
4. **Election-Related Measures:** 12 shutdowns in 8 countries during elections, the highest yearly total for such measures since 2019.

Human Rights Implications and Platform Blocks

1. **Human Rights Abuses:** 72 shutdowns coincided with grave human rights abuses—such as murder, torture, and war crimes—in 17 countries.
2. **Platform Blocks:** A notable surge in blocking access to digital platforms was recorded, with 71 instances in 35 countries. Key examples include **X (Twitter), TikTok and Signal.**
3. **Cross-Border Shutdowns:** 25 shutdowns were implemented across national borders by eight perpetrators, affecting connectivity in 13 countries.

Emerging Trends and Campaign Impact

1. **New and Escalating Offenders:** Several countries—such as Comoros, El Salvador, France, Guinea-Bissau, Malaysia, Mauritius, and Thailand—either imposed shutdowns for the 1st time or significantly escalated their actions.

Internet Shutdowns in India

1. **Total Shutdowns:** India recorded **84 internet shutdowns in 2024**, the **highest among democratic nations**.
   a. These disruptions affected **16 states and union territories**.
   b. Although India ranks at the top among democracies, it was surpassed globally by Myanmar's 85 shutdowns.
2. **State-Wise Breakdown:**
   a. **Manipur:** 21 shutdowns—the **highest** in the country.
   b. **Haryana:** 12 shutdowns.
   c. **Jammu & Kashmir:** 12 shutdowns.
3. **Triggers Specific to India**
   a. **Protests:** 41 shutdowns were linked to protest activities, aimed at curbing mass mobilization and dissent.
   b. **Communal Violence:** 23 shutdowns were imposed in response to communal clashes.

c. **Other Triggers:** Additional shutdowns were related to government job examinations, security operations, and occasional election-related measures.
   - Despite a modest decrease compared to previous years, the high number of shutdowns remains a significant concern.

Legal Framework and Judicial Oversight

1. **Historical Provisions:**
   a. **Indian Telegraph Act (1885):** Permits shutdowns during a **"public emergency"** or **"public safety"** but lacks precise definitions.
2. **Section 144 of the Code of Criminal Procedure (CrPC) – Pre-2017 (now Section 163 of the Bharatiya Nagarik Suraksha Sanhita (BNSS)):** Historically used by police and magistrates to prevent unlawful gatherings.
3. **Recent Developments:**
   a. **Temporary Suspension of Telecom Services (2017):** Introduced a requirement for approval from a review committee within 48 hours and increased transparency.
   b. **Telecommunications (Temporary Suspension of Services) Rules, 2024 (under the Telecommunications Act, 2023):**
      - **Mandatory Publication of suspension orders:** Shutdown orders must include detailed justifications, geographical scope, and the list of affected services.
      - **Duration Limit:** Shutdowns cannot exceed 15 days.
      - **Issuing Authorities:**
        - **Central Government:** Union Home Secretary.
        - **State Government:** Secretary in charge of the Home Department.
4. **Judicial Oversight – The Anuradha Bhasin Case (2020):**
   a. The Supreme Court ruled that indefinite shutdowns are unconstitutional.
   b. Emphasized that any internet restriction must be temporary, lawful, necessary, and proportionate.
   c. Reinforced that internet access is a fundamental right under **Article 19** of the Indian Constitution.

Debates on Internet Shutdowns

Arguments in Favor	Arguments Against
National Security: Shutdowns are seen as a means to prevent the spread of misinformation and coordinate responses during security crises.	**Freedom of Expression:** Internet shutdowns infringe on the fundamental right to free speech and access to information.
Targeted and Temporary Measures: These actions are intended to address specific, immediate threats without permanently affecting public access.	**Negative Impact on Global Image:** Frequent shutdowns can tarnish a country's international reputation, affecting investor confidence and diplomatic relations.
Prevention of Unrest: By suspending internet services, governments aim to reduce the organization of protests and civil disorder.	**Human Rights Concerns:** Shutdowns restrict critical communication, disrupt healthcare, education, and economic activities, and compromise public safety.
Counteracting Fake News: In times of crisis, restricting online communication can help control the spread of false information.	**Economic and Educational Disruptions:** With a rapidly growing digital economy, prolonged internet disruptions can lead to significant economic losses and hamper education. • India lost **$322 million** in 2024 (source: Top10VPN report). • **Internet access** is considered part of the **right to education** and **right to privacy** under **Article 21**, as affirmed in **Faheema Shirin vs State of Kerala (2019)**.
National Security: Shutdowns are seen as a means to prevent the spread of misinformation and coordinate responses during security crises.	**Freedom of Expression:** Internet shutdowns infringe on the fundamental right to free speech and access to information.

Click Here for INDEX

In 2024, internet shutdowns increased as governments tried to maintain order during conflicts, protests, and elections. However, these shutdowns often lead to human rights issues and economic losses. For a healthy democracy, security measures should respect constitutional rights. It is crucial to have clear rules, accountability, and transparency to protect our digital freedoms and keep the internet open for free communication.

12. R.G. Kar Rape and Murder Case: Life Imprisonment for Convict Sanjay Roy

1. On **August 9, 2024**, the body of a **postgraduate trainee doctor** was found in a **seminar room** of the **R.G. Kar Medical College and Hospital**, Kolkata.
2. The victim, a **junior doctor**, was allegedly **raped and murdered** by **Sanjay Roy**, a **35-year-old former civic police volunteer**.
3. Following a detailed investigation by the **Central Bureau of Investigation (CBI)**, charges were filed against Roy, leading to his conviction.

Court Verdict and Sentence

1. On **January 20, 2025**, the **sessions court** in Kolkata convicted **Sanjay Roy** for the **rape and murder** of the doctor and sentenced him to **life imprisonment**.
2. Despite strong arguments by the **CBI** for the **death penalty**, the court granted life imprisonment, stating that the case did not meet the **"rarest of the rare"** criteria for capital punishment.
   a. **Judge Anirban Das** emphasized the need for a sentence that balances the **gravity of the crime** with **justice**, **rehabilitation**, and **human dignity**.
   b. In the **172-page judgment**, the judge detailed the following:
      i. **Life imprisonment** for Roy, with **rigorous imprisonment (RI)** for life for the offense under **Section 66** (causing death during rape).
      ii. A fine of **₹50,000** for the charges under **Sections 64 (rape)**, **66 (causing death)**, and **103(1) (murder)** of the **Bharatiya Nyaya Samhita (BNS)**. Failure to pay the fine would result in **five months of simple imprisonment**.
      iii. All sentences are to run **concurrently**, meaning they will be served simultaneously.

The Death Penalty: Legal Framework in India

Death Penalty in India

The **death penalty** in India is governed by strict guidelines, and the **Supreme Court** has emphasized that it should only be awarded in the **rarest of rare cases**. The principle was first established in the landmark case of **Bachan Singh v. State of Punjab (1980)**.

- **Rarest of the Rare Doctrine**: According to this doctrine, capital punishment should only be imposed when a crime is of an exceptionally brutal nature, and there is no possibility of **reformation** of the convict.

The Rarest of Rare Test

1. In **Bachan Singh (1980)**, the **Supreme Court** upheld the death penalty, but it emphasized that death sentences should be passed only in cases where there is no possibility of reforming the convict.
2. The **Court** outlined a non-exhaustive list of **aggravating** and **mitigating circumstances** for judges to consider before imposing the death penalty.

Aggravating and Mitigating Circumstances:

Aggravating Circumstances Factors that may favor the imposition of the death penalty	Mitigating Circumstances Factors that may favor life imprisonment or a lesser sentence
1. **Premeditated and brutal murder**: If the crime is **pre-planned** and involves extreme cruelty. 2. **Exceptional depravity**: If the crime involves **exceptional depravity** and deprives the victim of all human dignity. 3. **Murder of a public servant**: If the accused murders a **police officer**, a **public servant**, or a **member of the armed forces** in the line of duty.	1. **Extreme mental or emotional disturbance**: If the accused was in an extreme emotional or mental state at the time of the crime. 2. **Age of the accused**: A **very young** or **very old** accused may not be sentenced to death. 3. **Possibility of reform**: If there is a **likelihood of the accused rejoining society** after rehabilitation.

	4. **Action under duress**: If the accused was **acting on the direction** of another person or believed their actions were morally justified.

Supreme Court's Interpretation of Circumstances

1. **Age of the Accused**:
   a. In some cases, such as **Ramesh v. State of Rajasthan (2011)**, the Court took the **youth of the accused** as a factor in favor of life imprisonment.
   b. The **Law Commission** (262nd Report, 2015) noted that age has been applied inconsistently in death penalty cases.
2. **Nature of the Offense**:
   a. In the **Shankar Khade (2013)** case, the **Supreme Court** emphasized the need to compare the current case with similar past offenses to avoid subjectivity.
   b. In **Machhi Singh v. State of Punjab (1983)**, the **Court** ruled that death may be warranted when the **"collective conscience"** of society is deeply shocked.
3. **Possibility of Reform**:
   a. In **Bachan Singh (1980)**, the Court established that the **government** must prove the convict has no possibility of reform for a death sentence to be passed.
   b. **Santosh Bariyar v. State of Maharashtra (2009)** emphasized that clear evidence must be provided to demonstrate that the convict cannot be reformed.

When Should the Court Consider These Circumstances?

In the **Bachan Singh** case, the **Supreme Court** directed that after a conviction, a **separate hearing** should take place to determine if the death penalty should be imposed. This process allows for a thorough evaluation of whether **mitigating** or **aggravating circumstances** apply.

- **Dattaraya v. State of Maharashtra (2020)**: The Court held that if a fair hearing on the death penalty does not occur, the death sentence may be **commuted to life imprisonment**.

Conclusion: Legal and Societal Implications

The **R.G. Kar rape and murder case** has not only raised important questions regarding **capital punishment** but also reflects the ongoing tension between the **legal framework** and **societal expectations**.

1. **Legal Framework**: The **death penalty** in India is reserved for only the **rarest of rare** cases, as per the **Supreme Court's guidelines**.
2. **Societal Sentiment**: While the **public** and the **victim's family** feel strongly about the need for capital punishment, the court must weigh the facts against the legal principles of **justice**, **rehabilitation**, and **human dignity**.

13. Death Sentence Given to Nimisha Priya

What is the case?

1. Nimisha Priya, a nurse from Palakkad, Kerala, moved to Yemen in 2008.
   - Yemen (capital city Sana'a) is a country in West Asia, located in southern Arabia. It borders **Saudi Arabia** to the north, **Oman** to the northeast, the **Red Sea** to the west, and the **Indian Ocean** to the south.

2. In 2011, she married Tomy Thomas, who hails from Idukki, Kerala.

Click Here for INDEX

3. Nimisha and Tomy decided to set up their own clinic. Since foreigners were not allowed to register their businesses, they looked to partner up with a Yemeni national.
   - In 2014, Nimisha's husband Tomy Thomas returned to Kerala with their one-year-old child, as it was difficult for the couple to look after their child with their low salaries.
4. In 2015, she opened her own clinic with the help of Yemeni citizen Talal Abdo Mahdi.
5. However, Nimisha later complained about physical and sexual abuse by Mahdi. He also forged documents to present her as his wife and seized her documents.
6. In 2017, in an effort to retrieve her documents, she injected him with sedatives, which led to an overdose and his death.
   - **Sedatives are a group of drugs** that slow down the central nervous system (CNS) to help people relax, sleep, or reduce anxiety. Examples include barbiturates and benzodiazepines.
7. She was then imprisoned for the killing of Talal Abdo Mahdi in 2017 and was sentenced to death by a lower court in 2020.

What recourse/option does Nimisha Priya have?

The only recourse for Nimisha Priya is the payment of "blood money" to Mahdi's family.

a. "Blood money" or "diyya" is the compensation paid by an offender, usually a murderer, to the family or kin group of the victim. The concept is prevalent in many Islamic legal systems.

b. The principle of "blood money" or diyya comes from the Quran to encourage the virtue of forgiveness while also providing reparative justice to the victim's family.

India's Stand on Blood Money and How It Is Different from Plea Bargaining?

1. India's legal system **does not officially recognize** blood money. Instead, there is a concept called **plea bargaining** that allows some negotiation in criminal cases.
   - It is **a legal process** in which a **defendant agrees to plead guilty** to a lesser charge or to receive a reduced sentence in exchange for cooperating with the prosecution.
2. Plea bargaining was **introduced through the Criminal Law (Amendment) Act, 2005**. Plea bargaining allows the accused to plead guilty in exchange for a lighter sentence or a reduced charge.
   - However, it can **only be used for** crimes that are punishable with less than seven years in prison.
3. Moreover, the **provision is not available for crimes against women or children** aged **below 14**, heinous crimes such as murder or rape, or offenses involving socio-economic conditions, including civil rights.
4. It cannot be invoked if the accused has been previously convicted for a similar offense.
5. Under plea bargaining, victims may receive compensation (**Section 265E of the Code of Criminal Procedure**). This is similar to blood money, but **it is not the same**.

Pardoning Mechanisms for the Death Sentence in Yemen and India:

Aspect	Yemen	India
Legal Basis for Pardoning	Blood money (diyya) as per Sharia law	**Article 72** of the Indian Constitution; President can grant pardons
Authority for Pardoning	Victim's family or a court-appointed body	The President of India
Conditions for Pardoning	The victim's family may forgive the offender in exchange for blood money, and the state can intervene.	The President may pardon, commute, or remit a death sentence based on mercy petitions.
Role of Religion in Pardoning	Strongly linked to Islamic law and customs (Sharia law).	**Secular**, no religious basis for pardoning.

Similar Historical Practices:

Other cultures have had practices similar to blood money:

1. **Ireland**: The Brehon law (7th century AD) included Éraic (body price) and Log nEnech (honor price). These payments were made based on the severity of the crime or the victim's social status.

2. **Wales**: The Galanas law involved paying a "blood fine" that was based on the social status of the victim, especially in cases of murder.
3. **Germany**: The Wergeld system, practiced in early medieval Germany, was a compensation system for homicide where the victim's family received money.

Instances of Indians Pardoned Through Blood Money:

Several Indian nationals have had their death sentences reduced or pardoned after paying blood money in foreign countries:

1. **Arjunan Athimuthu in Kuwait (2019)**: An Indian man sentenced to death in Kuwait had his sentence reduced after his family paid ₹30 lakh in blood money.
2. **Abdul Rahim (2006) in Saudi Arabia**: After being sentenced to death in Saudi Arabia for murder, Rahim's sentence was reduced after ₹34 crore was paid as blood money.
3. **Indians sentenced to death in the UAE (2017-2019)**: Ten Indians had their death sentences overturned after paying 200,000 dirhams, and 17 others avoided execution after nearly ₹4 crore in blood money was paid.
4. **Former Indian Navy personnel in Qatar**: Eight former Indian Navy personnel were arrested in Qatar in August 2022 in an alleged case of espionage and sentenced to death in 2023.
    - The MEA filed an appeal in the case, and the death sentence was commuted with an appellate court in Qatar handing them prison terms. They were eventually released early in 2024.

14. US judge blocks Trump's bid to End Birthright Citizenship

Birthright Citizenship

1. Birthright citizenship is a legal principle under which citizenship is automatically granted to individuals upon birth.
2. There are **two forms of birthright citizenship**: **ancestry-based** citizenship and **birthplace-based** citizenship.
    - Birthplace-based citizenship, which grants citizenship based on place of birth, is formally referred to as **jus soli**, a Latin term meaning **"right of the soil."**

What is Birthright Citizenship in the US?

1. Birthright Citizenship in US is guaranteed by the 14th Amendment to the Constitution.
2. The 14th Amendment was passed after the **Civil War** to guarantee citizenship to all persons born in the U.S., The amendment was a response to the **Dred Scott decision** of **1857**, which denied citizenship to enslaved Black people and their descendants.
    a. Specifically, **14th amendment states** that *"all persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside".*
    b. **This principle was confirmed by the 1898 Supreme Court case United States v. Wong Kim Ark**, which clarified that children born in the U.S. to immigrant parents are citizens, regardless of their parents' immigration status.

Case United States v. Wong Kim Ark (1898):

1. Wong Kim Ark was born in San Francisco to Chinese parents who were not U.S. citizens.
2. After visiting China, he was initially **denied re-entry** into the U.S. because the government **argued that he wasn't a U.S. citizen**.
3. The Supreme Court **ruled in favor** of Wong Kim Ark, declaring that he was indeed a U.S. citizen because he was born in the U.S., regardless of his parents' citizenship status.

This case has been a major precedent in affirming that any child born on U.S. soil is automatically a U.S. citizen.

3. The US recognizes **two types of citizenships**:
    a. **Unrestricted birthplace-based citizenship (jus soli)**: Granting citizenship to anyone born on U.S. soil, regardless of their parents' status, with exceptions like children of foreign diplomats.]
    b. **Restricted ancestry-based citizenship (jus sanguinis)**: Extending citizenship to children born abroad to U.S. citizens, provided statutory requirements are met.
4. In January 2025, after starting his **2nd term as President of the United States**, **Donald Trump** signed several executive orders, one of which aimed **to end the practice of birthright citizenship**.
5. As per the latest developments, a **federal judge in Seattle** has temporarily blocked the executive order by President Donald Trump calling it '**blatantly unconstitutional**'.

Click Here for INDEX

What is Trump's New Executive Order on Birthright Citizenship?

1. **Trump's executive order**, "Ending Birthright Citizenship for Children of Illegal Immigrants and Temporary Visa Holders," **interprets the 14th amendment differently**. It states that the "privilege of United States **citizenship does not automatically extend** to persons born in the United States."
2. **It proposes significant changes**:
   a. Children born in the U.S. will only become U.S. citizens if at least one parent is:
      i. A U.S. citizen.
      ii. A Green Card holder (a lawful permanent resident).
      iii. Serving in the U.S. military.
   b. **Children born to parents who are in the U.S. temporarily** (such as those on tourist, student, or work visas) or who are undocumented immigrants **will not automatically become U.S. citizens.**

   For Example: If a child's mother is in the U.S. on an **H-1B work visa** and the father is not a U.S. citizen or permanent resident, **the child will not become a U.S. citizen** under this order.
3. **Exclusions in the Executive Order**:
   a. The executive order specifically excludes:
      i. Children born to **parents who are unlawfully present in the U.S**. (i.e., undocumented immigrants).
      ii. Children born to **parents who are lawfully present but on temporary visas**, such as: **H-1B visas** (work visas for skilled workers), **F-1 visas** (student visas), **B-2 visas** (tourist visas)
   b. Trump's administration argues that the **14th Amendment should not apply to people who are not "subject to the jurisdiction"** of the U.S., which would include undocumented immigrants or those with temporary visas.

What is the purpose and scope of the order?

1. The administration argues that birthright citizenship incentivizes **illegal immigration and places a strain on public resources**. The executive order was a necessary measure to fix what the administration views as a broken immigration system.
2. However, this **does not apply retroactively**. Children who have already been born and granted citizenship under the current law will not lose their citizenship.

How will this affect Indian Americans?

1. **First,** Indian Americans make up about **1.47% of the total U.S. population**, with over **5.4 million people of Indian origin** in the U.S. As of 2024: **Two-thirds of Indian Americans** are first-generation immigrants, meaning they were born outside the U.S.
   - Many Indian Americans live in the U.S. on **temporary work visas** such as **the H-1B visa** (for skilled workers) or **H-4 visa** (for dependent family members).
2. **Second, If Trump's executive order is enforced**: Children born in the U.S. to Indian **parents on temporary visas** (e.g., H-1B, H-4) will **not automatically become U.S. citizens.**
   - This change could affect hundreds of thousands of children born each year in the U.S. to Indian parents, creating uncertainty around their future citizenship.
   - They will also **no longer be able to sponsor their parents** for permanent residency when they turn 21.

Anchor Babies

1. Anchor babies are children born to non-citizen residents in a country with birthright citizenship.
2. Such children are citizens of that country by virtue of their birth and hence can sponsor the citizenship of their parents after they have become adult.

Third, Green Card Backlogs: Indian immigrants often face long waiting times to obtain a Green Card (permanent residency).
   - There are backlogs in employment-based Green Cards, especially for Indian workers, with over **a million Indians waiting for more than 10 years** to get a Green Card. The order can lead to additional uncertainty.

3. **Fourth, Reduction in Birth Tourism:** Birth tourism refers to when **foreign nationals travel to the U.S. to give birth**, so their **child automatically becomes a U.S. citizen**.
   - Reduction in birth tourism is expected particularly from countries like **India and Mexico**, because children born to foreign nationals on temporary visas will no longer be granted U.S. citizenship.
4. **Fifth, Indian Students in the US:** Indian students, who form a significant group of international students in the US, will face difficulties securing citizenship for children born during their study tenure.
   - As per the US Open Doors Report 2024, around 331,602 Indian students studied in the United States for the 2023-24 academic year.

5. **Sixth, Discouragement from Moving to the US**: Indian professionals, students, and families may opt for immigration-friendly countries like Canada and Australia instead.
6. **Lastly, Economic Impact**: The Indian community contributes significantly to the US tech industry, healthcare, and education sectors.
    - Revoking birthright citizenship could reduce these contributions. (Economic Survey 2023 Report shows that India and USA share a bilateral trade worth $130 billion.)

What is the status of Birthright citizenship in rest of the world?

1. At present, **33 countries** in the world (and two territories) have **unrestricted birthright citizenship**, also known as jus soli, and another **32 nations** have some form of **restricted birthright citizenship.**
2. Interestingly, nearly every nation that offers birthright citizenship is in **North or South America**.
3. This is considered by many scholars to have **begun in colonial times**, in which European countries **eager to populate their settlements** in the "New World" established **more lenient and immigration-friendly** citizenship policies.
    - It should also be noted that birthright citizenship often has at least one exception: The **children of foreign ambassadors or other diplomats** serving in a country for work are frequently **excluded**.
4. Some of the countries with **unrestricted birthright citizenship** are Antigua and Barbuda, Argentina, Bolivia, Brazil, Canada, Chad, Chile, Costa Rica, Cuba, Ecuador, El Salvador, Fiji, Mexico, Paraguay, Peru, Tanzania, Trinidad and Tobago, the United States, Uruguay, Venezuela etc.

Click Here for INDEX

Comparison of Citizenship provisions of USA and India

Aspect	USA	India
Birth right Citizenship	The USA follows **jus soli** (right of the soil): Any child born on U.S. soil automatically becomes a citizen, regardless of parents' nationality (with some exceptions).	India follows **jus sanguinis** (right of blood): **Citizenship by birth** is limited and depends on the parents' nationality and legal status.
By Descent	Citizenship is granted if at least one parent is a U.S. citizen, regardless of the child's place of birth (with some conditions).	Citizenship is granted if the child is born outside India and at least one parent is an Indian citizen at the time of birth. Additional registration requirements apply.
By Naturalization	Requires residency in the USA for at least **5 years** (or 3 years if married to a U.S. citizen), proficiency in English, knowledge of U.S. history and government, and good moral character.	Requires residency in India for **7 years** (6 years of ordinary residence + 1 year immediately preceding the application). No language or history test is required.
Renunciation	Citizenship is not automatically lost if an American acquires another nationality, unless explicitly renounced**.**	Indian citizenship is automatically terminated if an Indian acquires citizenship of another country.
Dual Citizenship	The USA allows dual citizenship, enabling individuals to retain their original nationality while being a U.S. citizen.	India does not allow dual citizenship. However, Overseas Citizenship of India (OCI) offers some privileges to foreign citizens of Indian origin.
Legal Basis	Governed by the Immigration and Nationality Act (INA).	Governed by the Citizenship Act, 1955 and its subsequent amendments.

Legal Provisions for Citizenship in India

1. **Constitution**
    - **a.** Citizenship is exclusively handled by Parliament and is mentioned in the Union List.
    - **b.** The Constitution does not define 'citizen' but lays out who is entitled to Indian citizenship in Part 2 (Articles 5 to 11).
    - **c.** The citizenship provisions were enacted on November 26, 1949, when the Constitution was adopted, not on January 26, 1950, the date the rest of the Constitution came into force.
2. **Citizenship Act, 1955**: Five methods of obtaining citizenship
    - **a.** Citizenship by birth
    - **b.** Citizenship by descent
    - **c.** Citizenship by registration
    - **d.** Citizenship by naturalisation
    - **e.** Citizenship by incorporation of territory

Click Here for INDEX

B. International Relations

1. Indonesia: 10th Member of BRICS

1. In January 2025, **Indonesia has officially joined the BRICS group** as the **10th member**.
   - Indonesia's (world's 4th most populous country) membership was **approved at the Johannesburg Summit, South Africa** in August 2023.
2. BRICS now has **10 full members**: Brazil, Russia, India, China, South Africa, Egypt, United Arab Emirates (UAE), Ethiopia, Iran and Indonesia.
   a. Notable, in 2023, invitations were extended to 6 nations: **Saudi Arabia, Iran, the UAE, Egypt, Ethiopia, and Argentina**.
   b. By 2024, four of these joined as permanent members, but **Argentina declined the invitation**, while **Saudi Arabia** is **yet to finalize** its membership.
3. The organisation now represents almost half the world's population and almost one-quarter of the world's economy.

About BRICS

1. BRICS stands for **Brazil, Russia, India, China,** and **South Africa**, the original five members who were large, non-Western economies.
2. The **acronym BRIC was first used in 2001 by Goldman Sachs** in their Global Economics Paper, 'The World Needs Better Economic BRICs'.
   - The paper projected that **Brazil, Russia, India, and China** would be among the world's largest economies in the next 50 years or so.
3. As a formal grouping, BRIC started after the meeting of the leaders of **Russia, India and China** in St. Petersburg on the margins of the **G8 Outreach Summit in 2006.**
4. The grouping was formalised during the **first meeting of BRIC Foreign Ministers** on the margins of the United National General Assembly (UNGA) in New York **in 2006.**
5. The **first BRIC Summit** was held in **Yekaterinburg, Russia**, **in 2009**. It was decided to include South Africa at the BRIC Foreign Ministers' meeting in New York in 2010, and accordingly, South Africa attended the 3rd BRICS Summit in Sanya, China, in 2011.
6. BRIC **transformed into BRICS** in 2010 when South Africa joined the bloc.

The Rationale Behind the Creation of BRICS

BRICS was formed with the primary objective of countering the dominance of Western powers, especially the United States, in global governance. The rationale for BRICS stems from various historical, economic, and political factors.

1. **Global South Representation**:
   a. Countries in **Asia, Africa**, and **Latin America** (the Global South) have long criticized the disproportionate dominance of **European** and **Western** countries in international forums like the **United Nations (UN)** and **IMF**.
   b. BRICS was created to **amplify the voices** of these regions in global decision-making.
2. **Countering U.S. Global Influence**: The collapse of the **USSR** in 1991 solidified the **U.S.** as the world's **sole superpower**, prompting emerging economies like **India**, **China**, and **Brazil** to seek alternative forums for cooperation.
3. **Economic Growth and Cooperation**:
   a. With the **economic rise** of **China** and **India**, the creation of **BRICS** offered an opportunity for these countries to establish their own platforms for **political and economic cooperation**.
   b. The **G20** summit, with a broader membership than the **G8**, is an example of such an alternative to Western-dominated organizations.
4. **Institutional Cooperation**:
   a. **BRICS** was designed to enhance cooperation among its member countries in areas like **trade**, **investment**, and **infrastructure development**.
   b. A key initiative was the establishment of the **New Development Bank (NDB)** to provide funding for projects in developing countries.

New Development Bank

1. The New Development Bank (NDB) is a **multilateral development bank** established by BRICS countries.
2. The idea of setting up NDB was first conceived in 2012 during the BRICS Summit in New Delhi, India.
3. The agreement to establish it was signed on July 15, 2014, and became operational on July 21, 2015, during the BRICS Summit held in Fortaleza, Brazil. This is known as the **Fortaleza Declaration**.
4. The Bank has an initial authorized capital of 100 billion dollars and an initial subscribed capital of 50 billion dollars. The initial subscribed capital was $50 billion, equally shared among the five members.
5. "India's contribution to the BRICS New Development Bank (NDB) stands at $2 billion, paid in seven instalments from the fiscal year 2015-16 to 2021-22.

Reducing reliance on US Currency

One of the key strategies of BRICS has been to reduce reliance on the **US dollar** in international trade:

1. In an attempt to **reduce reliance on the US dollar** and to internationalise the Indian rupee, the Reserve Bank of India (RBI) allowed invoicing and payments for international trade in Indian rupees in 2022, after **sanctions were imposed on Russia** amid the war in Ukraine.
2. BRICS does not seek to replace the US dollar but aims to offer **viable alternatives** to foster more **inclusive economic globalization**.

Refer Current Affairs Total (CAT) Magazine October 2024, Page 23-25 for Comprehensive Coverage of **BRICS and its 16th Summit in Russia.**

Do You Know?

1. **Recently, Nigeria** has been admitted as **"partner country"** of **BRICS** grouping
   - It is the **9th BRICS partner country**, joining **Belarus, Bolivia, Cuba, Kazakhstan, Malaysia, Thailand, Uganda,** and **Uzbekistan**.
2. Nigeria, world's 6th-largest population—and Africa's largest—as well as being one of the continent's major economies,
3. **India** hosted **4th (2012), 8th (2016)** and **13th (2021) BRICS Summit.**

2. World's Largest Hydropower Dam on Brahmaputra

1. Recently, China approved the construction of the **world's largest hydropower project** on the **Yarlung Tsangpo River** in **Tibet**.
2. This project, with a capacity of **60,000 MW**, will be three times more powerful than the **Three Gorges Dam** on the Yangtze River in China, currently the largest hydroelectric project globally.
3. The **Yarlung Tsangpo** is known as the **Siang** in **Arunachal Pradesh**, India, and as the **Brahmaputra** in **Assam**. The river flows through **Bangladesh** before entering the **Bay of Bengal**.
4. The construction of such a large-scale project has raised serious concerns regarding its potential impact on millions of people, their livelihoods, and the fragile ecology of the region.

The Yarlung Tsangpo Project

1. **The project is proposed to be constructed at the "Great Bend" of the Yarlung Tsangpo River** (the Tibetan name for the **Brahmaputra**) **in Medog County before it enters Arunachal Pradesh.**
   - The river passes through a massive gorge in the Himalayas, making a **U-turn** before flowing into **Arunachal Pradesh** (India).
2. The dam's location and plans are mentioned in China's **14th Five-Year Plan (2021-2025)**.
3. The project will involve mega-dams, potentially disrupting the water flow to downstream regions, especially to India.
4. China's main motivation behind this project is to reduce dependence on **conventional energy sources** and achieve **net carbon neutrality** by **2060**.

Concerns for India: Water Flow and Ecological Impact

Impact on Water Flow and Agriculture

1. The Yarlung Tsangpo project could directly affect the flow of water from China into India, especially because **India** is a **lower riparian state** that relies on the Brahmaputra for **agriculture**, **drinking water**, and **hydropower generation**.

Click Here for INDEX

2. India raised concerns that large-scale dams in upstream areas could disrupt the **flow of silt** crucial for **agriculture** and adversely affect **local biodiversity**.
3. Additionally, since this region is **seismically active** and prone to **earthquakes**, any disturbance caused by such a massive dam could lead to unforeseen **disasters**, as seen in past incidents like the **Parechu Lake burst** in 2005.

Ecological Fragility and Risks

1. The region where the dam is planned is **ecologically sensitive** and **earthquake-prone**.
2. For example, **China's Three Gorges Dam** caused significant **geological changes** and raised concerns about **induced earthquakes** due to the immense volume of water stored.
3. India must monitor such developments closely, as even if China has no **malintent**, the risks are still high.

Current India-China Cooperation on Transboundary Rivers

1. India and China have some **limited cooperation mechanisms** on **transboundary rivers**, primarily through the **Memorandum of Understanding (MoU)** signed in **2013** for general **cooperation on transboundary rivers**.
2. Specific MoUs have been signed for the **Brahmaputra** and **Sutlej** rivers, though the **Brahmaputra MoU** expired in **2023** and is in the process of **renewal**.
3. The **Sutlej MoU** was created after the **Parechu Lake incident** in 2004, but the Chinese side has not agreed to **year-round data sharing**, and the MoU is **pending renewal**.
4. Despite these agreements, the **cooperation on data sharing** has seen interruptions, especially during times of heightened political tensions such as the **2017 Doklam standoff** and the **2020 Ladakh conflict**.
5. **International Legal Framework:**
   a. Although **India** and **China** are not signatories to the **1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses**, the **key principles** of this convention, including **equitable** and **reasonable utilization** of waters, still apply.
   b. The **upper riparian** country (China) is expected to ensure that its actions do not cause significant harm to the **lower riparian** country (India).

The proposed **Yarlung Tsangpo hydropower project** is not just an environmental issue but a **geopolitical** and **strategic** one. Given the potential for serious downstream impacts, **India must act decisively** and **forcefully** raise its concerns to ensure that the **interests of lower riparian states** are safeguarded.

India's diplomatic efforts should focus on ensuring **transparency** and **cooperation** in China's water-related projects and seek **mutually beneficial agreements** to prevent negative impacts on regional stability and relations. The ongoing developments in the **Brahmaputra basin** could define the future of **India-China relations** and water diplomacy in the region.

Compressed Air Energy Storage (CAES) System

In January 2025, the **world's largest CAES facility became fully operational in Yingcheng City, China.**

1. **Capacity:** 300 MW power output with a storage capacity of 1,500 MWh
2. **Storage Medium:** 2 underground salt caverns with a combined gas storage volume of 700,000 cubic meters
3. **Operation:** Stores energy for 8 hours and releases it for 5 hours daily, generating approximately 500 GWh annually
4. **Efficiency:** 70% conversion efficiency

What is Compressed Air Energy Storage (CAES)?

CAES is a technology that **stores energy by compressing air into sealed underground caverns or mines during low energy demand periods**. This compressed air is later released to generate electricity during peak demand, balancing the energy grid.

Significance:

This facility represents a significant advancement in energy storage, providing a solution to balance renewable energy with grid demand. CAES systems mitigate intermittency and support renewable energy integration.

Challenges:

1. **Geographic Limitations:** Suitable sites are limited to areas with proper geological formations.
2. **Efficiency Losses:** Thermal management during compression and expansion can cause energy losses.
3. **High Initial Investment:** Significant upfront capital is required.

3. World Bank appointed Neutral Expert on Indus Water Treaty

1. The **Indus Waters Treaty (IWT)** was signed on **September 19, 1960**, between **India** and **Pakistan** to regulate the distribution and usage of the waters of the **Indus River System** and its tributaries.
2. The treaty was signed in Karachi by **Jawaharlal Nehru**, the then Prime Minister of India, and **Ayub Khan**, the President of Pakistan, after nearly nine years of negotiations facilitated by the **World Bank**.

Key Provisions of the Indus Water Treaty (IWT)

1. The Treaty divides the **Indus River System** into **Eastern** and **Western** rivers:
   a. **Eastern Rivers**: Beas, Ravi, Sutlej — India enjoys **unrestricted use** of these rivers.
   b. **Western Rivers**: Indus, Chenab, Jhelum — Pakistan controls the waters of these rivers.
2. **India's Obligation**: Article III (1) mandates that **India must allow the flow of water from the Western Rivers to Pakistan** while utilizing water for irrigation, power generation, and other purposes on the Eastern Rivers.

This arrangement gives **India** about **30%** of the total water in the system, while **Pakistan** controls the remaining **70%**.

Pakistan's Objections and the Role of Neutral Expert

1. In 2015, **Pakistan** requested the appointment of a **Neutral Expert** to address its technical concerns regarding the projects.
2. However, Pakistan retracted its request in 2016 and sought adjudication from the **Permanent Court of Arbitration (PCA)** instead.
3. **India**, however, maintained that the matter should be handled by the **Neutral Expert**, as per the Treaty's dispute settlement mechanism.
4. According to **Article IX** of the **IWT**, disputes can be settled through a **three-tier mechanism**:
   a. **Indus Commissioners of India and Pakistan**.
   b. **Neutral Expert** appointed by the World Bank.
   c. If the dispute remains unresolved, it can be taken to the **PCA**.

Despite India's objections to the PCA mechanism, the **World Bank** initiated two parallel processes in 2022: appointing a **Neutral Expert** and starting PCA proceedings. India continued to participate in the **Neutral Expert** process, asserting that it aligns with the provisions of the IWT.

Current Context

1. Recently, the World Bank appointed Neutral Expert on IWT backed India's stance on its competence regarding a dispute over **2 hydroelectric projects** in Jammu and Kashmir.
2. On **January 7, 2025**, the **Neutral Expert**, Michel Lino, declared that he is **competent** to adjudicate the differences between India and Pakistan regarding the **Kishenganga** and **Ratle** projects.
3. His decision is significant as it validates **India's position** that the **seven questions referred to the Neutral Expert** fall within his competence as outlined by the Treaty.
   a. **Pakistan's Argument**: Pakistan contended that the issues did not fall under the Neutral Expert's domain as defined by the Treaty.
   b. **India's Argument**: India insisted that the disputes clearly fall within the scope of the Treaty and that the Neutral Expert should render a decision.

The **Neutral Expert's decision** to proceed with the adjudication of the disputes was the **best possible outcome for India** at this stage, as it confirms that these matters will be resolved based on the merits of the case, as per the IWT.

Future of the Indus Waters Treaty (IWT)

India's Position on Modifying the Treaty

1. In response to Pakistan's **repeated objections** and **intransigence** regarding the hydroelectric projects, **India** has indicated its willingness to revisit the Treaty.

Click Here for INDEX

2. In **January 2023**, India issued a **formal notice** to Pakistan seeking **modifications** to the IWT. This marked the first time in over 60 years that such a notice was issued under the Treaty's **Article XII (3)**.

Factors for Modifying the Treaty

India's notice for **modification** of the IWT cited several reasons:

1. **Demographic changes** in the region.
2. **Environmental challenges** and the need for sustainable development.
3. The need to accelerate the **development of clean energy** to meet India's **climate goals**.
4. **Cross-border terrorism**, which affects India's security concerns, including those related to the waters of the Indus system.

Reviewing the Treaty

1. In **September 2024**, India issued a second formal notice seeking a **review and modification** of the IWT.
2. The inclusion of the term "review" signals India's intent to renegotiate or possibly **revoke** the Treaty. Experts believe this indicates a shift in India's stance due to **changed geopolitical and environmental realities**.

International Principles on Transboundary Water Sharing

1. **Helsinki Rules (1966):** Governs the use of shared rivers and groundwater, encouraging dispute resolution through negotiation and international courts.
2. **Helsinki Convention (1992):** Legal framework to prevent and control transboundary water pollution, requiring parties to follow the precautionary principle.
3. **UN Watercourses Convention (1997):** Establishes rules for cooperation between watercourse states, emphasizing **equitable and reasonable use** and **no significant harm** to neighbors

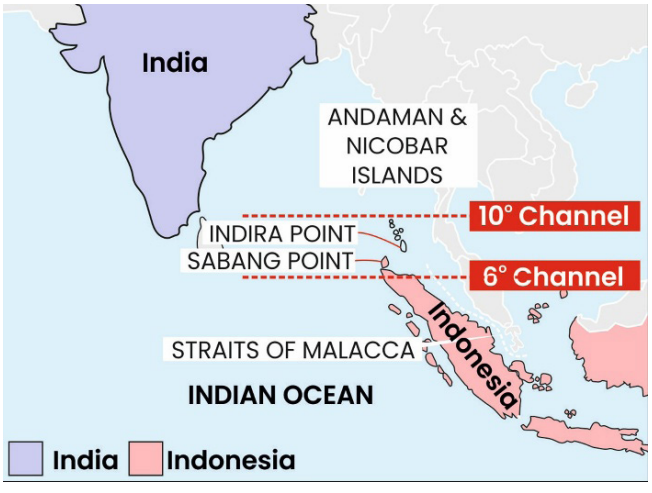
4. 75th Anniversary of India-Indonesia Diplomatic Relations

To commemorate the **75th Anniversary of India-Indonesia Diplomatic Relations**, the **Indonesian President** visited India in January, **2025**. This visit marked a significant milestone in the strengthening of bilateral ties between the two nations.

During this visit, several key developments took place.

Key Developments During the Indonesian President's Visit

1. **Agreements Signed**:
   a. **Health Cooperation**: Strengthening collaborative health initiatives.
   b. **Traditional Medicine**: Promoting the sharing of knowledge and practices.
   c. **Maritime Safety and Security**: Enhancing cooperation on regional maritime security issues.
   d. **Digital Development**: Exploring opportunities for digital transformation and collaboration.
   e. **Cultural Exchange Programme (2025-2028)**: Initiating a long-term cultural exchange to deepen mutual understanding.
2. **Third India-Indonesia CEOs Forum**: A joint report was presented at the **3rd India-Indonesia CEOs Forum**, highlighting collaborative efforts to boost trade and investment.
3. **Republic Day Celebrations**: The Indonesian President was the **chief guest** at India's **76th Republic Day celebrations**, showcasing the growing political and diplomatic ties between the two countries.
4. **Joint Statement**: A joint statement was issued, highlighting the shared areas of cooperation and mutual goals.



Significance of India-Indonesia Relations

1. Mutual Benefits of Bilateral Cooperation

a. **Economic Engagement**: The **India–Indonesia Economic and Financial Dialogue (EFD Dialogue)** (2023) aims to enhance economic collaboration and develop a shared understanding of global economic issues.

b. **Maritime Security**: The countries are working together to ensure the security of key maritime routes like the **Straits of Malacca and Singapore** (SOMS), enhancing cooperation in regional maritime mechanisms.

c. **Defence and Security**:
- **Strategic and operational cooperation** between defence forces is evident through joint exercises like **Garuda Shakti** (Army), **Samudra Shakti** (Navy), and **India-Indonesia Coordinated Patrol (CORPAT)**.
- Progress on **technology transfer**, including discussions on **Brahmos missile** collaboration, showcases deepening defence ties.

d. **Multilateral Cooperation**:
- Both nations coordinate closely on **multilateral forums** like the **United Nations (UN)** and **G20**, focusing on reformed multilateralism.
- Indonesia's membership in **BRICS** further strengthens the alignment of the two countries in **global governance**.

e. **Infrastructure & Connectivity**: **India's Development Partnership** with the **Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT)** helps enhance regional infrastructure and connectivity.

f. **Cultural and Heritage Cooperation**: The **Cultural Exchange Programme (2025-2028)** promotes deeper cultural ties, while the annual **Bali Jatra festival** commemorates the historic maritime trade and cultural exchange between India (Odisha) and Indonesia (Bali).

g. **Other Areas of Collaboration**: Both nations condemn all forms of terrorism, and collaborate in **Digital Public Infrastructure (DPI)**, **cybersecurity**, and **global health initiatives**.

2. India's Key Interests in the Relationship

a. **Trade**:
- **Indonesia** is India's **second-largest trading partner** in the ASEAN region (after Singapore). Bilateral trade has grown significantly from **$4.3 billion** in **2005-06** to **$29.40 billion** in **2023-24**.
- Despite the growth, the target of **$50 billion in bilateral trade** by 2025 remains a work in progress.

b. **Geostrategic Significance**: India's assistance in the development of **Sabang Port** in **Aceh** (Indonesia) aligns with its **SAGAR (Security and Growth for All in the Region)** initiative, boosting maritime connectivity and providing a strategic advantage in the **Indo-Pacific** region.

c. **Internationalization of the Indian Rupee**: A **MoU on Local Currency Settlement Systems (LCSS)** was signed to facilitate the use of **local currencies** for bilateral trade, reducing reliance on the dollar.

d. **Health and Pharmaceuticals**: India and Indonesia are collaborating on **Digital Health initiatives**, and India is sharing its best practices and capacity-building programs for Indonesian healthcare professionals.

3. Indonesia's Key Interests in the Relationship

a. **Market Access**: India is a key export destination for **Indonesia**, particularly as the **second-largest buyer** of **coal** and **crude palm oil**.

b. **Investment**: Indian companies have made substantial investments in **infrastructure**, **power**, **textiles**, **steel**, and **automotive sectors** in Indonesia.
- Notably, **GMR Airports Limited** is involved in developing and operating the **Kualanamu International Airport** in **Medan**.

c. **Climate Change and Disaster Resilience**:
- Indonesia is vulnerable to natural disasters like **earthquakes** and **tsunamis**.
- India has been involved in **Humanitarian Assistance and Disaster Relief (HADR)** activities and Indonesia is part of India-led initiatives like the **Coalition for Disaster Resilient Infrastructure (CDRI)**.

Click Here for INDEX

Click Here for INDEX

d. **Food Security**: India has supported **Indonesia's mid-day meal scheme**, sharing knowledge and experience to ensure food security for its population.

e. **Space Cooperation**: India's **ISRO** is working with Indonesia's **BRIN** (National Research and Innovation Agency) on **satellite telemetry** and tracking systems, enhancing space cooperation.

f. **Education and Skill Development**: India offers training through the **Indian Technical and Economic Cooperation (ITEC)** Programme and under the **ASEAN-India Network of Universities (AINU)**, contributing to skill development in Indonesia.

Challenges in India-Indonesia Relations

1. **Unrealized Trade Potential**:
   a. Despite the growing economic engagement, the bilateral trade potential between India and Indonesia stands at **$61 billion**, which is about **33% higher** than the current trade volume.
   b. Factors like high tariffs, non-tariff barriers, and limited utilization of the **India-ASEAN Free Trade Agreement (FTA)** are hindering full trade potential.
2. **China's Influence**: **China's significant presence** in Indonesia, particularly through investments under the **Belt and Road Initiative (BRI)**, raises concerns for India, especially in strategic sectors like infrastructure and energy.
3. **Slow Progress of Strategic Projects**: Strategic initiatives like **Brahmos missile deals** and **Sabang Port development** have faced slow progress due to various **economic and geopolitical challenges**.

Way Forward: Enhancing India-Indonesia Cooperation

1. **Identifying Areas for Convergence**:
   a. India and Indonesia can create an **"ASEAN Plus" policy**, aligning **ASEAN's Indo-Pacific outlook** with India's **Indo-Pacific Oceans Initiative (IPOI)**.
   b. Indonesia has committed to supporting the maritime resources pillar under **IPOI**.
2. **Trade Reforms**: **Rationalizing FTAs** and accelerating the negotiation of a **Comprehensive Economic Partnership Agreement (CEPA)** can help achieve the trade target of **$50 billion** by 2025.
3. **Regional Cooperation**:
   a. India can engage more actively in regional forums such as **ASEAN**, the **East Asia Summit (EAS)**, **BRICS**, and the **Indo-Pacific Oceans Initiative (IPOI)**.
   b. Inviting Indonesia to join forums like **BIMSTEC** could be beneficial for realizing India's **Act East Policy**.
4. **Cooperation in the Global South**: India and Indonesia should work together on issues crucial to the **Global South**, including climate change, sustainable development, and economic integration, using platforms for **South-South Cooperation**.
5. **Minilaterals and People-to-People Ties**:
   a. Promoting **minilateral forums**, like the **India-Indonesia-Australia trilateral** in specific sectors, will help deepen collaboration.
   b. **Cultural exchanges**, **education opportunities**, and **tourism** (capitalizing on the **ASEAN-India Year of Tourism 2025**) can further strengthen people-to-people ties.

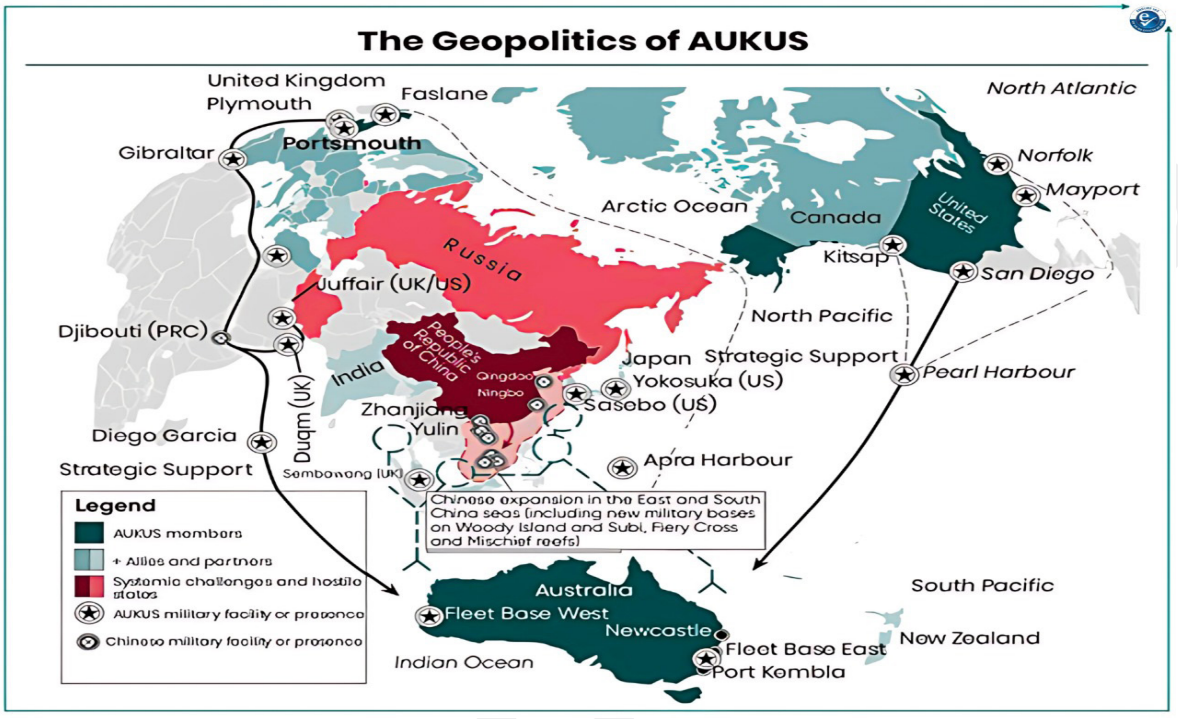
India-Indonesia relations have grown significantly over the years, with mutual benefits in **trade**, **defence**, **regional security**, **infrastructure**, and **cultural cooperation**. By addressing challenges like unrealized trade potential, slow strategic project implementation, and connectivity issues, the two nations can build an even stronger and more dynamic partnership in the future.

5. AUKUS has entered its 5th Year

1. **AUKUS** is a trilateral security and defense partnership formed between **Australia**, **the United Kingdom (UK)**, and the **United States (US)**.
2. Launched in **September 2021**, this strategic alliance aims to enhance defense capabilities, foster technological integration, and expand the industrial capacity of the three nations, particularly in the context of stabilizing the **Indo-Pacific region**.

Key Objectives of AUKUS (Australia, UK and US)

1. **Defense Strengthening**:
   a. AUKUS aims to support **Australia** in acquiring **conventionally armed, nuclear-powered submarines (SSNs)**, which will elevate Australia to the position of the **seventh nation** globally to operate nuclear-powered submarines.
   b. These nations include the **US**, **UK**, **France**, **China**, **India**, and **Russia**.



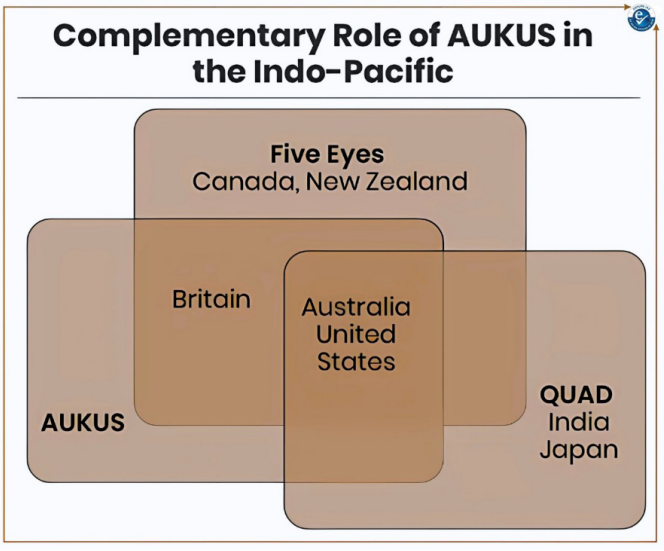
2. **Technological Integration**:
   a. The second pillar of AUKUS focuses on accelerating cooperation in critical technologies, including **artificial intelligence (AI)**, **cyber capabilities**, **quantum technologies**, and **undersea technologies**.
   b. The partnership will also enhance **intelligence-sharing** among the three nations, creating a technological edge over emerging global threats.

Strategic Significance of AUKUS

1. **Strengthening Defense Capabilities**:
   a. The partnership aims to ramp up **Australia's defense industrial base**, particularly by **2040**, aligning AUKUS with the vision of a **free and open Indo-Pacific**.
   b. This enhances the strategic positioning of these democracies in the region.
2. **Complementing QUAD**:
   a. While the **Quadrilateral Security Dialogue (QUAD)**—which includes **India**, **Japan**, **Australia**, and the **US**—has primarily been a diplomatic platform, AUKUS serves as a more focused **security alliance**.
   b. Since India has refrained from positioning QUAD as a security pact directly against **China**, AUKUS can fill this gap by emphasizing defense partnerships in the Indo-Pacific.
3. **Strategic Competition with China**:
   a. A central objective of AUKUS is to establish a **technological dominance** in the Indo-Pacific, particularly through advancements in critical technologies like AI, cybersecurity, and quantum technologies.
   b. This focus directly challenges China's growing influence and technological advancements in the region.
4. **Alliance of Liberal Democracies**:
   a. As an alliance of **liberal democracies**—the US, UK, and Australia—AUKUS is projected as a counterbalance to the growing power of autocratic nations, particularly China.

Click Here for INDEX

b. **Japan's interest** in joining AUKUS, especially in the second pillar for cooperation in critical technologies, further solidifies the alliance's legitimacy and attractiveness in the region.



Concerns and Challenges Related to AUKUS

1. **Geopolitical Concerns**:
   a. AUKUS has raised concerns in some **Southeast Asian** countries, such as **Indonesia** and **Malaysia**, about the potential for an **arms race** and **nuclear proliferation** in the Indo-Pacific region.
   b. Additionally, **Australia's decision** to cancel a submarine deal with **France** in favor of AUKUS led to **strained diplomatic relations** between France and the AUKUS members, highlighting geopolitical tensions.
2. **Impact on QUAD's Strategic Role**:
   a. There are concerns that AUKUS might overshadow **QUAD**, diverting focus from broader Indo-Pacific regional cooperation to a more concentrated defense alliance.
   b. This shift could dilute the **strategic role** of QUAD, which has traditionally balanced diplomatic and security elements.
3. **Nuclear Proliferation Risks**:
   a. One of the most contentious aspects of AUKUS is the **nuclear-powered submarine arrangement** for Australia. Critics argue that AUKUS might set a **precedent** for **nuclear proliferation** under the guise of security.
   b. While Australia is not seeking nuclear weapons, the deal has raised concerns about the potential for other nations to pursue nuclear-powered technologies using similar security justifications, potentially undermining the **Nuclear Non-Proliferation Treaty (NPT)**.

AUKUS: Implications for India

For **India**, AUKUS presents both **challenges and opportunities**, requiring a careful balancing act to safeguard its **strategic autonomy** while deepening regional partnerships.

1. **Challenges for India**:
   a. India must **navigate the implications** of AUKUS on its own defense and security policies.
   b. The alliance's strategic competition with China could lead to increased pressure on India to align more closely with AUKUS, despite India's preference for a more independent foreign policy.
2. **Opportunities for India**:
   a. AUKUS offers India the chance to **enhance its naval capabilities** by learning from the technological advancements in undersea technologies and nuclear-powered submarines.
   b. India can also deepen its **defense ties with Australia**, a fellow member of **QUAD**, strengthening multilateral security cooperation in the Indo-Pacific.
3. **Strategic Autonomy**:
   a. India must ensure that its **strategic autonomy** is maintained while engaging with AUKUS.
   b. India can leverage **QUAD** and **ASEAN** partnerships to maintain a balanced approach in the region while participating in critical **technological cooperation** under AUKUS, particularly in areas like **cybersecurity** and **artificial intelligence**.

AUKUS represents a significant evolution in the strategic architecture of the **Indo-Pacific region**, offering both opportunities and challenges for its member nations, as well as for countries like **India**. While the alliance aims to enhance defense capabilities and foster technological collaboration, it also raises concerns about **nuclear proliferation** and its impact on other regional security

frameworks like **QUAD**. India's engagement with AUKUS, while cautious, could provide avenues to bolster its defense capabilities, strengthen regional security, and maintain a balanced approach towards emerging global challenges.

6. Philadelphi Corridor

The **Philadelphi Corridor** is a narrow strip of land that serves as a key border area between the **Gaza Strip** and **Egypt's Sinai Peninsula**. This area has gained significant attention due to recent ceasefire agreements between **Israel** and **Hamas**, which stipulate Israel's withdrawal from the corridor.

Key Features of the Philadelphi Corridor

1. **Geographic Location and Dimensions**:
   - **a.** The Philadelphi Corridor spans approximately **14 kilometers** in length and is **100 meters** wide.
   - **b.** It runs from the **Mediterranean Sea** in the west to the **Kerem Shalom crossing** in the east, which connects **Gaza** to **Israel**.
2. **Historical Context**:
   - **a.** The corridor was originally established as part of the **1979 Israel-Egypt Peace Treaty**.
   - **b.** After **Israel's withdrawal from Gaza** in **2005**, the area was designated as a **demilitarized zone**, meaning it was meant to remain free from military presence, including Israeli settlements and troops.

3. **Strategic Importance**:
   - **a.** The corridor serves as a **critical border zone**, lying between the southern part of the **Gaza Strip** and **Egypt's Sinai Peninsula**.
   - **b.** It plays a significant role in the movement of goods and people between **Gaza** and **Egypt**, especially given the political and military restrictions in Gaza.

7. U.S. Plans to Withdraw from WHO

1. In January 2025, just after taking office for Second term, United States (U.S.) President Donald Trump signed an executive order to withdraw the U.S. from the World Health Organization (WHO).
2. This is the **second time Trump has attempted to withdraw** from the WHO.
   - **a.** **In 2020**, during the pandemic and toward the end of his first term, Trump submitted a letter to the Secretary-General of the United Nations stating the U.S.'s intention to withdraw.
   - **b.** But after **he lost the 2020 election,** the threat did not materialize. On his first day in office, Jan. 20, 2021, former President Joseph R. Biden Jr. blocked it from going into effect.

Why U.S. Plans to Withdraw from WHO?

1. In an executive order issued, Mr. Trump cited W.H.O.'s **"mishandling of the COVID-19 pandemic,"** and the **"failure to adopt urgently needed reforms."**
2. He said the agency demands **"unfairly onerous payments"** from the U.S., and complained that **China pays less.**

What does the executive order say?

Trump's executive **order highlights four key things** that will happen as the US exits from the global health organisation:

1. **One,** any transfer of US funds and resources to the WHO will be paused.
2. **Two**, all US government personnel or contractors working in any capacity with the WHO will be recalled.
3. **Three,** the U.S. will "identify credible and transparent U.S. and international partners to assume necessary activities previously undertaken by the WHO."
4. **Four**, and importantly, the U.S. will cease negotiations towards the pandemic treaty the WHO is working on.

Click Here for INDEX

How Can the U.S. Withdraw from WHO? What happens next?

1. There is **no provision for withdrawing** in WHO's constitution.
2. In the WHO's agreement with the U.S., the U.S. would provide **one year's advance notice** and **pay any remaining balance** to the organization in order to leave.
    - But that agreement, made in 1948 when the WHO had just been created, was made through a joint act of Congress. It's not clear whether Congress would have to act to implement the withdrawal.

What will be the financial implication on WHO?

Withdrawal of the U.S. is likely to have a huge financial impact on the WHO, with the agency receiving around a 5th of its funds from the country.

1. The U.S. is **giving about 20% of its budget.** In assessed contributions, the U.S. is the biggest payer, accounting for **22.5% of the contributions**, **followed by China at 15%.**
    - Of the total USD 578 million assessed contributions, the U.S. pays approximately USD 138 million and China USD 87.6 million.
2. In **voluntary contributions**, while the **US is still the biggest donor**, accounting for around 13% (USD 356.3 million) of the total contributions in 2023, China accounted for only about 0.14% of the total contributions (USD 3.9 million).
3. The **second biggest voluntary contributor** was the Bill and Melinda Gates Foundation.
4. **This loss could also weaken WHO's political** influence, as the U.S. is a key member and has been involved in **decision-making since WHO was created in 1948.**
5. WHO works closely with the U.S. on many of these programs, so losing that partnership could slow down or even harm these efforts.
6. Many scientists from the U.S. work with WHO on health issues. If the U.S. pulls out, WHO could lose valuable expertise, **which could affect its ability to respond to health emergencies** or improve healthcare worldwide.
7. These countries also benefit from joint efforts between WHO and U.S. agencies like **USAID (U.S. Agency for International Development).** If the U.S. withdraws, it could make it harder for these countries to get the support they need.

Will India be impacted?

1. With WHO losing out on a significant proportion of its funding, its **work across countries, including India, is likely to be affected.**
2. The WHO participates in and supports several health programmes of the Indian government, such as **its work on neglected tropical diseases**, **HIV-malaria-and tuberculosis**, **anti-microbial resistance (AMR)**, among others.
3. Importantly, it plays a significant role in the **country's immunisation programme**, with WHO teams even monitoring vaccine coverage.
4. In addition, the **loss of expertise from the U.S. would also impact** WHO's role of providing guidance.
5. Importantly, this will also sever the collaboration between the WHO and the US Centres for Disease Control and Prevention (CDC), which is key to international surveillance and response to health threats.

What is the role of India and the global south?

1. The vacuum created by the U.S. is likely to be filled by China and countries from the Global South, including India.
2. A policy piece by ORF said that Europe could be another contender, but a considerable amount of its resources is diverted towards the Russia-Ukraine conflict, "indicating that the gap will be filled by philanthropies like the BMGF (Bill and Melinda Gates Foundation)."

Have countries withdrawn from the WHO before?

In 1949, a year after the WHO's creation, the then Soviet Union and a number of satellite states in Eastern Europe withdrew as Cold War tensions mounted. However, they returned in 1956.

World Health Organization (WHO)

1. **Established in** 1948, **specialized agency of the United Nations (UN).** Promote international cooperation for improved public health and the attainment of **"the highest possible level of health" for all people.** WHO **defines health** as *"a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."*
2. **History:**
   a. Inherited tasks from the **Health Organization of the League of Nations** (1923) and the **International Office of Public Health (Paris, 1907)**.
   b. **World Health Day:** Celebrated annually on April 7th, the date of WHO›s establishment (1948).
3. **WHO's Headquarters in** Geneva, Switzerland and has six regional offices globally.

India and WHO

1. India became a member of the WHO Constitution on January 12, 1948.
2. **First session of WHO Regional Committee** for South-East Asia held in India on October 4-5, 1948. Inaugurated by Prime Minister Pandit Jawaharlal Nehru, addressed by WHO Director-General Dr. Brock Chisholm.
3. India is a Member State of the WHO South-East Asia Region. WHO Country Office for India is based in Delhi with a nationwide presence.

8. US Withdraws from Paris Climate Agreement for Second Time

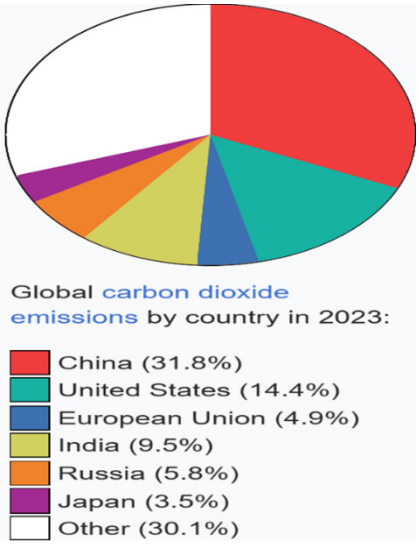
1. In January 2025, President Donald Trump once again withdrew the United States (U.S.) from the Paris Climate Agreement.
2. Trump has repeatedly referred to climate change as a **"hoax" (fallacy)** and has sought to free U.S. oil and gas industries from environmental regulations.
3. As a result of this decision, the **U.S. will join Iran, Libya, and Yemen** as the only four countries not party to the agreement.
   - Interestingly, during **Trump's first term**, the U.S. withdrew from the Paris Climate Agreement, but his successor, President Joe Biden, rejoined the agreement in 2021.

What is the Paris Agreement?

1. The Paris Agreement is an international treaty adopted in 2015 by nearly every country to address climate change and mitigate its adverse effects.
2. The agreement's primary goal is to limit global warming to "well below" 2 degrees Celsius above pre-industrial levels, with an aspiration to limit it to 1.5 degrees.

Greenhouse Gases (GHGs)

1. Greenhouse gases (GHGs) are those gases in the Earth's atmosphere that trap heat. They allow sunlight to pass through but prevent the heat from escaping back into space.
2. Essentially, GHGs act like a blanket, insulating the Earth from the cold of space, a phenomenon known as the greenhouse effect.
3. The most prominent GHGs are water vapour, carbon dioxide, methane, ozone, and nitrous oxide.
4. These gases naturally occur and are vital for life on Earth. Without the greenhouse effect, Earth would be too cold to sustain liquid water or life.
5. The agreement's focus on a **1.5-degree limit** stems from scientific findings that breaching this threshold would pose significant risks to vulnerable regions and ecosystems over an extended period.
6. The Paris Agreement also mandates that all parties review and enhance their **Nationally Determined Contributions (NDCs) every five years**, with each new NDC reflecting a higher level of ambition in addressing climate change.



Click Here for INDEX

How Does a Country Withdraw from the Paris Agreement?

1. Article 28 of the Paris Agreement outlines the process and timeline for withdrawal.
   a. It states that a country may withdraw after three years of the agreement coming into force (which happened in 2016). The country must provide written notification to the Depositary.
   b. The withdrawal takes effect one year after the Depositary receives the notification, or later if specified by the withdrawing country.
2. Once the notification is submitted, the withdrawal is effective after one year (or a later date specified).
3. Until the withdrawal becomes effective, the country remains a member of the agreement and is required to fully participate in its activities.

Impact of U.S. Withdrawal

1. The U.S. withdrawal significantly hampers global efforts to combat climate change. As a major emitter, the U.S. **"free-riding"** on emission reductions will demotivate other countries from enhancing their own climate goals.
   - Despite the U.S. being the **second-largest emitter, after China**, globally, it is important to note that 194 other countries, which represent approximately 90% of global emissions, remain committed to the Paris Agreement.
2. The withdrawal has led to the cessation of U.S. contributions to climate finance.
3. This impacts the global climate finance goal of **$1.3 trillion per year by 2035**, which was agreed upon in Baku. Achieving this goal is now considerably more challenging.
4. The decision will have a direct negative impact on the poorest nations, especially those that are most vulnerable to climate disasters.
   - It also undermines the international community's confidence in the agreement's effectiveness.

Conference of the Parties (COP) and the Role of the IPCC

Conference of the Parties (COP)

1. The Conference of the Parties (COP) is the annual meeting of the members of the UN Framework Convention on Climate Change (UNFCCC), which serves as the foundation for climate negotiations.
2. The UNFCCC currently has 198 parties, including 197 countries and the European Union, representing nearly universal membership.

Key Milestones from COP Conferences

1. **COP3 in Kyoto (1997):** The Kyoto Protocol was adopted, which set binding obligations for industrialized countries to reduce their greenhouse gas emissions. However, it was short-lived due to opposition from some powerful countries.
2. **COP21 in Paris (2015):** The Paris Agreement was adopted, setting a legally binding target to limit global warming to well below 2°C, and preferably 1.5°C.
3. **COP26 in Glasgow (2021):** The Glasgow Pact committed to phasing down coal use and phasing out inefficient fossil fuel subsidies. It was the first time coal was explicitly mentioned in a UN climate agreement.
4. **COP28 in Dubai (2023):** A Loss and Damage fund was established to provide financial aid to countries affected by climate disasters.

Intergovernmental Panel on Climate Change (IPCC)

1. The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body that assesses scientific information related to climate change. It was established in 1988 by the World Meteorological Organization (WMO) and the UN Environment Programme (UNEP).
2. The IPCC's objectives include producing assessment reports, special reports, and methodology reports to assess climate science and offer potential response strategies.

9. 18th Pravasi Bharatiya Divas (PBD) 2025

1. The Pravasi Bharatiya Divas (PBD) celebrated once in two years on 9th January is a significant event that honors the contributions of the Indian diaspora to their homeland.
    - **January 9** was chosen for this celebration as it marks the day in **1915** when **Mahatma Gandhi returned to India from South Africa to lead the Indian freedom struggle.**
2. The PBD Convention was **first** established in **2003** under the government of then Prime Minister **Late Shri Atal Bihari Vajpayee,** as a platform to **recognize and engage** with the **overseas Indian community**.
3. The PBD is the **flagship** event of the **Ministry of External Affairs (MEA)**.
4. It is held in different cities, to showcase the diversity and progress of different regions of India.
5. Since **2015**, it has evolved into a **biennale event**, with **theme-based conferences** held in the intervening years.

18th PBD 2025

1. In January 2025, the 18th edition of PBD Convention organised by Bhubaneswar, Odisha. The theme for this year is the "Diaspora's contribution to a Viksit Bharat" (Developed India).
2. During the Convention, the Prime Minister of India **inaugurated the Pravasi Bharatiya Express**, a special tourist train for the Indian diaspora.
    a. The Pravasi Bharatiya Express was **conducted under the Pravasi Teertha Darshan Yojana** of the **Ministry of External Affairs**.
3. PM highlighted the **significance of Girmitiyas** (indentured laborers from pre-independent India) who were **sent to countries like Fiji, Mauritius, Trinidad and Tobago, and others**.
    a. It was also **suggested to create a comprehensive database of the Girmitiyas**.

Pravasi Bharatiya Samman Award (PBSA):

1. The award, given out as part of the Pravasi Bharatiya programme, is the **highest honour** conferred on a **Non-Resident Indian (NRI)**, **Person of Indian Origin (PIO);** or an organisation or **institution established and run by them.**
2. The award is to commemorate the **contribution of the Indian diaspora to create a better understanding of India abroad**, support India's causes and work for the welfare of the local Indian community.

17th PBD Convention – 2023

The 17th PBD Convention, held from January 8-10, 2023, in Indore, Madhya Pradesh, focused on the theme "Diaspora: Reliable partners for India's progress in Amrit Kaal".

What is Diaspora?

1. The term diaspora **traces its roots to the Greek *diaspeiro***, which means dispersion.
2. The Indian diaspora has grown manifold since the first batch of Indians were taken to counties in the east pacific and the **Caribbean islands** under the **'Girmitiya'** arrangement as indentured labourers.
3. **Classification of Diaspora:**
    a. **Non-Resident Indians (NRIs):** NRIs are **Indians who are residents of foreign countries.** A person is considered NRI if:
        - A person is a **non-resident** if they are in India for **less than 182 days in** a year or **less than 365 days** in the preceding 4 years and less than 60 days in the current year.
    b. **Persons of Indian Origin (PIOs):** PIO **refers to a foreign citizen (previously held an Indian passport)** who or their parents/grandparents born in India or who is a spouse of a citizen of India or a PIO.
        - Nationals of Pakistan, Afghanistan, Bangladesh, China, Iran, Bhutan, Sri Lanka and Nepal **are not included in the PIO classification**.
        - The **PIO category was abolished in 2015** and merged with the OCI category.
    c. **Overseas Citizens of India (OCIs):** A separate category of **OCI** was carved out in 2005.
        - An OCI card is **granted to a foreign national** who was eligible for Indian citizenship on **26th January 1950 or** belonged to a territory that became part of India after 15th August 1947.

Click Here for INDEX

- Minor children of such individuals, (excluding nationals of Pakistan and Bangladesh), were also eligible for OCI cards.

Government Initiatives Related to the Welfare of Indian Diaspora

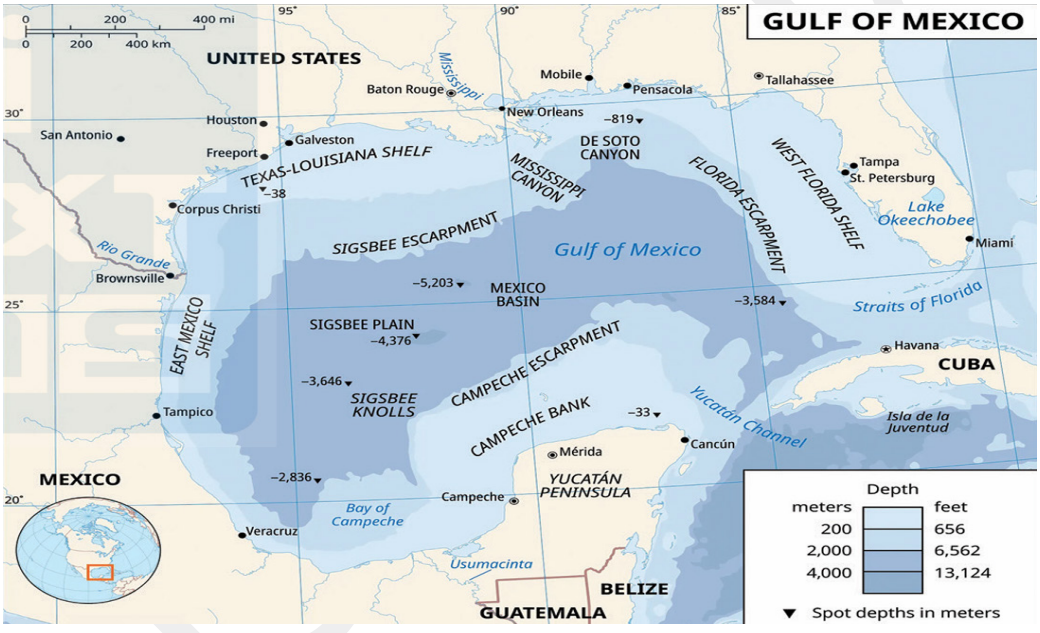
1. National Pension Scheme for NRIs
2. Online Services for Voters
3. Know India Program
4. Overseas Citizenship of India (OCI) Card Scheme
5. Indian Community Welfare Fund (ICWF)
6. Pravasi Bhartiya Kendra
7. India Development Foundation of Overseas Indians (IDF-OI)

10. Rename the Gulf of Mexico to Gulf of America

1. There has been a proposal to rename the Gulf of Mexico to "Gulf of America."
2. The Gulf of Mexico is a large body of water bordered by the United States, Mexico, and Cuba, which plays a key role in global trade and climate conditions.

About Gulf of Mexico:

1. **Boundaries:**
   a. United States (North),
   b. Mexico (West and South),
   c. Cuba (South-east).



2. **Connectivity:**
   a. The Gulf connects to the Atlantic Ocean through the Straits of Florida.
   b. It is also linked to the Caribbean Sea via the Yucatán Channel.

Key Features:

1. **Draining Rivers:** The Mississippi River and Rio Grande flow into the Gulf of Mexico, contributing to its water system.
2. **Control and Ownership:** The Gulf of Mexico is shared by the United States, Mexico, and Cuba.
3. **Significance:**
   a. **Economic Importance:** It is a major hub for oil and natural gas extraction.
   b. **Fisheries:** The Gulf has a significant role in the fishing industry.
   c. **Continental Shelf:** It has a large continental shelf that supports various marine activities.

11. U.S. control over the Panama Canal

1. **U.S. President** Donald Trump has recently threatened to reimpose U.S. control over the Panama Canal.
2. The Panama Canal is an important artificial waterway that connects the Pacific Ocean with the Atlantic Ocean through the narrow **isthmus of Panama.**

About Panama Canal:

1. **Length:** 82 km (51 miles).
2. **Path:** It transports ships through Gatun Lake, facilitating passage between the Pacific and Atlantic Oceans.

Significance:

1. **Strategic Importance:** The Panama Canal is one of the two most strategic artificial waterways in the world, with the other being the Suez Canal.
2. **Shortened Distance:** The canal significantly reduces the distance between the east and west coasts of the United States by approximately 8,000 miles (around 22 days of travel time for ships).

12. India Joins UN Panel on Big Data

India has been included in the United Nations Committee of Experts on Big Data and Data Science for Official Statistics (UN CEBD). This marks a significant step in India's involvement in global statistical practices and data-driven progress.

About the UN Committee of Experts on Big Data and Data Science for Official Statistics (UN CEBD)

1. **Establishment:** The UN CEBD was created in 2014, with Australia serving as the first Chair.
2. **Composition:** It consists of 31 member states and 16 international organizations.
3. **Plenary Meetings:** A plenary meeting is held annually, usually alongside the Conference on Big Data for Official Statistics, to review and discuss activities and initiatives.

Mandate of the UN CEBD

The UN CEBD has a crucial role in shaping global data initiatives and promoting the use of big data in achieving sustainable development:

1. **Global Big Data Program:** It provides direction for a global big data program, aligning with the 2030 Agenda for Sustainable Development.
2. **Addressing Data Challenges:** It addresses challenges related to data quality, access, privacy, security, and analytics.
3. **Training and Collaboration:** The committee fosters training, experience-sharing, and collaboration among member states.
4. **Policy Applications and SDGs:** It promotes the use of big data for policy applications and monitoring the Sustainable Development Goals (SDGs).

Importance for India

India's inclusion in the UN CEBD brings significant benefits and opportunities:

1. **Strengthening Global Influence:** India's involvement strengthens its influence in global statistical practices and reinforces its commitment to data-driven progress.
2. **Alignment with International Goals:** Membership allows India to align domestic advancements in big data with international goals, showcasing leadership in data science.
3. **Modernizing Statistical Processes:** Big data, along with advanced techniques like the Internet of Things (IoT), satellite imagery, and private sector data, will help modernize statistical processes and improve data accuracy.
4. **Recent Achievements:** This is a key achievement for India, especially following its recent re-entry into the UN Statistical Council.

United Nations Statistical Commission (UNSC)

1. **Establishment:** The UNSC was established in 1946 as the highest body of the global statistical system.
2. **Composition:** It comprises Chief Statisticians from member states worldwide.
3. **Role:** The UNSC serves as the top decision-making body for international statistical activities.
4. **Functions:** It is responsible for setting statistical standards, developing concepts and methodologies for national and international implementation, and overseeing the United Nations Statistics Division (UNSD).
5. **Affiliation:** The UNSC functions as a commission under the UN Economic and Social Council (ECOSOC).

Click Here for INDEX

C. SECURITY

1. INS Nilgiri, INS Surat and INS Vagsheer Commissioned

In January 2025, three significant frontline combat ships were commissioned in the Indian Navy at the Naval Dockyard in Mumbai, marking a major milestone for India's maritime defense capabilities.

1. **INS Vagsheer** - The 6th and final submarine of the Scorpene-class under **Project 75**.
2. **INS Nilgiri** - The lead ship of the **Project 17A stealth frigates**.
3. **INS Surat** - The 4th and final ship of the **Project 15B stealth destroyers**.

INS Vagsheer

INS Vagsheer is the last submarine of the **Kalvari class**, which is a modern stealth-class built under **Project 75**. The design is based on the **Scorpene class**, developed by France's **Naval Group** and Spain's **Navantia**.

1. **Naming:** The submarine is named after a deep-sea predator, the sandfish, found in the Indian Ocean.
2. **Construction:** Built at **Mazagon Dock Shipbuilders Limited (MDL)**, Mumbai, under a $3.75 billion technology transfer deal with France's **Naval Group**.
3. **Key Capabilities:**
   a. **Combat Roles:** Capable of anti-surface warfare, anti-submarine warfare, intelligence gathering, and special operations.
   b. **Sensors:** Equipped with advanced sonar systems for superior detection and tracking.
   c. **Specifications:**
      i. **Length:** ~220 feet
      ii. **Height:** ~40 feet
      iii. **Speed:** 11 knots (~20 km/h) surfaced, 20 knots (~37 km/h) submerged
      iv. **Endurance:** 50 days without refueling.
      v. **Propulsion:** Diesel-electric system (diesel engines for surface and electric motors for underwater).

Project 75 Overview:

1. **Objective:** Construction of six **Scorpene-class diesel-electric attack submarines** for the Indian Navy.
2. **Built by:** Mazagon Dock Shipbuilders Limited (MDL) in Mumbai in collaboration with France's **Naval Group**.
3. **Timeline:** Commissioning of submarines from 2017 to 2025 (INS Kalvari in 2017, INS Khanderi in 2019, INS Karanj in 2021, INS Vela in 2021, INS Vagir in 2023, and INS Vagsheer in 2025).
4. **Features:** Stealth, operational versatility, and the ability to launch precision-guided weapons. Future developments include retrofitting with **AIP systems**.

INS Surat

INS Surat is the **4th ship** under **Project 15B**, following **INS Visakhapatnam**, **INS Mormugao**, and **INS Imphal**. This class of **guided-missile destroyers** is designed for offensive naval operations, offering high speed, maneuverability, and endurance.

1. **Key Features:**
   a. **Size and Power:** Displacement of **7,400 tons** and a length of **164 meters**.
   b. **Armament:** Equipped with **BrahMos supersonic surface-to-surface missiles** and **Barak-8 medium-range surface-to-air missiles**.
   c. **Propulsion: Combined Gas and Gas (COGAG)** system with four gas turbines, allowing speeds exceeding **30 knots** (~56 km/h).
   d. **Technology:** First **AI-enabled warship** using indigenously developed solutions to enhance operational efficiency.

Project 15 Overview:

1. **Origin:** The **Delhi class (Project 15)** destroyers, commissioned between 1997 and 2001, served as the basis for the development of **Project 15A (Kolkata-class)** and **Project 15B (Visakhapatnam-class)** destroyers.

2. **Armament:** The destroyers are armed with **16 Brahmos** anti-ship missiles, **32 Barak-8 missiles**, anti-submarine torpedoes, and other close-in weapon systems.
3. **Helicopter Accommodation:** Twin hangars for Sea King Mk 42 or MH-60R Seahawk helicopters.

INS Nilgiri

INS Nilgiri is the first of the **Project 17A stealth frigates**, an upgraded version of the **Shivalik-class** (Project 17) frigates currently in service.

1. **Design and Construction:** Built by **Mazagon Dock Shipbuilders Limited (MDL)** and **Garden Reach Shipbuilders and Engineers (GRSE)**, Kolkata.
2. **Key Features:**
   a. **Stealth Technology:** The ship incorporates a unique hull design and radar-transparent deck fittings, making it less detectable.
   b. **Weaponry:** Armed with a **supersonic surface-to-surface missile system**, **Medium Range Surface-to-Air Missiles**, **76mm Upgraded Gun**, and **close-in weapon systems**.
   c. **Propulsion:** Powered by **Combined Diesel or Gas (CODOG)** propulsion with both Diesel and Gas Turbine engines.

Project 17A Overview:

1. **Objective:** Construction of a series of stealth **guided-missile frigates**, improving upon the **Shivalik-class** (Project 17) with advanced stealth features and capabilities.
2. **Construction:** Ships are being constructed at **Mazagon Dock Shipbuilders (MDL)** and **Garden Reach Shipbuilders & Engineers (GRSE)**.
3. **Indigenous Contribution: 75% of orders** have been placed with Indian companies, contributing to the **Atma Nirbhar Bharat** initiative.
4. **Key Milestones:** The first ship, **INS Nilgiri**, was commissioned in 2024, with further ships expected in the coming years.

Difference Between Frigates and Destroyers

Aspect	Frigates	Destroyers
Role	Primarily used for **anti-submarine warfare (ASW)** and **escort missions**.	Multi-role ships designed for **anti-air**, **anti-surface**, and **anti-submarine warfare**.
Size and Displacement	Smaller, typically between **2,000 to 4,000 tons**.	Larger, typically between **5,000 to 10,000 tons**.
Speed	Typically, **25–30 knots**.	Faster, exceeding **30 knots**.
Armament	Equipped with fewer weapons, mainly **torpedoes**, **anti-submarine rockets**, and **surface-to-air missiles**.	Heavily armed with **long-range missiles**, **advanced radars**, and **guns** for versatile combat roles.
Cost and Scope	Less expensive, best suited for **regional defense**.	More expensive, designed for **blue-water navy operations** and offensive missions.

2. India's 1st Indigenous Micro-Missile System: Bhargavastra

1. **Bhargavastra, India's first indigenous micro-missile** system was **successfully tested in January 2025.**
2. This system was **Developed** by **Economic Explosives Ltd., a** subsidiary of Solar Industries India (SII) Limited to counter the growing threat of **swarm drones**.
3. As modern warfare evolves, the use of swarm drone has become a significant challenge for conventional defense systems.

Key Features of Bhargavastra

Bhargavastra is a fully **indigenous system.**This aligns with the government's **AtmaNirbhar Bharat** (Self-Reliant India) initiative, reducing dependency on **foreign defense imports** and **boosting domestic innovation.**

1. **Technical Capabilities**:
   a. **Range**: Bhargavastra can **engage targets up to 2.5 kilometers** away, making it **effective against aerial threats.**

Click Here for INDEX

b. **Detection**: The system can detect drones as small as **6 kilometers** away, due to its advanced radar and surveillance technology.

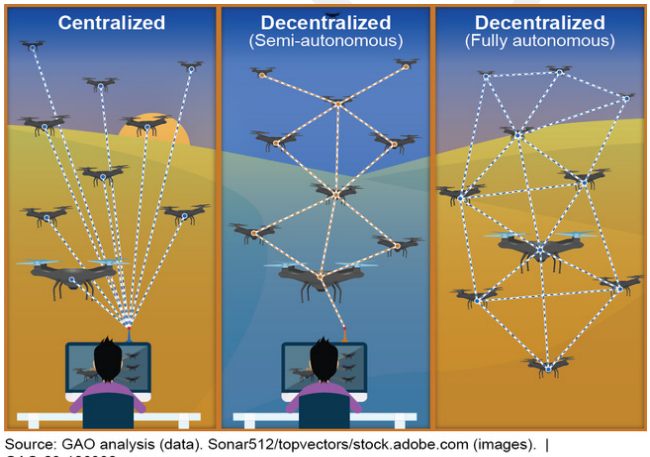
c. **Micro Munitions**: It uses **precision-guided micro missiles** to neutralize targets with high accuracy.

d. **Simultaneous Firing**: It can fire up to **64 micro missiles** at once.

2. The system is designed to be **mobile**, allowing for **rapid deployment across diverse terrains, including high-altitude regions like the Indian borders.**

What are swarm drones and how do they work?

1. **Swarm (Smart War-Fighting Array of Reconfigured Modules)** drones refer to a group of drones that operate together autonomously, using advanced algorithms and communication systems to complete tasks.
2. Unlike individual drones, swarm drones can work in harmony, making them more efficient and resilient.
3. Swarm drones can perform tasks like surveillance, reconnaissance, and even precision strikes. If one drone fails, the others continue the mission, ensuring operational continuity.
4. **Advanced Algorithms**: These drones rely on **sophisticated algorithms**, local sensing technologies, and real-time communication to coordinate their actions.
5. Recently in the Russia-Ukraine war, drone swarms were deployed for surveillance and attacks.



Source: GAO analysis (data). Sonar512/topvectors/stock.adobe.com (images). | GAO-23-106930

a. **Control Systems**: Swarm drones can operate in 3 ways:

- **Pre-programmed paths**: Drones follow a **predefined flight plan.**
- **Centralized control**: A **single control station or drone oversees the entire swarm.**
- **Distributed control**: Drones communicate among themselves and adapt to changing conditions.

Applications of Swarm Drones:

1. **Military Use**: Swarm drones are increasingly used for coordinated military operations, including surveillance, reconnaissance, and targeted strikes.
2. **Disaster Response**: In scenarios like wildfires or natural disasters, swarm drones can assess damage, deliver supplies, and even assist in firefighting.

Government initiatives to promote the drone ecosystem

India has been actively promoting the development and adoption of drone technology through various government initiatives:

1. **Drone Rules, 2021:** These rules provide a **simplified regulatory framework for drone operations in India, making it easier for individuals and companies** to obtain necessary permissions and licenses.
2. **Production Linked Incentive (PLI) scheme** to boost domestic drone manufacturing by providing financial incentives to companies that meet certain production targets. It encourages investment in drone technology and helps to reduce reliance on imports.
3. **Drone Shakti** initiative promotes the **use of drones as a service through startups, particularly in areas like agriculture,** infrastructure inspection, and logistics.
4. **Kisan Drone scheme** provides subsidies to farmers for purchasing drones used in agriculture, such as for applying pesticides and fertilizers.
5. **SVAMITVA (Survey of Villages and Mapping with Improvised Technology in Village Areas) scheme** uses drones for land surveying and mapping in rural areas, helping to digitize land records and improve property ownership clarity.
6. **Namo Drone Didi scheme aims** to empower women-led Self-Help Groups (SHGs) by providing them with drones for agricultural services.

India has joined Eurodrone programme

1. In January 2025, India has joined **Eurodrone programme** as an observer member.
2. **Eurodrone** or **European Medium Altitude Long Endurance Remotely Piloted Aircraft System (MALE RPAS)** is a twin-turboprop MALE unmanned aerial vehicle (UAV).
3. It can be used for long-endurance missions such as intelligence, surveillance, target acquisition, and reconnaissance (ISTAR), maritime surveillance, etc.
4. **About Eurodrone programme**
   - **Members:** Four-nation initiative involving Germany, France, Italy, and Spain.
   - **Led by:** the Organisation for Joint Armament Cooperation (OCCAR).

3. SANJAY: Battlefield Surveillance System

In January 2025, Ministry of Defence launched **SANJAY**, an advanced **Battlefield Surveillance System (BSS)**, to enhance the Indian Army's surveillance and reconnaissance capabilities.

About SANJAY System

1. **It is** jointly developed by the **Indian Army & Bharat Electronics Limited** (BEL), in line with the **'Aatmanirbhar Bharat'** initiative.
2. It creates a **unified surveillance picture of the battlefield** via the Army Data Network and Satellite Communication Network by processing the gathered information.
   - The system is designed to **seamlessly integrate data** from both **ground and aerial battlefield sensors**.

4. Anti-Tank Guided Missile (ATGM) Nag Mark-2

India has successfully conducted **field evaluation trials** of indigenously-developed third-generation **anti-tank guided missile Nag Mark-2.** The trials were conducted at the Pokhran field range in Rajasthan.

About Nag Mark-2 Missile

1. Nag Mk-2 is an indigenously made **all-weather, fire-and-forget**, lock-on after launch, **anti-tank guided missile** (ATGM).
2. **Developed by:** Defence Research and Development Organisation (DRDO).
3. Nag Mk-2 missile is launched from the **NAMICA** (Nag Missile Carrier).
   a. **NAMICA is an anti-tank armored vehicle or tank destroyer** vehicle used by the Indian Army to launch anti-tank missiles.
   b. NAMICA is based on SARATH BMP-II. SARATH BMP-II is an amphibious **infantry combat vehicle** (ICV) used by the Indian Army.
4. **Estimated Range of Nag Mk-2 missile:** 7 to 10 kilometres.
   a. It is a significant improvement over Nag Mark 1, which has a 4-kilometre range.

Key features:

1. **Third-Generation Fire-and-Forget Technology**: Enables precision targeting with minimal operator intervention post-launch.
2. **Versatile Performance:** Capable of neutralising modern armoured vehicles, equipped with explosive reactive armour (ERA).
3. **High-explosive anti tank (HEAT) warhead:** The missile has a tandem HEAT warhead for increased destructive power.
4. **Platform Compatibility:** Successfully integrated with Nag Missile Carrier (NAMICA), enhancing battlefield mobility and deployment flexibility.

Significance:

1. Underscored India's growing capabilities in **anti-tank warfare** and enhances Indian Army's ability to **counter evolving armour threats.**
2. Reaffirms India's commitment to achieving **self-reliance in defence manufacturing.**

5. India & U.S. to Jointly Manufacture Sonobuoys for Indian Navy

1. India and the U.S. have announced a significant cooperation aimed at co-producing **Sonobuoys** for the **Indian Navy** to enhance undersea domain awareness (UDA).

Click Here for INDEX

2. This collaboration will contribute to India's capabilities in detecting and tracking submarines, especially in deep seas and oceans.

Key Developments:

1. **Co-production of Sonobuoys**:
   a. The **U.S. based Ultra Maritime** and **Bharat Dynamics Ltd (BDL)**, an Indian defence PSU, will jointly manufacture sonobuoys for the Indian Navy.
   b. This partnership will involve a **transfer of technology** from Ultra Maritime to BDL.
   c. A dedicated production facility for these sonobuoys will be set up in **Visakhapatnam**, with plans for operational commencement by **2027**.
2. **Integration with Indian Navy**: The Indian Navy currently operates **12 P-8I maritime patrol aircraft**, which will deploy these sonobuoys during **anti-submarine warfare** missions.
3. **Objective**: The project aims to boost India's ability to **track underwater threats**—particularly **submarines**—and enhance overall **undersea domain awareness**.

What are Sonobuoys?

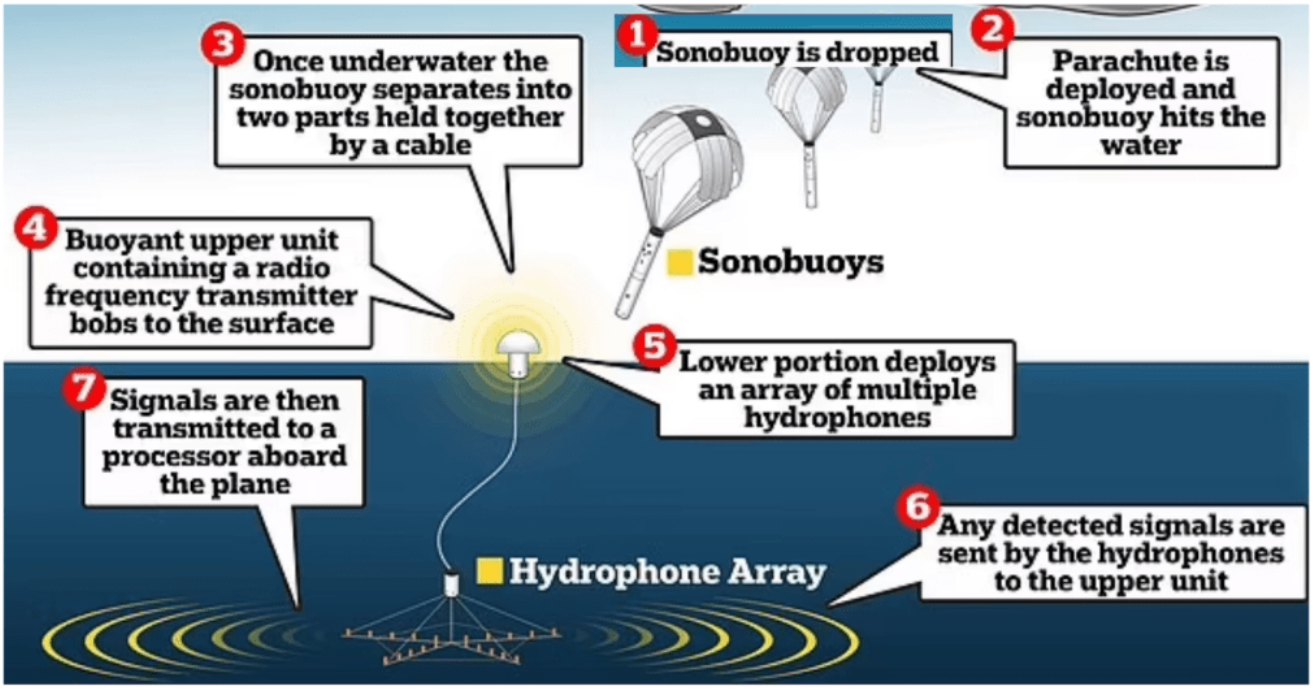
Sonobuoys are **electro-mechanical acoustic sensors** designed to detect and relay underwater sounds emitted by submarines and ships. They are **expendable** and typically remain active for about **24 hours**. They help in detecting, classifying, and tracking underwater targets.

Working Mechanism:

1. Sonobuoys are typically dropped from a **naval aircraft** (helicopter or fixed-wing) into the sea, where they automatically deploy upon impact.
2. Once deployed, they communicate via a **radio transmitter** with the ship or aircraft that deployed them.
3. The sensors then descend to a predetermined depth, collecting and transmitting **acoustic information** back to the monitoring team, helping pinpoint the location of submarines.

Types of Sonobuoys:

1. **Active Sonobuoys**: These emit sound pulses and analyze the echo to identify objects underwater, transmitting this data back to the aircraft.
2. **Passive Sonobuoys**: These only listen to sounds generated by submarines or ships and send this data to the aircraft.



About P-8I Maritime Aircraft

The **P-8 Poseidon** is a **maritime patrol and reconnaissance** aircraft developed by **Boeing Defense** in the U.S. The **P-8I** is a specialized variant tailored for the **Indian Navy**, and it plays a key role in:

1. **Coastal patrolling** and **maritime surveillance**.
2. **Anti-submarine warfare** and **anti-surface warfare** operations.
3. Supporting **search-and-rescue** and **anti-piracy** missions.

These aircraft are equipped with the necessary systems to launch and track sonobuoys, providing critical support in underwater surveillance.

Significance of This Development

1. The co-production of **Sonobuoys** aligns with **India's 'Make in India' initiative**, ensuring the use of cutting-edge technology while strengthening domestic manufacturing capabilities.
2. It will significantly enhance India's ability to monitor and track submarines, improving its naval defense capabilities and contributing to maritime security in the region.

6. INTERPOL and India's Role in International Police Cooperation

1. **INTERPOL** recently issued its first Silver Notice as part of a 52-country pilot program, which includes India.
2. This is accompanied by the launch of the **BHARATPOL portal** by India's Ministry of Home Affairs, designed to streamline cooperation between Indian law enforcement and INTERPOL.

About the BHARATPOL Portal

1. **BHARATPOL** is an online portal developed by the **Central Bureau of Investigation (CBI)** to facilitate seamless international police cooperation.
2. This portal enables Indian police agencies, at both the central and state levels, to quickly connect with INTERPOL, significantly expediting investigations.
3. The portal includes 5 key modules:
   i. **Connect**: This allows Indian law enforcement agencies to function as an extension of INTERPOL's **National Central Bureau (NCB)** in New Delhi.
   ii. **INTERPOL Notices**: This module enables the swift, secure transmission of requests for INTERPOL notices, aiding in locating criminals both within India and globally.
   iii. **References**: It provides access to INTERPOL references from 196 countries, simplifying the process of requesting international assistance for investigations.
   iv. **Broadcast**: This module ensures that requests for assistance from 195 countries are instantly available to Indian authorities.
   v. **Resources**: It facilitates the exchange of documents and capacity-building initiatives between Indian agencies and INTERPOL.

Significance of BHARATPOL

1. **Technology Platform:** Supports all law enforcement agencies by improving their efficiency and effectiveness
2. **Real-time Interface:** Enables seamless communication among agencies to enhance crime control measures
3. **Expedited Response:** Faster responses to domestic and interna-tional requests for real-time data sharing
4. **INTERPOL Database Access:** Access to 19 types of databases for data analysis and crime prevention strategies

About INTERPOL

1. INTERPOL, the **International Criminal Police Organization**, was founded in 1923 as the **International Criminal Police Commission (ICPC)**. It was renamed INTERPOL in 1956 after adopting its constitution. The organization currently has **196 member countries**, including India, which is a founding member.
2. **Headquarters**: Lyon, France
   National Central Bureau (NCB): Each member country establishes an NCB, which acts as the point of contact for INTERPOL affairs. In India, the **CBI** serves as the NCB.

Click Here for INDEX

Click Here for INDEX

Key Bodies and Functions of INTERPOL

INTERPOL is governed by two main bodies:

1. **General Assembly (GA)**: The supreme governing body, meeting annually, with representatives from all member countries.
2. **Executive Committee**: A 13-member body, which supervises the implementation of decisions made by the GA. It meets three times a year.

INTERPOL's **colour-coded notices** are international alerts that help member countries share critical crime-related information, assisting in cross-border law enforcement efforts.

India's Role in INTERPOL

1. India, through the **CBI** as the National Central Bureau (NCB), plays a pivotal role in connecting Indian law enforcement with INTERPOL.
2. The **INTERPOL Liaison Officers (ILOs)**, appointed by CBI, work closely with Indian police at all levels to ensure effective communication and coordination for international operations.
3. Additionally, the **Global Operations Centre (GOC)** at the CBI in New Delhi provides 24x7 assistance for international law enforcement, ensuring quick responses to requests for references and cooperation.
4. India also hosted the **INTERPOL Young Global Police Leaders Programme 2023**, which trained young police leaders from across the world, fostering international cooperation and enhancing global law enforcement capabilities.

Need for International Police Cooperation

1. **Transnational crimes** like money laundering, human trafficking, and cybercrime often cross national borders, requiring coordinated efforts.
   - **For example**, INTERPOL's **Operation HAECHI** strengthened international cooperation to combat cyber-enabled financial crimes, while **Operation Serengeti** resulted in the arrest of over 1,000 cybercriminals across 19 African countries.
2. Emerging threats, such as **cybercrime**, **radicalization**, and **terrorism**, exploit legal gaps across borders, making **counter-terrorism** efforts and intelligence sharing essential.
   - **For instance**, **Operation FLASH-WEKA** dismantled organized crime networks behind human trafficking in Africa, with the cooperation of 54 countries.

Challenges in International Police Cooperation

While international cooperation is essential, there are several challenges that hinder its effectiveness:

1. **Legal and Procedural Differences**: Variations in national laws and legal frameworks can complicate investigations and evidence collection.
2. **Cultural Barriers**: Language issues and cultural differences can slow down communication and hinder collaboration.
3. **Resource Limitations**: Disparities in technological capabilities among countries can create obstacles to information sharing and joint operations.
4. **Political Barriers**: Political tensions or differing national interests can sometimes hinder comprehensive cooperation.

Despite challenges such as legal discrepancies and resource limitations, continuous collaboration, technological advancements, and diplomatic efforts can strengthen

global policing. As crimes evolve and become increasingly transnational, **international police cooperation** will be crucial to maintaining global security and upholding justice. INTERPOL, through initiatives like the **BHARATPOL portal** and its ongoing international operations, is playing a key role in fostering this cooperation.

7. Ministry of Defense Declares 2025 as 'Year of Reforms'

1. In a significant move to modernize the Armed Forces, the Ministry of Defense has declared **2025 as the 'Year of Reforms'**.
2. This initiative aims to transform India's military into a technologically advanced, combat-ready force capable of conducting **multi-domain integrated operations**.
3. It is part of a broader strategy to accelerate ongoing and future reforms.

Key Areas of Focus for Reform:

1. **Integrated Theatre Commands (ITCs)**:
   a. The establishment of **ITCs** is a key initiative aimed at enhancing **jointness and integration** among the three armed services — Army, Navy, and Air Force.
   b. ITCs will serve as tri-service commands, ensuring better coordination and efficiency in addressing security challenges within specific geographic regions.
2. **Adoption of Emerging Technologies**:
   a. The focus will be on developing capabilities in new technological domains such as **Cyber**, **Space**, **Artificial Intelligence (AI)**, **Machine Learning (ML)**, and **Hypersonics**.
   b. These technologies are critical to making India's defense forces ready for future warfare.
3. **Technology Transfer and Knowledge Sharing**:
   a. Efforts will be made to streamline **technology transfer** and promote **knowledge sharing**, making it easier for businesses to engage in defense-related projects.
   b. Public-Private Partnerships (PPPs) and a **business-friendly environment** will further accelerate innovation and growth in the sector.
4. **Collaboration Across Services**:
   a. A key goal is to break down **organizational silos** and promote greater **civil-military coordination**.
   b. This will involve increasing **inter-service cooperation**, conducting joint training programs, and developing joint operational capabilities to ensure all branches work seamlessly together.
5. **Defense Exports and Research & Development (R&D)**:
   a. The Indian defense sector will be positioned as a **credible exporter** of defense products.
   b. A stronger focus will be placed on **R&D** and fostering international **partnerships**, which will help in enhancing India's role in the global defense market.

Defense Modernization Initiatives

1. **Private and MSME Participation**: The **iDEX** (Innovations for Defence Excellence) scheme and the **SRIJAN** portal have been introduced to promote **indigenization** by encouraging private sector and MSME involvement in defense manufacturing and innovation.
2. **Liberalized FDI Policy**: The **FDI policy** in defense has been liberalized, allowing for up to **74% Foreign Direct Investment (FDI)** through the **automatic route** and **100% FDI** through the **government route**. This will allow for easier access to advanced technologies and foster greater foreign collaboration in the defense sector.

8. Pig-Butchering Scam

Union Ministry of Home Affairs in its **annual report of 2023-24** highlighted the new cyber fraud known as the **"pig butchering scam"** or **"investment scam".**

About Pig-Butchering scam

1. It is a global phenomenon and involves **large-scale money laundering** and **even cyber slavery**.
2. It is a **type of confidence and investment fraud** in which the victim is gradually lured into making increasing **monetary contributions to a seemingly sound investment** before the scammer disappears with the contributed monies.
3. **Scammers target** mostly unemployed youths, housewives, students, etc.

Click Here for INDEX

9. Exercises/ Operations in News

Name	Type	Participants	Brief Description
Surya Kiran	Battalion level Bilateral Military Exercise	India-Nepal	• **Edition:** 18th **Conducted at:** Saljhandi, Nepal from 31st December 2024 to 13th January 2025. • **Participated by:** 11th Gorkha Rifles from India. • It is an annual training event conducted alternatively in the two countries. • **Aim:** Focus on jungle warfare, counter-terrorism in mountains, and humanitarian assistance under UN Charter.
Devil Strike	Joint Military Exercise	Indian Army, Indian Air Force, and Special Forces	· **Held:** Between January 16-19, 2025. · **Conducted at:** northern borders of India. · **Key Objectives:** o Focus on combat readiness and high-altitude warfare. o Includes complex airborne operations and logistics sustainment in hostile terrain. o Integrates advanced technologies for precision troop deployment.
La Perouse 2025	Multinational Naval Exercise	9 nations (India, Australia, France, UK, USA, Indonesia, Malaysia, Singapore and Canada)	• **Edition**: 4th • **Hosted by**: France**Participated by**: INS Mumbai of Indian Navy • **Key Objectives:** o Focus on maritime surveillance, interdiction operations, and air operations. o Includes advanced multi-domain exercises like surface warfare, anti-air warfare, air defence, and tactical manoeuvres. o Enhances tactical interoperability and maritime cooperation among partner navies. • **Similar multinational exercises:** Malabar (India-US-Japan-Australia multilateral Naval exercise), Varuna (India-France Bilateral Naval Exercise), and RIMPAC (world's largest naval exercise). • **Bilateral Exercises Between India and France** o Shakti (Military) o Varuna (Naval) o Garuda (Air)

D. ECONOMY

Click Here for INDEX

1. Internationalisation of Rupees

Recently, the **Reserve Bank of India (RBI) liberalize FEMA (Foreign Exchange Management Act) regulations, 1999** to promote the use of the **Indian Rupee (INR)** in **cross-border transactions**. This move is aimed at **increasing the international usage of the INR**, a process known as the **Internationalization of the Rupee**.

Foreign Exchange Management Act (FEMA), 1999

The **Foreign Exchange Management Act (FEMA)**, which came into effect on **June 1, 2000**, replaced the **Foreign Exchange Regulation Act (FERA)** of 1973. FEMA facilitates external trade and payments while promoting the orderly development of India's foreign exchange market.

Key Features of FEMA:

1. **Current and Capital Account Transactions:** FEMA distinguishes between transactions in the **current account** (like trade in goods and services) and **capital account** (like foreign investments and loans).
2. **Liberalization:** Unlike FERA, which had strict controls and criminal penalties, FEMA is more liberal and regulatory in nature.
3. **Role of RBI and the Government:** The **RBI** supervises foreign exchange transactions, while the government controls policy decisions.

Recent Changes in FEMA Regulations by RBI

1. **Opening INR Accounts Abroad:** Individuals residing outside India can now open **INR accounts** in the overseas branches of **Authorized Dealer banks**. These accounts can be used to settle both current and capital account transactions with Indian residents.
2. **Settling Transactions with Other Countries:** People abroad can settle transactions with other foreign residents using balances in repatriable INR accounts like:
   - **Special Non-Resident Rupee (SNRR) account**
   - **Special Rupee Vostro Account (SVRAs)**
3. **Business Interests in India:**
   - Any foreign resident with business interests in India can open an **SNRR account** to conduct genuine rupee-based transactions.
   - They can also use balances in these accounts for foreign investment in India.
4. **Exporters and Foreign Currency Accounts:**
   - o Indian exporters can open accounts in any foreign currency overseas to settle trade transactions, including receiving export proceeds and using them for imports.

Difference between Vostro and Nostro Account

Vostro Account	Nostro Account
1. It refers to a **foreign bank's account held in a domestic bank** in the local currency. a. E.g., if a US bank (Citibank) holds an account in an Indian bank (SBI) in INR, it is SBI's Vostro account. 2. Allows foreign banks to operate in another country and **facilitate transactions**.	1. It refers to a **domestic bank's account held in a foreign bank** in the currency of the overseas country. **a.** E.g., if an Indian bank (SBI) holds an account in a US bank (Citibank) in **USD**, it is SBI's Nostro account. 2. Nostro accounts **simplify the process of exchanging and trading in foreign currencies**.

What is Internationalization of the Rupee?

The **internationalization of the Rupee** refers to the **process of increasing the use of INR** in global trade and financial transactions. This includes:

1. **Promoting INR use** in import and export trade.
2. **Extending the use** of INR for other current account transactions.
3. Eventually allowing INR usage in **capital account transactions** as well.

Click Here for INDEX

Did you know?

The Indian rupee was the legal tender in several Gulf countries, including **Kuwait, Bahrain, Qatar, and the UAE**, until the early 1970s. This currency, known as the **Gulf Rupee** or **External Rupee**, had the same value as the Indian Rupee.

Benefits of Internationalization of Rupee

1. **Reduces Vulnerability**: Reducing dependence on foreign currencies (particularly dollar), it will shield the economy from sudden **exchange rate fluctuations, currency crises, and inflationary pressures.**
2. **Limits Exchange Rate Risks:** Protection from currency volatility not only **reduces the cost of doing business**, it also enables better **growth of business**, improving the chances for **Indian businesses to grow globally**.
3. **Reduces Requirement of Forex Reserves**: It reduces the requirement to maintain and depend on large foreign exchange reserves in convertible currencies to manage external vulnerabilities.
4. **Deficit Financing:** A globally accepted INR allows the Indian government to issue **debt in its own currency** to international investors, making it easier to **manage fiscal deficits without exchange rate risks**.
5. **Strengthening India's Financial Markets:** Greater global demand for INR increases **foreign participation in Indian financial markets**, such as bonds and equity **bringing in long-term investments**.

What is International Currency?

International Currency refers to a currency that is used and held beyond the borders of the issuing country, not just by its residents but also by non-residents. Examples of international currencies include the **US Dollar** (USD), **Euro** (EUR), and others.

Determinants of Internationalization of Currency

The internationalization of a currency depends on several key factors:

1. **Widely Used:** For a currency to become international, it must be **commonly utilized in global transactions**. This means it is accepted for trade, investment, and financial activities across multiple countries.
2. **Economic Fundamentals:** The **size of the economy** and its **trade network** play a crucial role in the internationalization of a currency. A large and globally integrated economy is more likely to see its currency used internationally.
3. **3. Stability:** A currency should be **stable** and **easily convertible**. Stability in its value and low volatility make it attractive for international trade and investment, as it reduces the risks associated with currency fluctuations.

Challenges in the Internationalization of the Indian Rupee

1. **Exchange Rate Volatility:** One of the key challenges in the internationalization of the Indian Rupee is the **volatility of its exchange rate**.
   - In the early stages of INR internationalization, fluctuations in its value could increase, as foreign demand for the currency may not stabilize immediately.
2. **Monetary Policy Dilemma (Triffin Dilemma):** The **Triffin Dilemma** presents a critical issue when a country tries to balance the **domestic monetary needs** with the **global demand** for its currency.
   - A country may face a situation where maintaining a large supply of currency to meet global needs might undermine its domestic monetary policy, leading to inflation and other economic concerns.
3. **Restricted Convertibility:** While the Indian Rupee (INR) is fully convertible in the **current account**, it remains **partially convertible in the capital account**.
   - This limited convertibility restricts INR's appeal in international markets, making it difficult for it to become a preferred currency for global transactions.
4. **Vulnerability to External Shocks:** Given the open nature of India's financial system, with free flow of funds into and out of the country, the INR becomes susceptible to **external shocks**.
   - These shocks can lead to higher volatility in the financial markets, posing a risk to the currency's stability.
5. **Limited Global Usage:** Compared to dominant global currencies like the **USD**, **EUR**, and **JPY**, the INR is not widely used in international trade.

- Furthermore, it lacks deep liquidity in the international foreign exchange markets, restricting large-scale transactions and limiting its acceptance on a global scale.

Steps Taken for the Internationalization of the Indian Rupee

Despite the challenges, India has been actively working towards making the INR more internationally recognized. Several initiatives and strategies have been implemented to promote its global usage.

1. **Internationalization of Indian Payment Infrastructure:** India has made significant strides in adopting modern payment systems, such as **Unified Payments Interface (UPI)**, which has been adopted in countries like **Singapore, France, UAE, Sri Lanka, Bhutan, Mauritius**, and **Nepal**.
2. **Memoranda of Understanding (MoU) for Cross-Border Transactions:** The Reserve Bank of India (RBI) has signed **MoUs** with central banks of various countries, including **the UAE, Indonesia**, and **Maldives**, to encourage cross-border transactions using local currencies, including the INR.
3. **RBI's Strategic Action Plan for 2024-25:** The RBI has unveiled a **Strategic Action Plan** in its Annual Report for 2023-24. The plan includes several measures aimed at facilitating the internationalization of the INR:
   a. **Opening INR Accounts Abroad:** Allowing foreign residents to open INR-denominated accounts.
   b. **Extending INR-Denominated Loans:** Enabling the extension of INR loans to residents outside India (PROI).
   c. **Implementation of the SPECTRA Project:** A software platform for reporting and approving External Commercial Borrowings (ECBs) and trade credits.
4. **Special Vostro Rupee Accounts (SVRAs):** The RBI has introduced **Special Vostro Rupee Accounts (SVRAs)**, allowing banks to settle trade with 22 countries using the INR, thereby facilitating INR trade settlement.
5. **Other Initiatives:**
   a. **Bilateral Currency Swap Agreements**
   b. **INR as a Designated Foreign Currency in Sri Lanka**
   c. **Issuance of Masala Bonds** (Rupee-denominated bonds) to attract foreign investors

Click Here for INDEX

Way Forward: Recommendations from the Inter-Departmental Group of RBI

Looking ahead, the **Inter-Departmental Group** within the RBI has proposed further actions to advance the internationalization of the INR. Here are some of the key recommendations:

1. **Strengthening Indian Payment Systems:** India should enhance the global adoption of its payment systems such as **Real-Time Gross Settlement (RTGS)**, **National Electronic Funds Transfer (NEFT)**, and **UPI**, which will make cross-border payments smoother and more accessible.
2. **Inclusion of INR in the Continuous Linked Settlement (CLS):** The **CLS system**, which settles foreign currency transactions on a Payment vs Payment (PvP) basis, currently operates for 18 currencies. Including the INR in this system would increase its global usage and improve settlement efficiency.
3. **Currency Swaps and Local Currency Settlement (LCS):** Currency swap agreements can help stabilize local currencies, protect businesses from currency risks, and reduce transaction costs, making INR a more attractive currency for cross-border transactions.
4. **Efforts to Include INR in the Special Drawing Rights (SDR) Basket:** The **SDR** is an international reserve asset created by the **IMF**. Currently, the SDR basket includes five major currencies: the **U.S. dollar**, **Euro**, **Japanese yen**, **Chinese renminbi**, and **British pound**. Including the INR in the SDR basket would elevate its status in the global financial system.
5. **Strengthening Financial Markets:** India must enhance access for foreign investors to INR-based assets by harmonizing **KYC norms** between the **RBI** and **SEBI**. Additionally, developing a **24x5 INR market** and including **Indian government bonds** in global bond indices will help attract global investments, stabilize INR flows, and reduce borrowing costs.

Click Here for INDEX

2. CBDCs: From U.S. Executive Order to India's Digital Rupee

On January 25, 2025, U.S. President **Donald Trump** signed an executive order effectively banning the creation of a **Central Bank Digital Currency (CBDC)**, commonly referred to as a **digital dollar**. This order highlights the increasing attention and debate surrounding the future of digital currencies.

What is Digital Currency?

Digital currency refers to money that is exclusively available in **digital or electronic form** and is typically managed and exchanged through **digital computer systems** connected to the **Internet**.

Types of Digital Currencies

Digital currencies can be categorized into three primary types:

Type of Digital Currency	Example	Control	Method of Transaction
Cryptocurrency	Bitcoin	Decentralized	Secured using cryptographic methods and blockchain technology.
Central Bank Digital Currencies (CBDCs)	Digital Rupee (e₹)	Centralized by the Central Bank	Digital form of fiat currency issued by central banks, maintaining the reliability of traditional currencies.
Stablecoins	Tether (USDT)	Centralized or hybrid	Backed by assets or algorithms to ensure a stable value, often pegged to traditional currencies.

What is a CBDC?

A **Central Bank Digital Currency (CBDC)** is a **digital form of fiat currency** issued and regulated by a **central bank**. Unlike cryptocurrencies, which are decentralized, CBDCs are **centralized** and have the backing of the country's central bank.

- It is a **legal tender** and a central bank liability in digital form, denominated in sovereign currency and appears on the central bank's balance sheet.

Do you know?

Sand Dollar: Bahamas became the first country to launch CBDC in 2020.

DCash: Eastern Caribbean Currency Union launched its digital currency and become the first currency union to embrace blockchain-based CBDC.

Types of CBDCs

CBDCs can be broadly classified into two categories:

1. **Wholesale CBDCs**: Used among **banks** and licensed financial institutions for **interbank payments** and **securities transactions**.
2. **Retail CBDCs:**
   a. Available to the **general public** through **digital wallets**, smartphone apps, etc.
   b. **Two Models:**
      i. **Token-based CBDCs:** Enable anonymous transactions using private/public key authentication.
      ii. **Account-based CBDCs:** Require digital identification for account access (e.g., **DCash** of Eastern Caribbean).

India's Digital Rupee (e₹)

India's **Digital Rupee (e₹)** is a **digital form of fiat currency** issued and regulated by the **Reserve Bank of India (RBI)**. Key points include:

1. **Current Status:** In **pilot mode** with **15 banks** since **December 2022**.
2. **Legal Tender:** It is **legal tender** and a liability of the RBI, as per **Section 26 of the Reserve Bank of India Act, 1934**.
3. **Denominations:** Available in the same denominations as physical currency.

Potential Benefits of CBDCs

1. **Financial Inclusion:** Provides access to digital payment services, especially for **unbanked** or **underbanked** populations.
2. **Reduced Transaction Costs:** Eliminates intermediaries (like commercial banks), reducing transaction fees.

3. **Reduced Dependence on Cash:** Helps reduce costs related to printing and managing physical currency.
4. **Better Tracking of Transactions:** Digital ledgers can track transactions, reducing issues like **corruption**, **tax evasion**, and **illicit activities**.
5. **Improved Monetary Policy:** Enables faster distribution of **stimulus funds** or other economic measures.
6. **Cross-Border Efficiency:** Simplifies **international trade payments** by reducing reliance on intermediaries like **SWIFT**.
7. **Programmable Payments:** Transactions can be programmed with specific conditions (e.g., spending restrictions or expiry dates).

Challenges with CBDCs

While CBDCs offer numerous advantages, they also present several challenges:

1. **Cybersecurity Risks:** Vulnerable to **cyberattacks**, **hacking**, and **data breaches**, potentially affecting **financial stability**.
2. **Privacy Concerns:** The need for **transaction tracking** and **identity verification** raises significant **data protection** issues.
3. **Digital Divide:** The complexity of **CBDC technology** and the need for **digital literacy** may widen the gap between **tech-savvy** populations and those with limited access to technology.
4. **International Regulatory Challenges:**
   a. Different **blockchain standards** and **Distributed Ledger Technologies (DLT)** across countries may hinder cross-border CBDC use.
   b. **Coordination** between countries is necessary to prevent **money laundering**, **financial crimes**, and **regulatory arbitrage**.
5. **Threat to Monetary Sovereignty:** If people prefer foreign **CBDCs** (e.g., **Digital Dollar** or **Digital Yuan**), it may weaken the local **monetary system**.

Way Forward: Solutions for CBDC Adoption

To effectively implement and integrate CBDCs, the following steps should be considered:

1. **Balancing Privacy and Transparency:** Use technologies like **Zero-Knowledge Proofs (ZKPs)**, which allow for the verification of transactions without revealing sensitive data. This ensures **user privacy** while enabling necessary **regulatory oversight**.
2. **Integration with Monetary and Fiscal Policies:** CBDCs can play a crucial role in **Direct Benefit Transfers (DBTs)**, **subsidies**, and **social security payments** to improve economic efficiency.
3. **Regulatory and Legal Frameworks:**
   a. Governments need to establish clear legal and regulatory frameworks for CBDCs, defining their **status**, **liabilities**, and **consumer rights**.
   b. **Regulatory sandboxes** should be developed to test CBDC policies before a full national rollout.
4. **Cross-Border Collaboration and Standardization:** International financial institutions (like **IMF** and **BIS**) should collaborate to create **global standards** for CBDC interoperability and regulation.

3. India Secures 14.3% of Global Remittances in 2024

According to the World Bank, **India secured 14.3% of Global Remittances in 2024, highest share ever.**

- Remittances are **financial transfers made by individuals working abroad** to support their families in their home country.

Remittance Trends in 2024

1. **Top five recipients in 2024:** India at $129 billion (Compared to $125 billion in 2023), Mexico, China, Philippines, and Pakistan, driven by recovery in job markets in high-income countries of OECD.
2. Remittances to **Low- and Middle-Income Countries** are projected to surge to **$685 billion in 2024**, with **5.8% growth rate**.
3. **China's** share of global remittances **dropped to 5.3% in 2024, its lowest share in two decades,** due to reduced **low-skilled emigration** stemming from its rising economic prosperity and aging population.

Factors Contributing to High Remittances in India

1. **Large Diaspora Population:** India is home to one of the largest diaspora populations in the world, with over **18 million Indians** living abroad as of 2023 (according to the **UN World Migration Report 2024**).

Click Here for INDEX

2. **Shifts in Migration Destinations:** Increasingly, Indian migrants are moving to **high-income countries** like the **United States**, **United Kingdom**, and **Australia**.
3. **Diverse Labor Force:** Indian migrants are diverse in skill sets, ranging from **highly skilled professionals** (such as IT and healthcare workers) to **semi-skilled and unskilled laborers**.

Significance of High Remittances for India

1. **For Recipient Households:** Remittances play a crucial role in supporting household expenses, including **food, healthcare**, and **education**, directly improving the living standards of recipients.
2. **For the National Economy:** Remittances are a significant source of **foreign exchange** for India, reducing reliance on **foreign aid**. They help **fund current account deficits** and fill fiscal shortfalls, thus contributing to **macroeconomic stability**.

4. 5 New Indian Industrial Clusters Join WEF Initiative

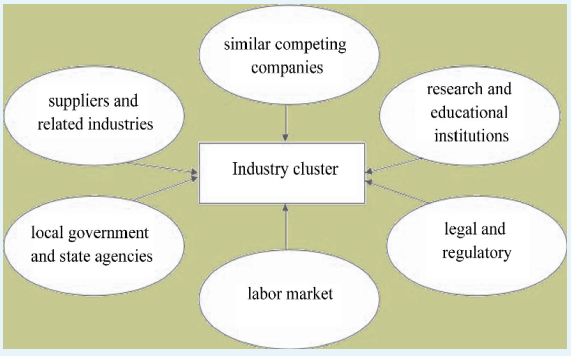
1. **In January 2025, during the World Economic Forum (WEF)** Annual Meeting in **Davos**, **5 new industrial clusters** from India joined the **Transitioning Industrial Clusters Initiative**.
2. This initiative, **launched at the COP26 climate summit in 2021**, aims to drive economic growth, job creation, and reduction in **greenhouse gas (GHG) emissions** through collaboration between industries and public institutions.

India, the world's fastest-growing major economy, added 5 new clusters:

1. **Gopalpur Industrial Park (Odisha):** This cluster is **strategically positioned to attract investments** in green energy and innovative technologies. Its focus is on becoming a hub for sustainable industries.
2. **Kakinada Cluster (Andhra Pradesh):** This cluster aims to **advance industrial decarbonization**, particularly in areas like green ammonia, hydrogen, and sustainable aviation fuel.
3. **Kerala Green Hydrogen Valley (Kerala):** Focused on **scaling hydrogen-powered transportation**, this cluster plays a pivotal role in India's decarbonization strategy.
4. **Mundra Cluster (Gujarat):** This cluster is working on **integrating green power initiatives with industrial infrastructure**, supporting large-scale projects that align with sustainability goals.
5. **Mumbai Green Hydrogen Cluster (Maharashtra):** Leading the charge in the **green hydrogen economy**, this cluster connects industries with sustainable energy sources, further promoting green energy adoption.

What are industrial clusters ?

1. A **cluster** is a **group of businesses and organizations that are located near each other and work together in the same industry or sector.**
   a. **In simple terms:** It's a group of businesses in the same field, all located together, making them stronger and more successful.



2. They share resources, knowledge, and infrastructure, which helps them grow and improve.
3. **For example,** in the case of the **Transitioning Industrial Clusters Initiative**, **an industrial cluster could include factories, research centers, and energy companies in one area**, all focused on producing clean energy or reducing emissions.
4. By being close to each other, they can collaborate more easily, share ideas, and work together to improve their industries.
   Examples: Silicon Valley: Famous for its tech companies.

Key Highlights:

1. **Global Expansion of the Initiative**: The **initiative now includes 33 industrial clusters from 16 countries,** across 5 continents.
2. **Significant Contributions**:
   - Collectively, **these clusters are expected to reduce 832 million tonnes of CO2-equivalent emissions** annually, equivalent to the total emissions of Saudi Arabia.

- The initiative contributes **USD 492 billion** to global GDP and supports **4.3 million jobs**.

3. **Focus on Clean Energy**: A **report developed with Accenture and EPRI** emphasizes how **industrial clusters can advance clean energy infrastructure** by leveraging innovative business models, including digital technologies.

International Expansions:

1. **New Clusters Worldwide**: includes clusters in:
   a. **Asia-Pacific**: Thailand (Saraburi province), Australia.
   b. **Europe**: Rotterdam, Gothenburg, and the Solent Cluster.
   c. **South America**: Ports of Açu (Brazil) and Cartagena Industrial Cluster (Colombia).
   d. **Middle East**: Jubail Industrial City (Saudi Arabia), the first Middle Eastern member.

Initiative Goals:

1. **Economic Growth & Job Creation**: The initiative supports sustainable economic development and job creation in industrial sectors.
2. **Decarbonization**: A major focus is on reducing carbon emissions through collaborative efforts in clean energy deployment.
3. **Collaboration & Vision**: The initiative encourages greater collaboration between co-located companies, institutions, and industries to achieve shared environmental and economic goals.

World Economic Forum:

1. **The World Economic Forum is the International Organization for Public-Private Cooperation.**
2. **Established in 1971 as a not-for-profit foundation**, it is independent, impartial and upholding the highest standards of governance and moral and intellectual integrity.
3. **It provides a global, impartial and not-for-profit platform for meaningful connection between stakeholders to establish trust, and build initiatives for cooperation and progress.**
4. In a world marked by complex challenges, the **World Economic Forum engages political, business, academic, civil society and other leaders of society to shape global**, regional and industry agendas.

5. Logistics Ease Across Different States (LEADS) 2024 Report

1. In January 2025, **Ministry of Commerce and Industry** released the **Logistics Ease Across Different States (LEADS) 2024 Report** (6th edition) which aims to evaluate and improve the logistics performance of Indian states and UTs.
2. The report is coupled with the **"Logistics Excellence, Advancement, and Performance Shield (LEAPS) 2024" awards**.
   a. It highlights the pivotal role of logistics in driving India's economic growth and achieving its vision of becoming a **$32 trillion economy by 2047**.

What is LEADS?

1. The LEADS initiative, started in 2018 by the **Department for Promotion of Industry and Internal Trade (DPIIT)** under the **Ministry of Commerce and Industry**, provides actionable insights to improve logistics efficiency.
2. Inspired by the **World Bank's Logistics Performance Index (LPI)**, LEADS integrates both perception-based surveys and objective indicators for a comprehensive evaluation.
3. **Objectives:**
   a. Assess logistics infrastructure and services across states and UTs.
   b. Promote competitive federalism to enhance logistics efficiency.
   c. Provide actionable recommendations for reforms.
4. **Evaluation Pillars:**
   a. **Logistics Infrastructure**
   b. **Logistics Services**
   c. **Operating and Regulatory Environment**
   d. **Sustainable Logistics** (introduced in 2024)

What is LEADS 2024 Methodology?

1. The 6th edition of LEADS incorporated **enhanced objectivity** through metrics like **terminal accessibility and road corridor speeds**.
2. The evaluation process included over 7,300 responses and consultations with 750+ stakeholders, providing a holistic perspective on logistics performance across regions.

Click Here for INDEX

Key highlights of LEADS 2024

States and UTs were categorized into **4 groups**: **Coastal, Landlocked, North-Eastern,** and **Union Territories**. They were further ranked as **Achievers, Fast Movers,** or **Aspirers** based on performance.

Area	Achievers	Fast Movers	Aspirers
Coastal States	Gujarat, Karnataka, Maharashtra, Odisha, Tamil Nadu	Andhra Pradesh, Goa	Kerala, West Bengal
Landlocked States	Haryana, Telangana, Uttar Pradesh, Uttarakhand	Bihar, Himachal Pradesh, Madhya Pradesh, Punjab, Rajasthan	Chhattisgarh, Jharkhand
North-Eastern States	Assam, Arunachal Pradesh	Meghalaya, Mizoram, Nagaland, Sikkim, Tripura	Manipur
Union Territories	Chandigarh, Delhi	Dadra and Nagar Haveli & Daman and Diu, Jammu and Kashmir, Lakshadweep, Puducherry	Andaman and Nicobar Islands, Ladakh

What is LEAD Framework?

Ministry has urged logistics sector to adopt following **LEAD framework** to transform the logistics sector:

1. **Longevity:** Sustainable growth and operations.
2. **Efficiency and Effectiveness:** Cost-effective and impactful processes.
3. **Accessibility and Accountability:** Inclusive access and transparent practices.
4. **Digitalisation:** Leveraging AI, Machine Learning, and Data Analytics for process optimization.

Key Recommendations and Initiatives

1. **Regional and City-Level Logistics Plans:** Focus on last-mile connectivity.
2. **Green Logistics:** Promote sustainable transport practices.
3. **Public-Private Partnerships (PPPs):** Enhance multi-modal logistics hubs and transparent land allocation.
4. **Gender Inclusivity:** Encourage women's participation in logistics.
5. **Skill Development:** Launch of **PM GatiShakti Course** to enhance workforce capabilities.

Logistics Cost Framework

1. The **National Council of Applied Economic Research (NCAER)** introduced a new Logistics Cost Framework, integrating EXIM and domestic cargo data.
2. This initiative, guided by NITI Aayog and other stakeholders, aims to provide accurate cost estimates, aiding India's economic aspirations.

6. CII's 7-Point Agenda for Employment Generation

1. In January 2025, the **Confederation of Indian Industry (CII)** has proposed a **7-point agenda to address** the pressing issue of **unemployment in India** ahead of the upcoming **Union Budget 2025-26.**
2. With India's large and youthful population, effective strategies are essential to create jobs, leverage the demographic dividend, and promote inclusive growth.

What is Meant by Unemployment?

1. Unemployment refers to a situation where individuals who are willing and able to work at prevailing wage rates cannot find suitable employment.
2. The **Periodic Labour Force Survey (PLFS)**, conducted by the **Ministry of Statistics and Programme Implementation (MoSPI)**, defines unemployment based on three key criteria:
   a. **Activity Status**: Individuals are considered unemployed if they are not engaged in any economic activity during the reference period.
   b. **Job Search**: They should have been actively seeking work.
   c. **Willingness to Work**: They should be willing to accept employment if offered.

Types of Unemployment

Type	Description
Structural Unemployment	• Arises when there is a mismatch between the skills of job seekers and the requirements of available jobs. • Often occurs due to technological advancements or changes in industry demands.
Cyclical Unemployment	• Caused by economic downturns or recessions when businesses reduce hiring. • Employment levels typically improve during periods of economic growth.
Seasonal Unemployment	• Common in industries like agriculture, tourism, and construction where demand for labour fluctuates seasonally. • Workers remain unemployed during off-peak seasons.
Disguised Unemployment	• Occurs when more people are employed than needed, leading to low productivity. • Frequently seen in the agricultural sector in India.
Frictional Unemployment	• Temporary unemployment faced by individuals transitioning between jobs or entering the workforce. • Usually short-term and resolved once suitable employment is found.
Technological Unemployment	• Results from the replacement of human labour with automation or advanced machinery. • Can lead to skill redundancy without adequate retraining programs.
Underemployment	• Occurs when individuals are employed in jobs that do not fully utilize their skills or provide adequate income. • Includes part-time workers seeking full-time employment.

Unemployment in India

1. **Official Data Source**: The Periodic Labour Force Survey (PLFS) is the primary source for employment and unemployment indicators since 2017-18.
2. **Youth Unemployment**: The **unemployment rate** among **youth (aged 15-29)** was estimated at **10.2%** in 2023-24.
3. **Disguised Unemployment**: The **agriculture sector** engages **45% of the labour force** but **contributes only 16% of the Gross Value Added (GVA)**, highlighting disguised unemployment.
4. **Gig Economy Challenges**: The rise of the unorganized and gig sectors has introduced issues like job insecurity and lack of social benefits.
   a. The gig economy refers to a labor market characterized by short-term, and flexible jobs often facilitated through digital platforms.
   b. It involves individuals or companies offering services on a temporary or task-by-task basis, rather than through traditional full-time employment contracts.

About Confederation of Indian Industry (CII)

1. **Overview**: The Confederation of Indian Industry (CII) is a **non-government, not-for-profit organization** led and managed by industry stakeholders.
2. **Mission**: CII strives to create and maintain an environment conducive to India's development by collaborating with industry, government, and civil society. It achieves this through advisory and consultative processes.
3. **Established**: **Founded in 1895**, CII has been working for over a century to support India's industrial and economic growth.
4. **Headquarters**: The organization is based in **New Delhi**.

CII's 7-Point Agenda for Employment Generation

CII's recommendations focus on creating a structured approach to tackle unemployment:

1. **Integrated National Employment Policy:** Develop a **unified employment policy** consolidating various schemes across ministries and states.

Click Here for INDEX

a. Enhance the existing **National Career Service (NCS) portal** to integrate data from state and ministry-level employment initiatives.

2. **Data-Driven Employment Insights:** Establish a **Universal Labour Information Management System (ULIMS)** under **National Career Service** to provide: employment projections, skill demand insights, job classifications and aligned training opportunities.
3. **Boosting Labour-Intensive Sectors:** Focus on sectors like construction, tourism, textiles, and low-skilled manufacturing.
   a. Align **tariff structures**, **Free Trade Agreements (FTAs)**, and **Production/Employment Linked Schemes** to support these sectors.
   b. Encourage exports from labour-intensive manufacturing industries to create more jobs.
4. **Empowering Rural Youth:** Launch an internship program in government offices for college-educated youth in rural areas.
   a. Address the gap between education and professional skills while enhancing manpower for rural initiatives.
5. **Increasing Female Workforce Participation: Build dormitories** using Corporate Social Responsibility (CSR) funds.
   a. **Formalize the care economy** and establish government-supported creches in industrial clusters.
   b. Implement **gender-sensitive frameworks** for skill development and employment policies.
   c. **Strengthen women's safety laws** and a promote supportive work environments.
6. **Incentives for Hiring:** Replace **Section 80JJAA of tax provisions** with a **new provision under Chapter VIA**.
   a. Allow enhanced deductions for new employees under both standard and concessional tax regimes.
   b. Limit eligibility to employees hired outside reorganizations or reconstructions.
   c. Grant deductions for up to three years of employment, with a salary cap of Rs. 1 lakh per month.

1. **Current Provision: Section 80JJAA:** This section allows employers to claim deductions for hiring new employees. The deduction is **30% of the additional employee cost** incurred in the previous year.
   a. Eligibility is limited to companies subject to tax audit, and the new employees must be employed for at least 240 days in a year (150 days in some cases, like the apparel industry).
   b. The provision is aimed at encouraging the formalization of employment and boosting job creation.
2. **Proposed Changes by CII:** Introduce a new provision under Chapter VIA, which would apply even if the taxpayer opts for the concessional tax regime.
3. **Rationale for the Change:** Broaden the scope of hiring incentives to include a wider range of employers.
   a. Provide greater flexibility to taxpayers under the concessional tax regime.
   b. Ensure the provision is aligned with modern employment trends and focuses on genuine job creation.

7. **Tapping the Global Job Market:** Establish an **International Mobility Authority** under the **Ministry of External Affairs**.
   a. Facilitate global employment opportunities for Indian youth through collaborations like the **US H1B visa program** and agreements with countries such as Australia.
   b. Align skill development programs with global requirements, including cultural training and foreign language skills.

Challenges in India's Employment Landscape

1. **Skill Gap**: Only 5% of Indian labour has formal training compared to 95% in South Korea.
2. **Employer Hesitation**: Stringent labour norms and compliance burdens discourage new hiring.
3. **Fragmented Job Market**: Lack of coordination between various sectors complicates targeted hiring.
4. **Automation**: The rise of AI and machine learning reduces the demand for human labour in several sectors.

CII's Additional Recommendations

1. **Labour Codes Implementation**: Extend social security to gig and platform workers.
2. **Improving Productivity**: Reduce the **Incremental Capital Output Ratio (ICOR)** from 4.1 through better productivity metrics.
    a. **Incremental Capital Output Ratio (ICOR)** is an economic metric that measures the efficiency with which capital is used to generate economic output.
    b. It is defined as the ratio of additional capital investment required to produce an additional unit of output (GDP).
    c. A lower ICOR indicates better efficiency, meaning less capital is needed to achieve economic growth, while a higher ICOR suggests inefficiency.
3. **Expert Committee**: Set up a panel to study and recommend measures to enhance employment generation and productivity.

7. India's Journey Towards Eradicating Poverty Shows Promising Results

1. In January 2025, it was reported that India's rural poverty had significantly declined to 4.86% in the financial year 2023-24, compared to 25.7% in 2011-12.
    a. A sharp reduction is observed compared to the previous year, where rural poverty stood at 7.2% in FY2022-23.
2. Research based on the **State Bank of India's consumption expenditure survey** also revealed that urban poverty had dropped to 4.09% from 13.7% over the past 12 years.

What are the Key Findings from the State Bank of India (SBI) Research?

1. **Aggregate Poverty Rates**: Projected to be in the range of 4.0-4.5%, with minimal extreme poverty remaining.
2. **Narrowing Rural-Urban Consumption Gap**: The gap between rural and urban **Monthly Per Capita Consumption Expenditure (MPCE)** reduced to 69.7% from 88.2% in 2009-10.
    a. Enhanced rural infrastructure and government schemes have significantly contributed to this improvement.

What are the Contributing Factors to Poverty Reduction?

Government Support and Initiatives

1. **Direct Benefit Transfers (DBT)**: Streamlined subsidies and ensured financial assistance reaches the needy.
2. **Rural Infrastructure Development**: Investments in roads, housing, and electrification under schemes like **Pradhan Mantri Gram Sadak Yojana (PMGSY)**.
3. **Enhanced Livelihoods**: Programs like **MGNREGA** and **National Rural Livelihood Mission (NRLM)** provided employment opportunities and boosted rural incomes.
4. **Housing for All**: **Pradhan Mantri Awas Yojana-Gramin (PMAY-G)** targeted affordable housing for the rural poor.
    a. **Achievements**: 3.21 crore houses sanctioned and 2.67 crore completed as of November 2024. Financial assistance of up to Rs. 1.30 lakh provided for house construction.
5. **Social Protection and Welfare**: Schemes like **Janani Suraksha Yojana, Pradhan Mantri Jeevan Jyoti Bima Yojana**, and **Ayushman Bharat** improved access to healthcare and financial security.
6. **Skill Development and Employment**: **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** and other initiatives helped bridge the skill gap and create job opportunities.

Economic Growth and Consumption

1. **Higher consumption growth** among the **poorest 0-5% of the population** played a key role in reducing poverty.
2. **Adjustments for inflation** raised the **poverty line** to **Rs. 1,632 in rural areas** and **Rs. 1,944 in urban areas** in FY2023-24.

Focus on Lagging States

1. States that were previously behind have shown the **most improvement** in **reducing the income gap between rural and urban areas** due to targeted interventions.

Click Here for INDEX

What are the Challenges in Removing Poverty in Rural India?

1. **Dependency on Agriculture**: A large portion of the rural population relies on agriculture, which faces challenges like **climate change, unpredictable monsoons**, and **inadequate irrigation facilities**.
   a. **Traditional farming methods** and **low productivity** further worsen the issue.
2. **Unemployment and Underemployment**: **Limited non-agricultural job opportunities** result in **high unemployment and underemployment** rates. Many individuals **lack access to skill enhancement** and formal education.
3. **Limited Access to Services**: Basic services such as education, healthcare, sanitation, and clean drinking water are often inadequate in rural areas. **Poor infrastructure** affects access to essential services and opportunities.
4. **Land Ownership Issues**: A significant number of rural families do not own land or have **insecure land rights**, preventing them from investing in sustainable livelihoods.
5. **Social Inequality**: **Marginalized communities**, including Scheduled Castes (SCs), Scheduled Tribes (STs), and women, face systemic **discrimination** and **limited access to resources**.
   a. This **perpetuates cycles of poverty** and **restricts upward mobility**.
6. **Impact of Migration**: Young and educated individuals often migrate to urban areas for better opportunities, leading to a **"brain drain"** and reducing the skilled workforce in rural areas.
7. **Inflation and Rising Food Prices**: **Inflation disproportionately** affects rural areas, reducing purchasing power and consumption demand. Low-income households are particularly vulnerable to fluctuations in food prices.
8. **Governance Challenges**: **Weak implementation of poverty alleviation programs** due to corruption and inadequate monitoring. Lack of awareness about government schemes and limited community participation hinder progress.
9. **Short-Term Focus of Policies**: A preference for immediate relief measures over sustainable, long-term solutions delays substantial poverty eradication.

How Can Rural India be Made Poverty-free?

1. **Achieving Sustainable Development Goals (SDGs)**
   a. **No Poverty (SDG 1)**: Expand social protection and employment schemes.
   b. **Zero Hunger (SDG 2)**: Ensure food security through agriculture programs and Public Distribution System (PDS).
   c. **Good Health and Well-Being (SDG 3)**: Universal healthcare under Ayushman Bharat.
   d. **Reduced Inequalities (SDG 10)**: Enhance financial inclusion and equitable access to resources.
2. **Employment and Livelihood Enhancement**
   a. Provide demand-driven employment under MGNREGA.
   b. Conduct skill mapping and training through District Kaushal Kendras.
   c. Promote Self-Help Groups (SHGs) and Farmer Producer Organizations (FPOs).
3. **Infrastructure Development**
   a. Build roads, schools, and community centers to improve access to services.
   b. Promote digital inclusion by registering farmers on platforms like eNAM.
4. **Social and Behavioral Change**
   a. Address issues like informal credit exploitation and substance abuse.
   b. Encourage women's participation in economic and decision-making activities.
5. **Climate Resilience**
   a. Promote sustainable agriculture through Krishi Vigyan Kendras (KVKs).
   b. Integrate disaster risk reduction into local development plans.

8. UNDESA releases UN World Economic Situation and Prospects 2025 report

1. In January 2025, the **UN World Economic Situation and Prospects 2025** report was released by the **United Nations Department of Economic and Social Affairs (UN DESA)**,
2. It was prepared in partnership with **UN Trade and Development (UNCTAD)** and the **five UN regional commissions.**

The report comes at the mid-way point of a decade that has been characterized by **economic turbulence**. However, it shows that the global economy is **finally recovering** following a sequence of shocks.

United Nations Department of Economic and Social Affairs (UN DESA)

1. It is a division of the United Nations responsible for **coordinating and supporting** the work of various UN bodies in areas like **economic development, social inclusion, and environmental sustainability**.
2. **What does it do?**
   a. **Intergovernmental support:** By facilitating major global conferences and summits in the economic, social and environmental fields.
   b. **Analysis:** As the think tank of the UN, DESA, generates, analyses and compiles a wide range of economic, social and environmental data.
   c. **Capacity-building:** Assists in translating policy frameworks developed in UN conferences and summits into programs.
3. **Headquarters:** New York

UN Trade and Development (UNCTAD)

1. It is a **permanent intergovernmental body** established by the **United Nations General Assembly** in 1964.
2. **Objectives:**
   a. Aims to promote the **integration of developing countries** into the world economy.
   b. To help the international community promote a **global partnership for development.**
   c. Increase coherence in **global economic policy making**, and assure **development gains** for all from trade.
   d. Providing **economic and trade analysis**
3. **Headquarters**: Geneva, Switzerland
4. **Reports published**:
   a. Trade and Development Report
   b. World Investment Report
   c. World Investment Report

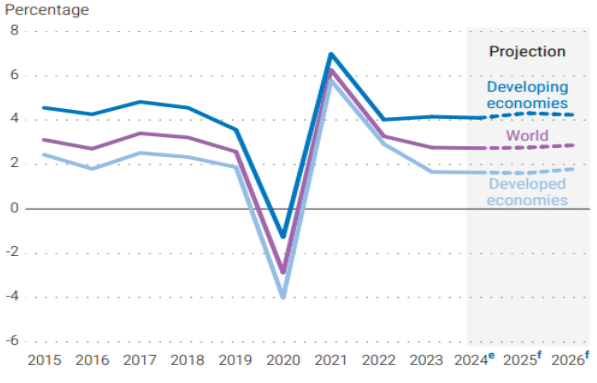
Five regional Commissions

1. These commissions are established by the **UN Economic and Social Council (ECOSOC)** to promote **regional development** across different parts of the world.
2. The five UN regional commissions are:
   a. Economic Commission for Africa (ECA),
   b. Economic Commission for Europe (ECE),
   c. Economic Commission for Latin America and the Caribbean (ECLAC),
   d. Economic and Social Commission for Asia and the Pacific (ESCAP), and
   e. Economic and Social Commission for Western Asia (ESCWA).

What are the key global economic highlights?

1. **Economic growth forecast:**
   a. The Report has pegged the global economic growth forecast at **2.8% for 2025** and **2.9% for 2026**, largely unchanged from previous years.
   b. **Overall:** Slower global growth than the pre-pandemic average of 3.2%
   c. **Slower growth**: China and the United States
   d. **Modest Recovery:** European Union, Japan, United Kingdom
   e. **Strong Performance:** In large developing economies like India and Indonesia.
   f. **Slight improvement** in growth for least developed countries (LDCs) in 2025

Growth of economic output



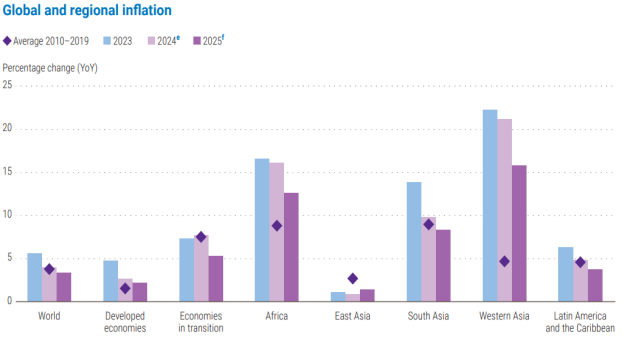
Source: UN DESA, based on estimates and forecasts produced with the World Economic Forecasting Model.

2. **Global** inflation:
   a. **Fall** in global inflation from **4% in 2024 to 3.4% in 2025**, driven by:

Click Here for INDEX

i. Easing **labour market pressures** in developed economies

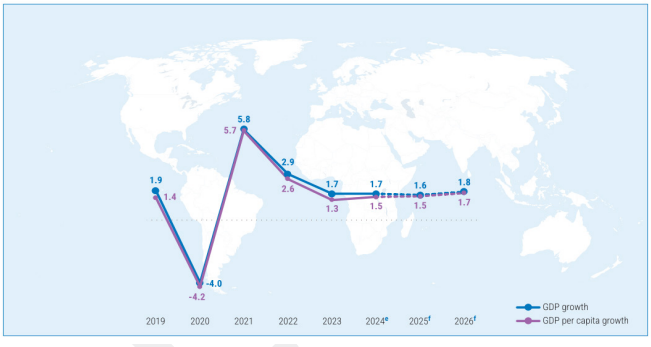
ii. Moderating international **food and energy** commodity prices.



3. **US:**
   a. Growth to moderate to **1.9% in 2025 and 2.1% in 2026**
   b. Due to weaker labour market performance, modest income growth, and looming cuts in public spending

4. **European Union:**
   a. Growth is forecasted to rise from **0.9% in 2024 to 1.3% in 2025 and 1.5% in 2026**.
   b. But it faces **constraints** such as geopolitical uncertainties, and structural challenges like population ageing and weak productivity.

DEVELOPED ECONOMIES



5. **China**
   a. Growth to moderate from **4.9% in 2024 to 4.8% in 2025**
   b. Public sector investments and strong export performance are partly offset by **subdued consumption growth** and continued weakness in the **property sector**.

6. **Africa**
   a. Growth to improve from **3.4% in 2024 to 3.7% in 2025 and 4% in 2026**,
   b. Driven by recovery in the region's largest economies—Egypt, Nigeria, and South Africa.

7. **Least Developed Countries**
   a. Economic growth in the least developed countries (LDCs) is projected to rise to **4.6% in 2025, up from the 4.1%** growth estimated for 2024.
   b. But still well below the **7% Sustainable Development Goals (SDG) target**.

What are Least Developed Countries (LDCs)?

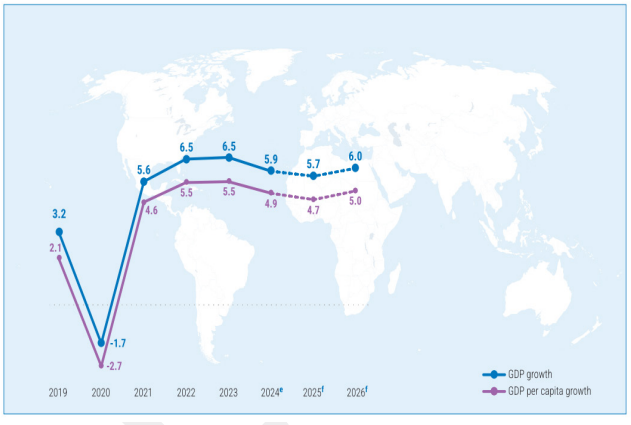
1. **Least developed countries (LDCs)** are low-income countries confronting **severe structural impediments to sustainable development.**
2. They are highly vulnerable to **economic and environmental shocks** and have low levels of **human assets.**
3. There are currently **44 countries on the list of LDCs** which is **reviewed every three years** by the **Committee for Development (CDP).**
4. **Identification Criteria:**
   a. **Income**: Countries must have an average per capita income below a certain threshold
   b. **Human assets:** Low score on the Human Assets Index (HAI). It measures health and education outcomes.
   c. **Economic and environmental vulnerability:** Must score high on the Economic and Environmental Vulnerability Index, which measures factors like remoteness, dependence on agriculture and vulnerability to natural disasters.

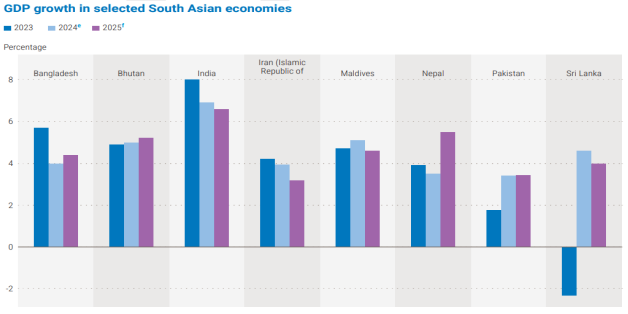
8. **Hurdles for developing countries**
   a. **Finance mobilization challenges:** To invest in critical infrastructure, technology, and human capital, and in moving up manufacturing and services value chains.
   b. **Limited benefit of green transition:** The benefits of the green transition and technological advancements are projected to remain disproportionately concentrated in developed economies.

c. **Debt issues:** High borrowing costs and debt sustainability challenges leading to high risks of debt distress.

What are the key highlights for South Asia and India?

1. **South Asia**
   a. **Robust economic growth** expected this year mainly driven by the **"strong performance"** in India and recovery in Bhutan, Nepal, Pakistan, and Sri Lanka.
   b. **Growth projection: 5.7%** in 2025 and **6%** in 2026.
   c. **Easing of Depreciation of currencies:** As monetary loosening in the United States has increased the attractiveness of both direct and portfolio investments in the region's economies.
   d. **Risks:**
      i. Deceleration in external demand
      ii. Ongoing debt challenges
      iii. Social unrest in parts of South Asia
      iv. Highly vulnerable to the impact of climate hazards





2. **Indian Economic Growth forecast**:
   a. A growth of **6.6% for India in 2025**, following an estimated expansion of **6.9% in 2024.**
   b. **Key Drivers:** Strong private consumption and investment
3. **Strengths in the Indian Economy**
   a. **Capital expenditure:** Capital expenditure on infrastructure development can have strong multiplier effects on growth in the coming years.
   b. **Manufacturing and Services sectors**: Expansion in these sectors will continue to drive the economy.
   c. **Strong Export growth:** In services and certain goods categories, such as pharmaceutical and electronics.
   d. **Favourable monsoon rains in 2024**: This has improved summer-sowing areas for all major crops, boosting agricultural output expectations for 2025.
   e. **Decrease in Consumer price inflation**: It would decrease from an estimated 4.8% in 2024 to 4.3% in 2025, staying within the 2–6% medium-term target range set by the RBI.
   f. **Strong Employment indicators**: For instance, the labour force participation is at near record highs.
      i. However, substantial **gender gaps** remain despite progress in female labour market participation in India.
   g. **Untapped reserves of critical minerals:** As per the report, India has vast reserves of rare earth elements but currently accounts for only a small share of global production.

What are the suggestions offered?

1. **Supporting developing countries:**
   a. With priority given to technology transfer, skills development, and institutional capacity-building.
   b. Focus on establishing **transparent governance** frameworks and building basic public sector capabilities.
2. **Sustainable extraction of critical minerals:** It must be backed by comprehensive regulatory frameworks, equitable benefit-sharing, and investments in building productive capacities.

Click Here for INDEX

3. **International cooperation:**
   a. For strengthening **multilateral trade cooperation** under the World Trade Organization (WTO) and similar frameworks.
   b. For **tackling illicit financial flows** as well as enhancing market transparency.
   c. For ensuring more **predictable investment environment** and unlocking greater **private sector** financing opportunities.
   d. Essential for accelerating growth and progress towards the **Sustainable Development Goals.**

9. Stakeholder Consultation Made Mandatory in India's Foreign Trade Policy

1. In January 2025, the **Government of India** has introduced significant amendments to the **Foreign Trade Policy (FTP) of 2023**, emphasizing inclusivity and transparency in decision-making.
2. The **Directorate General of Foreign Trade (DGFT)** has notified these amendments, making **stakeholder consultations legally mandatory** before formulating or amending the FTP.
3. This development reflects the government's commitment to strengthening the scope of **Ease of Doing Business (EoDB)** and **fostering participative decision-making**.

What is Foreign Trade Policy 2023?

1. The Foreign Trade Policy (2023) is a **policy document** which is based on continuity of time-tested schemes facilitating exports as well as a document which is responsive to the requirements of trade.
2. The Key Approach to the policy is **based on these 4 pillars –**
   a. **Incentive to Remission**,
   b. **Export promotion** through collaboration - Exporters, States, Districts, Indian Missions,
   c. **Ease of doing business**, reduction in transaction cost and e-initiatives and
   d. **Emerging Areas** – E-Commerce Developing Districts as Export Hubs and streamlining SCOMET policy.

Key Amendments to the FTP, 2023

1. **Mandatory Stakeholder Consultation**: The amendments include new provisions in the FTP, providing **legal backing for mandatory consultations with stakeholders** such as importers, exporters, and industry experts.
   a. Stakeholders are encouraged to provide views, suggestions, comments, and feedback on proposed policies or amendments.
2. **Mechanism for Feedback Acknowledgment**: The changes introduce a mechanism to inform stakeholders of the reasons for not accepting their inputs if their suggestions are not incorporated into the final policy.
3. **Reserved Rights for Exceptional Cases**: While consultations are mandatory, the **government retains the authority to take suo moto decisions** in contingency situations. This ensures flexibility and swift action when needed.

Significance of the Amendments

1. **Enhanced Participation**: The amendments aim **to encourage active participation from all stakeholders** in shaping policies affecting the import, export, and transit of goods.
   a. Stakeholders are provided with a reasonable opportunity to comment and contribute to the decision-making process.
2. **Commitment to Transparency**: By mandating consultations and providing feedback mechanisms, the government ensures transparency and accountability in policy formulation.
3. **Ease of Doing Business (EoDB)**: These changes align with the broader objective of improving EoDB in India by streamlining processes and incorporating industry feedback into trade policies.

Open-Ended Foreign Trade Policy

1. The government's decision to shift from the earlier five-year term for the FTP to an open-ended framework in 2023 has laid the foundation for continuous updates.
2. This approach accommodates emerging needs and facilitates ongoing incorporation of stakeholder feedback.

Balancing Inclusivity and Sovereignty

1. **Inclusiveness in Decision-Making**: The new provisions symbolize a move towards inclusive governance, ensuring that every valuable opinion is considered.
2. **Final Decision Authority**: In cases where differing opinions arise, the government reserves the right to make the final call, maintaining a balance between inclusivity and the need for decisive action.
3. **Exceptional Circumstances**: The suo moto authority to formulate policies ensures the government can respond swiftly to unforeseen challenges or emergencies without procedural delays.

10. RBI Releases List of NBFC-UL for 2024-25

1. The **Reserve Bank of India (RBI)** has released the list of Non-Banking Financial Companies (NBFCs) classified under the **Upper Layer (NBFC-UL)** for the year **2024-25**.
2. This classification is part of the **Scale-Based Regulation (SBR)** framework designed to enhance the stability of NBFCs.

Key Highlights of the NBFC-UL List:

1. The list includes major entities such as:
   a. LIC Housing Finance Limited
   b. PNB Housing Finance Limited
   c. Shriram Finance Limited, among others.
2. **Enhanced Regulatory Requirements:** Once an NBFC is classified as an NBFC-UL, it becomes subject to stricter regulatory requirements. This classification will be enforced for a minimum period of **5 years**.

Objectives of Scale-Based Regulation (SBR):

The **SBR framework** was introduced to achieve the following goals:

1. **Mitigate Systemic Risks:** By regulating large and significant NBFCs more stringently, the framework aims to reduce the potential for financial contagion and systemic risks.
2. **Proportional Regulation:** The framework applies the principle of proportionality, ensuring that larger, more significant NBFCs adhere to higher standards of regulation.
3. **Enhance Risk Management:** The goal is to improve the quality of risk management practices within NBFCs, thus strengthening their operational integrity.

What is a Non-Banking Financial Company (NBFC)?

An **NBFC** is a financial entity that provides financial services similar to a bank but operates differently. Here are the key aspects of NBFCs:

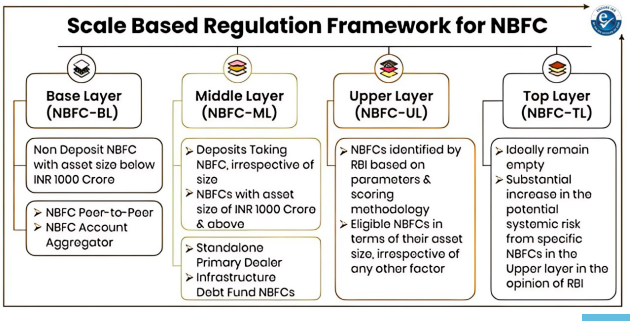
1. **Registration:** NBFCs are registered under the **Companies Act, 1956**.
2. **Objective:** NBFCs are primarily engaged in **lending activities**, but exclude:
   a. Institutions primarily involved in **agriculture** and **industrial activities**.
   b. Businesses engaged in **trading goods** (except securities) or providing services related to **sale/purchase/construction of immovable property**.

Key Differences from Banks:

1. **Deposit Acceptance:** NBFCs cannot accept **demand deposits** (i.e., they can only accept **term deposits**).
2. **Payment & Settlement Systems:** NBFCs are not part of the payment and settlement systems and **cannot issue cheques** drawn on themselves.
3. **Deposit Insurance: Deposit insurance** is not available to the depositors of NBFCs, unlike banks.

Scale-Based Regulation (SBR) Framework for NBFCs

The **Scale-Based Regulation (SBR)** framework for NBFCs is a regulatory model designed to apply differentiated regulatory standards based on the size, activities, and systemic importance of the NBFC.



Click Here for INDEX

11. Fiscal Health Index Report 2025

In January 2025, NITI Aayog released the **Fiscal Health Index (FHI) Report 2025**, shedding light on the fiscal condition of Indian states.

This annual report aims to guide policy reforms that promote sustainable and resilient economic growth by providing data-driven insights into the fiscal health at the sub-national level.

What is the Fiscal Health Index (FHI)?

1. The **FHI** ranks Indian states based on a composite fiscal index, which is derived from **five key sub-indices and nine minor sub-indices.**

MAJOR SUB-INDICES	MINOR SUB-INDICES
1. Quality of Expenditure	1.1 Total Developmental Expenditure/Total Expenditure
	1.2 Total Capital Outlay/ GSDP*
2. Revenue Mobilization	2.1 State Own Revenue/ GSDP*
	2.2 State Own Revenue/ Total Expenditure
3. Fiscal Prudence	3.1 Gross Fiscal Deficit/ GSDP*
	3.2 Revenue Deficit/ GSDP*
4. Debt Index	4.1 Interest Payments/Revenue Receipts
	4.2 Outstanding Liabilities/ GSDP*
5. Debt Sustainability	5.1 Growth Rate of GSDP* - Growth Rate of Interest Payments

2. These indices cover various aspects of fiscal health, providing a comprehensive assessment of a state's financial management.
3. The report uses data from the **Comptroller and Auditor General (CAG)** for the analysis, focusing on **18 major states** for the **financial year 2022-23**. It excludes special category states and Himalayan states for the analysis.

Key Classification of States

The FHI classifies states based on their overall scores, as follows:

1. **Achievers**: States with scores greater than 50.
2. **Front Runners**: States with scores between 40 and 50.
3. **Performers**: States with scores between 25 and 40.
4. **Aspirational**: States with scores equal to or less than 25.

Analysis and Findings of the FHI 2025 Report

The report identifies the top performers and areas of concern across Indian states:

1. **Top Performing States: Odisha**, **Chhattisgarh**, and **Goa** have been identified as the leading performers in fiscal health, showcasing strong financial management.
2. **Non-Tax Revenue:** States like **Odisha**, **Jharkhand**, **Goa**, and **Chhattisgarh** have shown robust generation of non-tax revenue, accounting for around 21% of their total revenue. This reflects a diversified approach to state revenue generation beyond just taxes.
3. **Capital Expenditure:** States like **Madhya Pradesh**, **Odisha**, **Goa**, **Karnataka**, and **Uttar Pradesh** stood out for their higher allocation of funds towards capital expenditure. These states committed about 27% of their development funds to capital investment, supporting infrastructure and long-term growth.
4. **Debt Sustainability: West Bengal** and **Punjab** face concerns regarding their fiscal sustainability, particularly due to rising **debt-to-GDP** ratios. This trend raises questions about their ability to manage long-term debt without compromising fiscal health.

Category	States
Achievers	Odisha, Chhattisgarh, Goa, Jharkhand
Front-Runners	Maharashtra, Uttar Pradesh, Telangana, MP, Karnataka
Performers	Tamil Nadu, Bihar, Rajasthan, Haryana
Aspirational	Punjab, Andhra Pradesh, West Bengal, Kerala

Significance of the FHI Report

The **FHI Report 2025** plays a vital role in promoting fiscal health and good governance at the state level. Here's how it can make a difference:

1. **Promoting Competitive Federalism:** The FHI report encourages states to compete in improving their fiscal strategies.
   - This fosters an environment where each state strives to align with national objectives of fiscal stability and prosperity, ultimately benefiting the nation as a whole.
2. **Ensuring Transparency and Accountability:** By publicly ranking states based on their fiscal performance, the FHI promotes greater **transparency** and **accountability** in financial management. This public measure helps hold states responsible for their financial decisions.

3. **Informed Policymaking:** The FHI provides policymakers with quantifiable metrics to assess the fiscal health of their states.
    - This data-driven approach helps in identifying areas where reforms are needed or where resources should be allocated for better fiscal outcomes.

12. First state to launch Green GDP: Chhattisgarh

1. Chhattisgarh recently became the first state in India to launch a initiative that connects the ecosystem services of forests to the Green Gross Domestic Product (Green GDP).
2. This innovative approach integrates environmental health and ecosystem services with economic performance.

Understanding Traditional GDP vs Green GDP

1. **Traditional GDP:**
    a. **Definition**: It measures the annual value of goods and services produced within a country. Widely used since 1944, it focuses solely on economic output.
    b. **Limitation**: Traditional GDP overlooks environmental health, social well-being, and sustainability. It does not account for the long-term effects of economic activities on the environment.
2. **Green GDP:**
    a. **Definition:** Green GDP is a modified version of traditional GDP that incorporates environmental costs into economic output, such as resource depletion, pollution, and environmental degradation.
    b. **Objective:** Green GDP offers a more accurate representation of a nation's economic performance by factoring in the environmental impact of economic activities.

Need for Green GDP

1. **Limitation of Traditional GDP:** Traditional GDP neglects sustainability and the environmental costs associated with economic activities.
2. **Benefits of Green GDP:**
    a. Ensures that economic growth aligns with sustainability.
    b. Reflects environmental and resource costs that are ignored in traditional GDP.
    c. Encourages responsible consumption, biodiversity conservation, and sustainable development.

Formula:

1. According to the **World Bank, Green GDP = NDP (Net Domestic Product) − (Cost of Natural Resource Depletion + Cost of Ecosystem Degradation).**
    a. Where NDP = GDP − Depreciation of Produced Assets.
    b. **Cost of Natural Resource Depletion** refers to the value lost due to overuse of natural resources.
    c. **Cost of Ecosystem Degradation** refers to the value lost from environmental damage such as pollution and deforestation.

Green GDP and Sustainable Development

Green GDP supports the achievement of multiple Sustainable Development Goals (SDGs) by promoting a more sustainable and responsible approach to economic growth:

1. **Sustainable Resource Use** (SDG 12): Green GDP promotes responsible consumption and production, ensuring long-term resource availability.
2. **Climate Change Mitigation** (SDG 13): Reduces fossil fuel dependence, supports renewable energy adoption, and mitigates climate change.
3. **Biodiversity Conservation** (SDGs 14 & 15): Encourages environmental preservation and the safeguarding of ecosystems.
4. **Green Investments** (SDG 8): Fosters green industries and jobs, contributing to inclusive and sustainable economic growth.

Click Here for INDEX

Note:- Uttarakhand first state to launch the Gross Environment Product (GEP) Index

1. In 2024, Uttarakhand became the first state to launch the Gross Environment Product (GEP) Index, which evaluates environmental health by measuring factors beyond traditional ecosystem services.
2. It includes the value of tree species, survival rates, and conservation efforts, providing a more comprehensive approach to ecosystem growth assessment.

Challenges in Green GDP Framework

Despite its promise, several challenges hinder the effective implementation of Green GDP:

1. **Forest Cover Definition:** Forest cover includes land with a tree canopy density of more than 10% and covers areas like orchards and bamboo plantations. The lack of standardized definitions can lead to inconsistencies in measurement.
2. **Methodological Differences:** No universally accepted method exists for calculating Green GDP, making cross-country comparisons difficult. Variations in local conditions, priorities, and available data create discrepancies in Green GDP assessments.
3. **Local Body Integration Challenges:**
   a. Lack of awareness and literacy on Green GDP concepts among grassroots leaders.
   b. Limited technical expertise and resource constraints at the local level impede accurate data collection and environmental monitoring.
4. **Data Collection Challenges:** Inconsistent environmental data collection at the local level leads to gaps in information, reducing the reliability of Green GDP calculations.
5. **Unclear Financial Benefits:** The direct financial benefits of Green GDP, especially for communities such as tribes and forest dwellers, are unclear. These communities play a crucial role in forest preservation, and it is vital that they benefit from these initiatives.

Global Practices in Green Gross Domestic Product (GDP)

Countries around the world are exploring methods to integrate environmental considerations into their economic systems:

1. **United Nations (SEEA):** The System of Environmental-Economic Accounting (SEEA) integrates economic and environmental data, providing a comprehensive view of the relationship between the economy and the environment.
2. **European Union:** The EU's Beyond GDP initiative incorporates sustainability metrics into economic assessments, prioritizing long-term planetary health.
3. **World Bank (WAVES Program):** Promotes sustainable development by integrating natural resource accounting into national development planning.
4. **Bhutan (Gross National Happiness):** The GNH framework emphasizes ecological sustainability in development policies.
5. **Other Countries (China, Norway, US):** These countries are also exploring incorporating environmental costs into national accounting systems.

Way Forward: Enhancing Green GDP Implementation

To fully realize the potential of Green GDP, several measures need to be undertaken:

1. **Establishing a Standardized Framework:** Develop a unified framework and methodology for measuring and valuing environmental costs and benefits, based on scientific and economic best practices.
2. **Enhancing Data Collection and Quality:** Improve the accuracy, consistency, and availability of environmental indicators, such as emissions, resource use, and ecosystem services. Harmonize data across countries to enable global benchmarking.
3. **Raising Awareness and Advocacy:** Promote the understanding of Green GDP among policymakers, businesses, and the public. Conduct educational campaigns and training programs to increase awareness about its importance.

4. **Encouraging Stakeholder Collaboration:** Facilitate the participation of governments, international organizations, civil society, and the private sector in Green GDP policymaking and implementation. Strengthen public-private partnerships (PPPs) to fund and support Green GDP initiatives.
5. **Managing Trade-offs and Policy Conflicts:** Develop policies that balance economic growth with environmental sustainability, ensuring equity and justice. Compensation mechanisms and incentives can help industries and communities transition to a green economy.

13. BAANKNET (Bank Asset Auction Network)

Ministry of Finance launched a revamped e-auction portal **'BAANKNET'**.

About BAANKNET

1. It **consolidates information on e-auction properties from all Public Sector Banks** and offers a **one-stop destination for buyers and investors** to discover a wide range of assets.
2. The listings include residential properties such as **flats, independent houses, and open plots, as well as commercial properties, industrial land and buildings, shops, etc.**
3. The platform is expected to **unlock the value of distressed assets** and boosting investor confidence.

14. Prepaid Payment Instruments (PPI)

RBI has allowed **Prepaid Payment Instruments (PPIs)** holders to make and receive **Unified Payments Interface (UPI) payments** through **third-party mobile applications.**

About PPI

1. PPIs are instruments that facilitate the **purchase of goods and services**, conduct of financial services, enable remittance facilities, etc., against the value stored therein. E.g. Mobile wallets, digital wallets, gift cards
2. PPIs can be **issued by banks and non-banks.**
   a. Classified under two types: **small PPIs** (issued after obtaining minimum details of the PPI holder) **and Full KYC PPIs.**

15. Z Morh Tunnel (Sonamarg Tunnel), Banihal Bypass, Anji Khad Bridge

Click Here for INDEX

In January 2025 Jammu and Kashmir (J & K) has witnessed several significant infrastructure developments aimed at improving connectivity, enhancing security, and boosting economic growth. These projects, including the **Z Morh Tunnel**, **Banihal Bypass**, and **Anji Khad Bridge**.

A. Z Morh Tunnel (Sonamarg Tunnel)

1. The **Z Morh Tunnel**, located in the Sonamarg area of Ganderbal, Jammu and Kashmir, was inaugurated by the Prime Minister to enhance connectivity and safety in the region.
2. The tunnel is a significant milestone in the development of infrastructure in the region, aimed at ensuring year-round **access to the Ladakh region.**

Key Details:

1. **Initiation:** The project was initially started by the Border Roads Organization (BRO) in 2015, and later evolved under the National Highways and Infrastructure Development Corporation Limited (NHIDCL).
2. **Construction Firm:** The APCO Infratech firm played a crucial role in executing the project.
3. **Location:** Situated at an altitude of 8,650 feet, it spans a total of **12 kilometers**, which includes:
   a. **6.4 km** of the main tunnel.
   b. An **egress tunnel** and approach roads.
4. **Tunnel Structure:** It is a **two-lane** road tunnel with a parallel **7.5-meter-wide escape passage**.

Significance:

1. **All-weather Connectivity:** The tunnel ensures uninterrupted all-weather connectivity between **Srinagar** and **Sonamarg**, which is a key route to **Leh**.

Click Here for INDEX

2. **Enhanced Safety and Access to Ladakh:** It will provide safe, seamless access to the **Ladakh region**, especially during harsh winter months when the traditional routes are closed.
3. **Tourism Promotion:** By improving infrastructure, the tunnel is expected to boost tourism in **Sonamarg**, especially promoting **winter tourism**, **adventure sports**, and enhancing local livelihoods.

B. Banihal Bypass

The **Banihal Bypass** has been completed as a critical part of the **National Highway 44 (NH-44)** in Jammu and Kashmir.

Key Details:

1. **Location:** The bypass is a **2.35 km road section** of **NH-44** in **Jammu and Kashmir**.
2. **NH-44:** Known as the **Old NH 7**, NH-44 is the **longest national highway in India**, stretching a massive **3,745 kilometers** from **Srinagar** in Jammu and Kashmir to **Kanyakumari** in Tamil Nadu, connecting the northern and southern extremes of the country.

Significance:

1. **Security:** The Banihal bypass plays a crucial role in facilitating rapid movement for **security forces** in the region, ensuring better control and response.
2. **Travel Time Reduction:** It reduces travel time between **Kharpora**, **Banihal**, and the **Navyuga Tunnel** to just **seven minutes**, making the journey much faster and more efficient.

C. Anji Khad Bridge

The **Anji Khad Bridge** is a remarkable engineering feat by **Indian Railways**. It is India's first **cable-stayed rail bridge**, enhancing the rail network in Jammu and Kashmir.

Key Details:

1. **Location:** Situated in the **Reasi district** of Jammu and Kashmir, the bridge is a vital part of the **Udhampur-Srinagar-Baramulla Rail Link (USBRL) Project**, which aims to connect the Kashmir Valley with the rest of the Indian Railways network.
2. **Dimensions:**
   a. **Length: 725.5 meters**.
   b. **Height: 331 meters** above the **Anji River**, which is a tributary of the **Chenab** River.

Significance:

1. **Enhanced Connectivity:** The Anji Khad Bridge will significantly improve connectivity between **Katra** and the **Kashmir Valley**, making rail travel smoother and more reliable.
2. **Boost to Tourism:** This bridge is expected to increase tourism in the region, making it easier for visitors to travel between important tourist destinations like **Vaishno Devi** and the **Kashmir Valley**.
3. **Economic Growth:** The bridge will also foster overall economic growth in Jammu and Kashmir by improving the transport infrastructure and facilitating easier movement of goods and people.

The **Z Morh Tunnel**, **Banihal Bypass**, and **Anji Khad Bridge** represent transformative infrastructure projects in **Jammu and Kashmir**. These developments not only enhance connectivity and safety but also provide a boost to tourism, economic growth, and security in the region. They are crucial steps toward modernizing the region's infrastructure and ensuring better accessibility to remote areas, while contributing to national integration.

E. Science & Technology

Click Here for INDEX

1. Third launchpad at Satish Dhawan Space Center

1. In January 2025, the Union Cabinet approved the establishment of a **Third Launch Pad (TLP)** at the **Satish Dhawan Space Center (SDSC)** in Sriharikota, Andhra Pradesh.
2. The new launch pad will help the **Indian Space Research Organisation (ISRO)** become future-ready, especially for using the heavier **Next Generation Launch Vehicle (NGLV)**, which is currently under development.

About Satish Dhawan Space Center (SDSC)

1. The **Satish Dhawan Space Center** (SDSC), located in **Sriharikota**, is India's only spaceport for launching spacecraft and satellites.
2. It became operational on **October 9, 1971**, with the flight of **Rohini-125**, a small-sounding rocket.
3. The center was initially known as **SHAR (Sriharikota Range)** but was renamed **Satish Dhawan Space Centre SHAR** in September 2002, in honor of **Satish Dhawan**, a prominent Indian space scientist.
4. Sriharikota is located on a **spindle-shaped island** along the east coast of Andhra Pradesh. The strategic location of Sriharikota offers several advantages:
   a. **Proximity to the Equator**: This is important because launching rockets closer to the equator allows them to take advantage of Earth's rotation, thereby providing an additional velocity boost of around 450 m/s, which can significantly enhance payload capacity.
   b. **Launch Direction**: Being on the east coast, it facilitates the launch of rockets in an easterly direction, ensuring they fly over the sea, which reduces the risk of damage to populated areas.
   c. **Largely Uninhabited Area**: The area around the space center is largely uninhabited, which ensures safety and minimizes risks to human settlements during rocket launches.

Current Launch Pads in India

Currently, ISRO operates **two launch pads** at **Sriharikota**:

1. **First Launch Pad**: Used for the launch of **Polar Satellite Launch Vehicle (PSLV)** and **Small Satellite Launch Vehicle (SSLV)**.
2. **Second Launch Pad**: Primarily used for launching the **Geosynchronous Satellite Launch Vehicle (GSLV)** and **LVM3**. It also serves as a **standby** for PSLV.

Significance of the New Third Launch Pad (TLP)

The establishment of the **Third Launch Pad (TLP)** at SDSC will have several important implications for ISRO:

1. **Capacity Augmentation**: The new launch pad will enable **higher launch frequencies**, enhancing ISRO's ability to conduct multiple missions in parallel. This is crucial for future space exploration and human spaceflight missions.
2. **Next Generation Launch Vehicles (NGLV)**: The TLP is configured to support the launch of **Next Generation Launch Vehicles (NGLV)**, which are being developed to accommodate heavier payloads. The TLP will also be used to launch the **Launch Vehicle Mark-3 (LVM3)** with a semi-cryogenic stage, as well as scaled-up configurations of the NGLV.
3. **Future Space Exploration**: The establishment of the TLP aligns with India's ambitious plans for the future, including:
   a. The establishment of **Bharatiya Antariksh Station (BAS)** by **2035**.
   b. A **crewed lunar landing** by **2040**. These missions will require the use of next-generation, heavier launch vehicles with advanced propulsion systems.
4. **Meeting Future Transportation Needs**: The new launch pad is essential for ISRO to meet evolving space transportation requirements over the next **25-30 years**.

Click Here for INDEX

Next Generation Launch Vehicles (NGLV)

The **NGLV Programme** aims to develop a new, more powerful rocket (nicknamed the **Soorya Rocket**) to launch satellites, spacecraft, and other payloads. Key features of the **NGLV** include:

1. **Three-stage vehicle**: It will feature a reusable first stage, which will help lower the cost of access to space.
2. **Semi-Cryogenic Propulsion**: The booster stages will use **refined kerosene** as fuel and **liquid oxygen (LOX)** as an oxidizer.
3. **Enhanced Payload Capacity**: The NGLV will have **three times the current payload capacity** and **1.5 times the cost** compared to the **LVM3**.

Other Launch Vehicles of ISRO

ISRO operates several other launch vehicles, each serving different purposes:

1. **Polar Satellite Launch Vehicle (PSLV)**: It is a **four-stage** vehicle with solid rocket motors in the first and third stages and liquid engines in the second and fourth stages.
2. **Geosynchronous Satellite Launch Vehicle (GSLV)**: This is an **operational fourth-generation launch vehicle** with three stages and four liquid strap-on motors. It is used to launch communication satellites into **geo-transfer orbits**.
3. **Small Satellite Launch Vehicle (SSLV)**: A **three-stage** vehicle, configured with solid propulsion stages and a liquid propulsion-based **Velocity Trimming Module (VTM)** as the terminal stage.
4. **Geosynchronous Satellite Launch Vehicle Mk-III (LVM3)**: It is a **three-stage** vehicle with two solid strap-on motors (S200), a liquid core stage (L110), and a high-thrust cryogenic upper stage (C25).

Who Was Satish Dhawan?

1. **Satish Dhawan** (born in **Srinagar**) was a legendary Indian rocket scientist, often referred to as the **'Father of Experimental Fluid Dynamics research'** in India. He made significant contributions to the fields of **turbulence** and **boundary layers**.
2. In **1972**, Dhawan succeeded **Vikram Sarabhai** as the Chairman of ISRO. Under his leadership, ISRO achieved several milestones, including:
   a. The operationalization of **INSAT** (India's telecommunications satellite system).
   b. The development of **IRS** (Indian Remote Sensing satellites).
   c. The successful launch of the **Polar Satellite Launch Vehicle (PSLV)**, which elevated India to the ranks of global spacefaring nations.

2. ISRO's 100th mission from Sriharikota

1. In January 2025, the Indian Space Research Organisation (ISRO) launched **NVS-02**, marking the **100th successful launch** in its history.
2. The GSLV (**Geosynchronous Satellite Launch Vehicle**)-F15 rocket carried the NVS-02 navigation satellite into orbit, signaling a major step in India's space program.

What is NVS-02?

1. NVS-02 is the second satellite in a series of five next-generation satellites that are part of India's Indian Regional Navigation Satellite System (NavIC).
2. This series is designed to replace the existing satellites in the NavIC constellation.
3. The first satellite of this series was launched in 2023, and NVS-02 continues to enhance the capabilities of the system.

Key Features of NVS-02:

1. **Enhanced Satellite Capabilities:** NVS-02, compared to its predecessors, is heavier, has a longer mission life, and is equipped with advanced technology, including indigenously developed atomic clocks.
2. **L1 Frequency:** A significant feature of the NVS-02 is its support for the L1 frequency, which is widely used by the U.S. Global Positioning System (GPS). This enhancement allows NavIC signals to be more accessible, even for smaller devices like personal trackers.

Payloads of NVS-02

NVS-02 have two main types of payloads: **navigation payload** and **ranging payload**, each serving a distinct purpose in providing accurate location and time data.

1. Navigational Payload:

a. **Transmission of Signals:** The navigational payload is responsible for transmitting signals to

users on Earth using three frequency bands: L1, L5, and S bands. These signals allow users to determine their exact position.

b. **Atomic Clock:** Onboard NVS-02 is a **Rubidium atomic clock**, which is highly accurate and stable. Atomic clocks are essential for precise timekeeping, and in the case of NVS-02, they ensure errors of less than 10 nanoseconds, which is crucial for accurate navigation and position determination.

2. Ranging Payload:

a. **Transponder System:** The ranging payload consists of a transponder that transmits time-stamped navigation signals from the satellite to ground receivers.

b. **Precise Location Information:** The information sent by the transponder is processed by receivers at the ground station to calculate the user's exact position, speed, and time, providing continuous and uninterrupted service regardless of weather conditions.

Significance of the 2nd Generation NavIC Satellites

The second-generation NavIC satellites, like NVS-02, bring several important advancements:

1. **Third Frequency (L1 Band):** The addition of the L1 frequency band alongside the existing L5 and S bands enhances the system's interoperability with other global satellite-based navigation systems, such as GPS.
2. **Improved Security:** The new generation of satellites comes equipped with a more robust encryption system, ensuring that all communications remain secure and protected from interference.
3. **Longer Mission Life:** The second-generation satellites are designed for a mission life of over 12 years, which is a significant improvement over the 10-year lifespan of the first-generation satellites.

ISRO's 100th Launch: A Historic Milestone

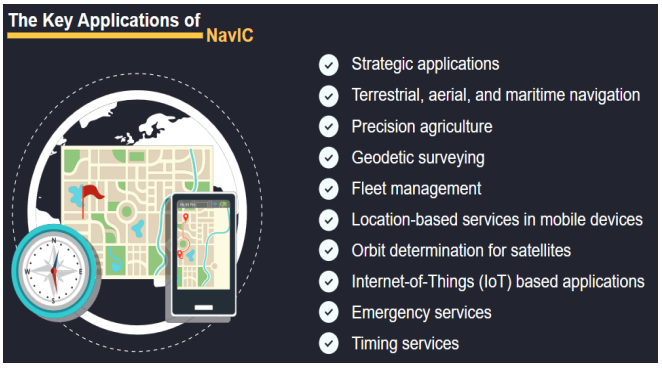
1. The launch of **NVS-02 aboard** the GSLV-F15 rocket marks a landmark in ISRO's history—its 100th successful launch.
   - This milestone underscores the organization's significant advancements in space technology and satellite navigation.
2. Over its history, ISRO has launched a total of 548 satellites, weighing around 120 tonnes. This includes **433 satellites from foreign nations**.
   - The agency's missions have been diverse, ranging from communication and earth observation satellites to scientific missions like the **Mars Orbiter Mission (MOM) and Chandrayaan missions.**

NavIC: India's Regional Navigation System

1. **Overview of NavIC:**
   a. NavIC (Navigation with Indian Constellation) is India's regional satellite navigation system, consisting of seven satellites in orbit.
   b. It is designed to provide accurate positioning services over the Indian mainland and up to 1,500 kilometers around it.
2. **Services Provided:**
   a. **Standard Positioning Service (SPS):** Available for all users, providing a location accuracy of up to 20 meters.
   b. **Restricted Service (RS):** A more accurate service for designated users, typically used by the Indian government and defense sectors for critical applications.
3. **Enhanced Accuracy:**
   a. NavIC is known for its high positioning accuracy, especially in India.
      - The system is more reliable in Indian sub-continent regions compared to the Global Positioning System (GPS), which is based on satellites placed in orbits that make signals weaker in certain areas.
   b. The satellites in the NavIC system are placed directly over the Indian region, which ensures better availability of signals, particularly in areas where GPS signals might be weak or obstructed (e.g., valleys, forests).

Click Here for INDEX

4. **Advantages Over GPS:** By being specifically designed for the Indian subcontinent, NavIC offers improved accuracy and signal reliability compared to GPS, especially in difficult geographical locations where GPS might face challenges.



Comparison with Global Navigation Systems

1. India's NavIC is unique as it is the only regional satellite navigation system in the world.
2. Other global systems include the U.S. GPS, Russia's GLONASS, Europe's Galileo, and China's Beidou.
3. Japan's Quasi-Zenith Satellite System (QZSS) enhances GPS signals in its region, but it does not offer the comprehensive regional coverage that NavIC provides for India.

Upcoming Developments

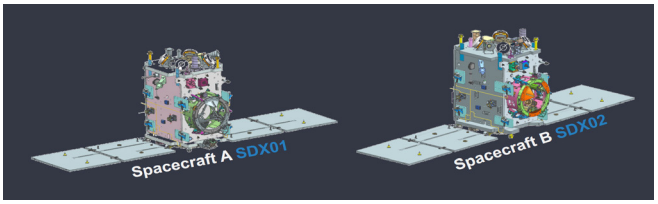
1. **Next Generation Launch Vehicle (NGLV):** ISRO is gearing up for future space missions with the development of the **Next Generation Launch Vehicle (NGLV)**.
   a. The **NGLV will be capable of carrying up to 30,000 kg** to low Earth orbit, significantly more than the current **LVM3's 8,500 kg capacity**.
   b. This rocket will be **91 meters tall**, almost double the size of the LVM3, and will feature a reusable **first stage** to make space missions more cost-effective.
2. **Third Launch Pad for NGLV:** To support the NGLV, ISRO has also received approval to build a Third Launch Pad (TLP). The TLP will enhance ISRO's capacity for heavy commercial and human spaceflight missions.
   - It will also serve as a crucial facility for the Gaganyaan mission, which aims to send Indian astronauts to space.

ISRO's Journey: Milestones and Achievements

1. ISRO traces its roots to the Indian National Committee for Space Research (INCOSPAR), established in 1962 under the Department of Atomic Energy.
2. ISRO itself was officially **formed in 1969**, the **same year** the United States successfully landed **astronauts on the Moon.**
3. Over the years, ISRO has made monumental strides in space exploration, becoming a trusted partner for satellite launches globally.
4. ISRO has developed and operated a series of launch vehicles over the decades.
5. From the early SLV-3, which was capable of carrying only 40 kg to low Earth orbit, to today's powerful GSLV MkIII (LVM3), capable of launching up to 8,500 kg, ISRO's rockets have evolved significantly.
6. Notably, the PSLV has been a workhorse for ISRO, with **62 successful flights** and a **success rate of 97%.**
7. The **GSLV and GSLV MkIII rockets** are also integral to the organization's achievements, with the latter having been used for the Chandrayaan missions.

3. India: 4th Country to Achieve Space Docking

1. **In December 2024**, the Indian Space Research Organisation (ISRO) launched two small spacecraft — **SDX01** (the 'Chaser') and **SDX02** (the 'Target') — into low-Earth orbit, by **PSLV-C60.**
2. The two satellites, **Chaser** and **Target**, each weighing approximately **220 kg**, were the focus of this experiment, known as **Space Docking Experiment (SpaDeX)**.
3. Following the launch, the two satellites were separated by approximately **20 km** in space.
4. Over the course of several days, the **Chaser** progressively approached the **Target**, gradually reducing the distance from **5 km** to **1.5 km**, **500 m**, **225 m**, **15 m**, and finally **3 m**.
5. In **January 2025**, the two satellites successfully docked, marking a major milestone for India, making it the **fourth country** in the world, after the **US**, **Russia**, and **China**, to achieve space docking.



What is Space Docking and Why Is It Important?

1. **Docking** refers to the process where two fast-moving spacecraft are brought into the same orbit and then **manually or autonomously** brought closer together until they are joined.
2. This technology is essential for carrying out complex space missions that involve heavy spacecraft, as a single launch vehicle may not be capable of carrying these spacecrafts into orbit.
3. Docking is also crucial for:
   a. **Setting up a space station**, where separate modules need to be joined in space.
   b. **Carrying crew and supplies** to a space station or other space missions.
4. India's successful docking lays the foundation for future missions such as the **Bharatiya Antariksh Station** (India's space station) and upcoming lunar missions.

Docking and India's Future Mission Plans

The successful docking is critical for India's long-term space ambitions:

1. **Bharatiya Antariksh Station (BAS)**: ISRO aims to set up its own space station by **2035**. The station will be assembled in space by docking five modules. The first robotic module for the station is expected to be launched in **2028**.
2. **Lunar Missions**: India's future lunar mission, **Chandrayaan-4**, aims to bring back samples from the Moon. This mission will involve docking several modules in orbit:
   a. The **propulsion module** will carry the spacecraft from Earth orbit to the Moon orbit.
   b. The **lander** and **ascender** modules will collect the samples from the lunar surface.
   c. The **ascender** module will return with the samples and dock with the **transfer module** in lunar orbit.
   d. The **transfer module** will bring the samples back to Earth orbit, where it will dock with a **re-entry module** designed to withstand the heat of atmospheric re-entry.

This docking technology will also be vital for **human space missions to the Moon by 2040**, with a similar docking process expected for astronauts and equipment.

The Bharatiya Docking System (BDS)

1. The docking system developed by ISRO, known as the **Bharatiya Docking System (BDS)**, is **androgynous**, meaning both the **Chaser and Target satellites** use identical systems.
2. This design is similar to the **International Docking System Standard (IDSS)**, but with fewer motors **(2 compared to 24 in IDSS).**

Key Features of BDS:

1. **Androgynous Design**: Both spacecraft have identical docking mechanisms.
2. **New Sensors**: ISRO used advanced sensors such as **Laser Range Finder**, **Rendezvous Sensor**, and **Proximity and Docking Sensor** for precise measurements during the docking process.
3. **New Processor**: The mission also employed a new processor based on satellite navigation systems, which helped determine the relative position and velocity of the spacecraft.
   - This is a step towards developing an **autonomous docking system** that could operate without satellite-based navigation data in the future.

When was the first docking in space achieved?

Space agencies around the world have achieved significant milestones in space docking technology:

1. **United States (1966)**: NASA's **Gemini VIII** mission was the first to dock with the target vehicle **Agena**. The mission was commanded by **Neil Armstrong**, who would later become the first person to walk on the Moon.
2. **Soviet Union (1967)**: The Soviet Union achieved the first **uncrewed, automated docking** with **Kosmos 186** and **Kosmos 188**.
3. **China (2011)**: China's **Shenzhou 8** spacecraft successfully docked with the **Tiangong 1** space laboratory. A year later, **Shenzhou 9** achieved the first **crewed docking** with the same space laboratory.

Click Here for INDEX

Click Here for INDEX

ISRO's successful space docking experiment is a monumental achievement that places India among an elite group of nations with the capability to perform complex space operations. The successful docking of **SDX01** and **SDX02** using the **Bharatiya Docking System** is crucial not only for India's space station and lunar missions but also for laying the groundwork for future interplanetary missions. This milestone reaffirms ISRO's leadership in space exploration, making it an integral player in global space technology advancements.

4. Scramjet Engine: A Breakthrough in Hypersonic Technology

In January 2025, the **Defence Research and Development Laboratory (DRDL)**, under the **Defence Research and Development Organisation (DRDO)**, successfully conducted a **120-second ground test** of an **active-cooled scramjet combustor** for the first time in India.

Key Highlights from the Test

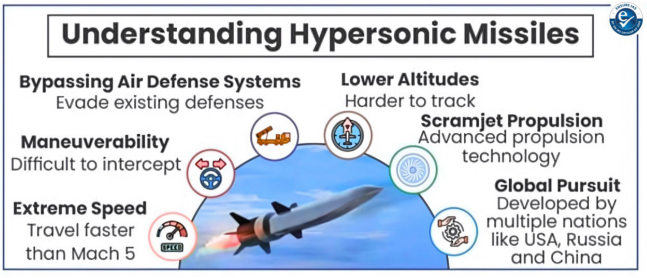
1. **Indigenous Endothermic Fuel**: DRDL, in collaboration with industry partners, developed an indigenous **endothermic scramjet fuel**.
   - This fuel absorbs heat from its surroundings during a chemical reaction, improving the cooling process and easing ignition.
2. **Ceramic Thermal Barrier Coating (TBC)**: A state-of-the-art **Ceramic TBC** was developed jointly by DRDL and the Department of Science and Technology (DST).
   - This coating can withstand extreme temperatures during hypersonic flight, with a thermal resistance high enough to operate beyond the melting point of steel.

Know the term

1. **Jet engine:** Jet engine is an internal-combustion engine that propel aircraft by discharge of a jet of fluid, usually hot exhaust gases generated by burning fuel with air drawn in from the atmosphere.
   - **It is called gas turbines.**
   - **And, it works only within the atmosphere.**
2. **Dual Mode Ramjet (DMRJ):** A type of jet engine where a ramjet transforms into scramjet over Mach 4-8 range, which means, it can efficiently operate both in subsonic and supersonic combustor modes.

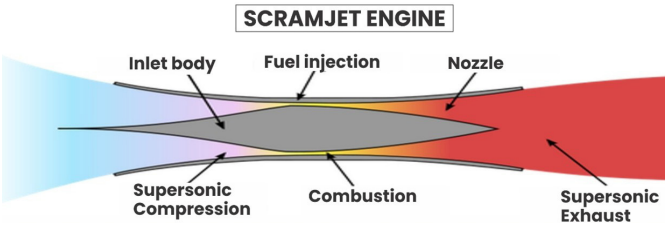
What is a Scramjet Engine?

1. A **scramjet engine** stands for **Supersonic Combusting Ramjet**. It is an advanced air-breathing propulsion system that allows efficient operation at **hypersonic speeds** (Mach 5 and above) and enables **supersonic combustion**.
2. Scramjets are an improvement over traditional **ramjets**, which are simpler air-breathing engines.
   - While ramjets use forward motion to compress air for combustion, scramjets take it a step further by sustaining combustion at supersonic speeds, making them suitable for hypersonic flight.



Working of a Scramjet Engine:

1. **Air Intake**: The vehicle must already be moving at speeds greater than Mach 3 (supersonic) to generate the necessary air compression.
2. **Compression**: The high speed of the vehicle compresses incoming air.
3. **Combustion**: Fuel (usually hydrogen) is injected into the compressed air and ignited, maintaining supersonic airflow.
4. **Thrust Generation**: The hot gases produced from combustion expand and generate thrust, propelling the vehicle forward at hypersonic speeds, in accordance with **Newton's Third Law of Motion**: For every action (force), there is an equal and opposite reaction.



Features of Scramjet Technology

1. **Flame Stabilization**: The scramjet engine uses a technique to stabilize flames inside the combustor, even when airspeed exceeds 1.5 km/s, a process akin to "keeping a candle lit in a hurricane."

2. **Assisted Take-off**: Scramjets cannot generate thrust at zero airspeed. Therefore, they require a **rocket-assisted take-off** to reach the supersonic speeds needed for scramjet operation.

Challenges in Scramjet Development

1. **High-Energy Fuels:** Fuels that provide the necessary energy for sustained combustion.
2. **High Initial Costs:** Significant financial investment required for development
3. **Integration Issues:** Require a launch mechanism to reach operational speeds.
4. **Active Cooling Systems**: Systems that maintain optimal temperatures during operation.
5. **Heat-Resistant Materials**: Materials that can withstand extreme temperatures without degrading

Advantages of Scramjet Technology

1. **Efficiency**: Scramjet engines are more fuel-efficient than traditional rocket engines. While rockets carry both fuel and oxidizer, scramjets rely on atmospheric oxygen for combustion, which reduces the need to carry large amounts of oxidizer.
2. **Cost Reduction in Space Missions**: The reusable nature of jet engines will significantly reduce the cost of space exploration. Scramjet-powered rockets could carry heavier payloads, making space missions more cost-effective.
3. **Higher Speeds**: Scramjets can achieve speeds beyond Mach 6, opening up possibilities for faster space access and hypersonic flight.
4. **Enhanced Deterrence**: Scramjets are critical in the development of **hypersonic missiles** and **reconnaissance aircraft**, enhancing the strategic deterrence capabilities of nations.

Comparison between Scramjet and Ramjet engines:

Feature	Scramjet Engine	Ramjet Engine
Speed Range	Hypersonic (Mach 5 and above)	Supersonic (Mach 3 to Mach 5)
Combustion Type	Supersonic combustion (combustion at supersonic speeds)	Subsonic combustion (combustion at subsonic speeds)
Air Intake	Supersonic speeds (Mach 3+)	Supersonic speeds (Mach 3+)
Airflow in Combustor	Supersonic	Subsonic
Efficiency	More efficient (uses atmospheric oxygen)	Less efficient (requires both fuel and oxidizer)
Operational Altitude	High altitudes (above 80 km)	Medium altitudes (up to 45 km)
Take-off	Requires rocket assistance	Requires rocket assistance
Applications	Hypersonic flight, space exploration, military missiles	Supersonic aircraft, cruise missiles
Development Status	Experimental, under development for hypersonic missions	Established and operational for supersonic flight
Fuel	Primarily hydrogen	Jet fuel or kerosene and liquid oxygen

India's Progress with Scramjet Engines

India has now joined an elite group of nations, including the USA, Russia, and China, that have successfully tested **scramjet engines**. This breakthrough positions India to leverage scramjet technology for **defense and space applications**, with the potential for **hypersonic missiles**, **space exploration**, and **cost-effective satellite launches**.

5. EAST: China's Artificial Sun

1. The **Experimental Advanced Superconducting Tokamak (EAST)**, known as China's **"artificial sun,"** has made significant strides in nuclear fusion research.
2. In January 2025, the EAST reactor achieved a major milestone by maintaining steady-state high-confinement plasma operation for over 1,066 seconds (about 17 minutes), setting a new world record.

Click Here for INDEX

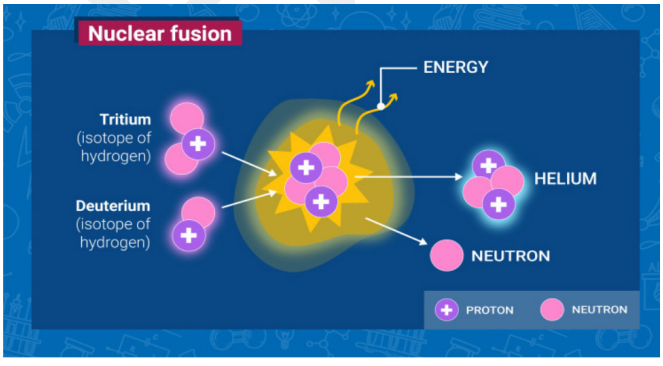
3. This achievement surpassed its previous record of 403 seconds, set in 2023.

Key Achievements of EAST

1. **Temperature Achievement**: During the 2025 operation, EAST reached a temperature of 100 million degrees Celsius, a **necessary condition for nuclear fusion.**
2. However, EAST has not yet conducted fusion reactions or produced electricity. It is focused on sustaining plasma confinement for extended periods, a critical step towards building operational fusion reactors.
3. **International Collaboration**: Since its operation began in 2006, EAST has served as an open test platform for both Chinese and international scientists, allowing them to conduct fusion-related experiments and research.
4. The next goal for fusion reactors is to maintain these extreme conditions for days at a time, which is essential for generating electricity.

Background and History of Nuclear Fusion Research

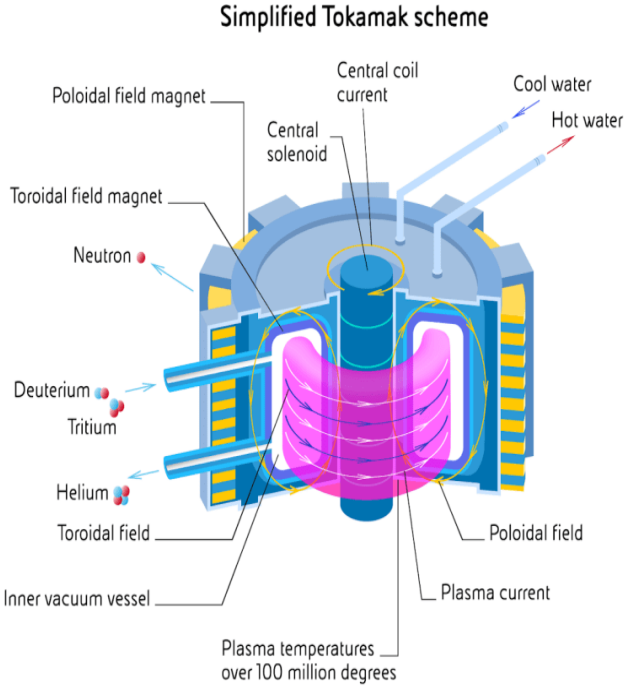
1. **What is Nuclear Fusion?**
   - **a.** Nuclear fusion is the process in which two or more light atomic nuclei combine to form a heavier nucleus, releasing large amounts of energy in the process.
   - **b.** This is the same reaction that powers the Sun and other stars in the universe.
   - **c.** To initiate fusion, the atomic nuclei must be heated to extremely high temperatures and pressures to overcome their natural repulsion.



2. **The Beginning of Fusion Research**
   - **a.** The concept of nuclear fusion has intrigued scientists for centuries, but practical efforts began in the mid-20th century.
   - **b.** In the 1930s, British physicist Mark Oliphant discovered the fusion of deuterium (a hydrogen isotope), leading to the realization that nuclear fusion could potentially serve as a significant energy source.

Key Milestones in Fusion Research

1. **1950s–1960s**: Early research on nuclear fusion focused on two primary methods: magnetic confinement (using magnetic fields to trap plasma) and inertial confinement (using lasers or other techniques to compress plasma).
2. **1954**: Soviet physicists Igor Tamm and Andrei Sakharov proposed the Tokamak, which would later become one of the most important breakthroughs in fusion research.



3. **1970s**: The first experimental fusion reactors using Tokamak technology were developed. The Soviet Union's T-3 Tokamak made significant progress during this time.

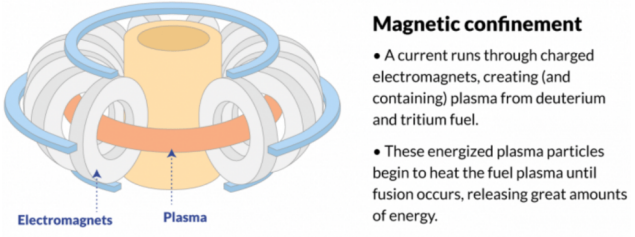
4. **1980s**: The Joint European Torus (JET) in the UK and ITER (International Thermonuclear Experimental Reactor) were launched as part of global efforts to demonstrate that nuclear fusion could be used as an energy source.

How Does Fusion Work in an Artificial Sun?

1. In a fusion reaction, light atomic nuclei merge to form a heavier nucleus, releasing energy because the total mass of the resulting nucleus is less than the mass of the original nuclei. The leftover mass is converted into energy.
2. Hydrogen isotopes (deuterium and tritium) are used to create a plasma state, where the ions and electrons are separated.
3. The plasma is heated to extremely high temperatures to achieve the conditions necessary for nuclear fusion.
4. Achieving stable operation at high efficiency for thousands of seconds is critical for future fusion reactors, as continuous power generation depends on maintaining the self-sustaining circulation of plasma.

Advantages of Fusion Reactors

1. **Abundant Fuel**: Fusion reactors use hydrogen, which is abundant in water from oceans, providing a nearly limitless fuel supply.
2. **Clean Energy**: Fusion is a clean energy source that produces no carbon dioxide.
3. **Minimal Nuclear Waste**: Fusion generates minimal nuclear waste compared to conventional fission reactors.



What is a Tokamak

1. "Tokamak" is an acronym derived from Russian terminology.
2. The acronym comes from "тороидальная камера с магнитными катушками." (toroidal'naya kamera s magnitnymi katushkami).
3. In English, this translates to "toroidal chamber with magnetic coils."
4. The name describes the device's design which consist of doughnut shaped toroidal chamber with magnetic fields for confining and controlling high energy plasma for nuclear fusions .
5. Fusion reactions require extremely high temperatures (hundreds of millions of degrees Celsius), higher than those in the Sun's core.
6. Under such conditions, matter exists only in the plasma state.
7. Plasma is difficult to contain because it is highly unstable, and tiny changes in the magnetic field can disrupt the reaction.
8. The Tokamak uses strong magnetic fields to confine the plasma within a reactor, creating the necessary conditions for fusion.
9. The world's first superconducting tokamak was the T-7, which was developed and built in the Soviet Union. It began operation in 1982 at the Kurchatov Institute of Atomic Energy in Moscow. The T-7 tokamak was a pioneering device in the field of nuclear fusion research, as it was the first to use superconducting magnets to generate the magnetic fields necessary for plasma confinement
10. JT-60 (short for Japan Torus-60) is a large research tokamak, the flagship of the Japanese National Institute for Quantum Science and Technology's fusion energy directorate. As of 2023 the device is known as JT-60SA and is the largest operational superconducting tokamak in the world,

Anatomy of CHINA'S EAST Tokamak: Design and Key Components

It consists of three essential components

1. **Non-Circular Cross-Section**: Non-Circular Cross-Section allows greater flexibility in plasma shaping and optimization.
   - It helps in enhancing plasma confinement efficiency and stability, achieves better control over plasma behaviour, minimizes instabilities prevalent in circular designs.
2. **Fully Superconducting Magnets** Create intense magnetic fields necessary for effective plasma confinement, operate at low temperatures with high efficiency.

Click Here for INDEX

- It helps in reducing power consumption and operational costs, enables extended operational periods, essential for sustained fusion reactions.

3. **Actively Water-Cooled Plasma Facing Components (PFCs) handles** extreme heat flux from the plasma, maintain integrity of the vessel housing the fusion reaction.
   - It ensures components withstand intense heat, prevent damage, allow for longer, continuous operation, critical for practical fusion energy generation.

Comparisons EAST versus Traditional Tokamak

Feature	EAST	Traditional Tokamaks
Coils	Superconducting (Nb3Sn or NbTi)	Copper coils
Operational Mode	Designed for continuous operation with the capability to run for extended periods (up to 1000 seconds or more)	Pulsed operation with short bursts due to coil heating and power limits
Research Goals	Testing steady-state operation for long-term plasma stability	Exploring plasma confinement, heating, and fusion conditions in experimental bursts
Cooling Requirements	Lower during operation due to efficient superconducting coils kept at cryogenic temperatures	High, as copper coils heat up significantly and require cooling between pulses
Technological Innovations	Features like fully superconducting magnets and actively cooled tungsten divertor for long-term operation	Focus on varied plasma configurations and fundamental fusion science, informing newer designs

Tokamak and ITER: The Global Fusion Quest

1. **Tokamak**: This is the most studied and advanced device for nuclear fusion. It uses magnetic fields to confine plasma at extremely high temperatures, mimicking the process that powers the Sun.
2. **ITER**: Launched in 1985, ITER is the largest and most ambitious fusion project, a collaboration between 35 countries, including India, China, Japan, South Korea, Russia, the United States, and the European Union.
   a. ITER aims to demonstrate that controlled fusion can produce more energy than is required to sustain the reaction.
   b. It is designed to generate 500 MW of fusion power from 50 MW of input heating power, with the goal of achieving deuterium-tritium fusion reactions by 2039.
   c. EAST (Experimental Advanced Superconducting Tokamak) and ITER (International Thermonuclear Experimental Reactor) are both cutting-edge tokamak reactors designed to demonstrate the feasibility of nuclear fusion as a practical energy source, but they have distinct characteristics and objectives.

Aspect	EAST	ITER
Location	Located in Hefei, China	Located in Cadarache, France
Objective	Primarily focuses on testing long-term steady-state operation of superconducting tokamaks.	Aims to demonstrate the scientific and technological feasibility of fusion energy for commercial production.
Operational Mode	Capable of sustaining plasma for extended periods, over 1000 seconds in some experiments.	Designed to produce 500 MW of output power for 400 seconds, significantly longer than any previous tokamak.
Magnetic Field	Uses superconducting magnets made from niobium-tin or niobium-titanium.	Utilizes a large-scale superconducting magnet system to confine plasma, employing niobium-tin.

Aspect	EAST	ITER
Scale	Smaller scale compared to ITER, serving as a testbed for technologies and plasma conditions.	One of the largest fusion experiments globally, intended to transition from experimental to potential commercial viability.
Heat Flux Handling	Features an actively cooled tungsten divertor to manage heat flux from the plasma.	Designed with a sophisticated divertor system to handle unprecedented levels of heat flux.
Research Contribution	Contributes significantly to understanding the control and sustainment of plasma over long durations.	Intends to demonstrate net energy gain, where the reactor produces more energy than it consumes.

Click Here for INDEX

What are the challenges in achieving Nuclear Fusion?

1. **Extreme Conditions needed:** Fusion reactions require very high temperatures, hundreds of millions of degrees Celsius — higher than the temperatures in the Sun's core.
2. **Plasma Confinement Issues**: It is difficult to contain or stabilize plasma. Plasma instability (turbulence, disruptions) can shut down the reaction.
3. **High Energy Input compared to Output:** Current experimental reactors consume more energy than they produce. For fusion to be viable there needs to be **net energy gain**, where fusion produces more energy than required to sustain the reaction.
4. **Development issues:**
   a. **High cost of development:** Such as for developing materials that can withstand prolonged exposure to the extreme temperatures and radiation within fusion reactors.
   b. **Long Development Timeline**: Even as per optimistic forecasts producing electricity at a commercial scale using nuclear fusion would not be realised before 2050.

What are other initiatives towards Nuclear Fusion?

1. **Fusion Device Information System (FusDIS) database** (by IAEA): A total of **163 fusion reactors**, in about 30 countries, are currently in operation, under construction, or being planned.
2. **United Kingdom-based JET laboratory** produced about **12 MW of electricity for five seconds**, enough to cater to the demands of about 10,000 homes for that period of time in December 2021.
3. **Lawrence Livermore National Laboratory in California**, USA was the first to achieve a **net energy gain** in 2022.
4. The **Spherical Tokamak for Energy Production (STEP),** a fusion effort being led by the United Kingdom, will generate "first plasma" by 2035 and power electricity by the 2040s.
5. **India:**
   a. The **Institute for Plasma Research (IPR) in Gandhinagar** runs several operational tokamaks like **Aditya** and **Steady State Tokamak (SST) – 1** for fusion research.
   b. IPR is planning the **IN-SPARC demonstration reactor** to achieve **net energy gain** from fusion by 2030. This will employ advanced indigenous technologies.
6. **Effort by Private companies**
   a. **Fusion Outlook 2023 report** (by IAEA): Private companies had invested $6.2 billion in fusion research in 2023. There were at least 43 such companies operating in more than 10 countries.
   b. **Helion**: A US-based company backed by tech billionaires Sam Altman and Peter Thiel, has promised to **generate 50 MW of electricity by 2028**, which will be provided to Microsoft.
   c. **Commonwealth Fusion Systems**: It is collaborating with MIT to generate **400 MW** grid-scale electricity by the early 2030s from a plant it is building in Virginia.

EAST is like a laboratory for advanced fusion research, focusing on the intricacies of plasma management and component endurance over long durations.

Click Here for INDEX

6. India's First Private Satellite Constellation 'Firefly' Launched

1. India's private space-tech company **Pixxel** has achieved a major milestone by launching **India's first private satellite constellation** called **Firefly**.
2. The constellation consists of **six hyperspectral imaging satellites**, which are the highest-resolution commercial hyperspectral satellites to date.

Key Players in Satellite Constellations

1. The **Starlink** constellation, launched by **SpaceX**, is the largest satellite constellation in operation, with over **2,146 active satellites**.
2. It aims to provide global internet coverage, particularly in underserved regions. Pixxel's **Firefly constellation**, though smaller, contributes to Earth observation with a focus on high-resolution hyperspectral imaging.

Successful Launch of the First Three Satellites

1. The first three satellites of the **Firefly constellation** were successfully launched on **SpaceX's Transporter-12 mission** from **Vandenberg Space Force Base**, California.
2. This launch marks the beginning of Pixxel's journey to provide advanced Earth observation capabilities through its innovative satellite constellation.

About Firefly Satellite Constellation

1. **Firefly** is Pixxel's flagship satellite constellation, which is designed to offer cutting-edge **Hyperspectral Imaging (HSI)** capabilities.
2. These satellites will provide detailed and accurate data for a wide range of applications, including agriculture, climate monitoring, and resource management.

Understanding Hyperspectral Imaging (HSI)

1. Hyperspectral Imaging (HSI) is an advanced technology used to analyze a broader range of light spectra than traditional imaging systems.
2. While conventional satellites only capture images in three primary colors (red, green, and blue), HSI satellites capture many more spectral bands across the electromagnetic spectrum, allowing them to "fingerprint" the Earth in much greater detail.
3. This provides more detailed insights about the Earth's surface.

Diverse Applications of HSI

1. Waste Sorting and Recycling
2. Agriculture and Vegetation
3. Food Quality and Safety
4. Environmental Monitoring
5. Mineral Exploration

Benefits of HSI:

1. Traditional satellites can identify broad features like forests or water bodies, while **HSI** can go deeper, distinguishing between different **types of trees** and even determining the **health** of individual trees.
2. This capability enables more precise monitoring and analysis, offering a deeper understanding of environmental, agricultural, and industrial phenomena.

What is a Satellite Constellation?

A **satellite constellation** refers to a network of **identical satellites** working together for a common purpose. These satellites are typically controlled together, and they communicate with ground stations, sometimes even interconnecting to enhance their overall function.

Key Features of Satellite Constellations:

1. They work as a system to achieve a specific goal, such as providing global communications, Earth observation, or navigation services.
2. Constellations are often designed to complement each other's functions, ensuring more comprehensive and reliable service coverage.

Types of Satellite Orbits

Satellite constellations can be placed in different orbits, depending on their purpose. There are three primary types of orbits, each serving a distinct function:

1. **Geostationary Orbit (GEO):**
   a. Altitude: **36,000 km**
   b. Function: Satellites in GEO orbit synchronize with the Earth's rotation, making them ideal for communications, weather monitoring, and broadcasting services.
2. **Medium Earth Orbit (MEO):**
   a. Altitude: Between **5,000 to 20,000 km**
   b. Function: MEO satellites are commonly used for **navigation** purposes, such as GPS and other satellite-based positioning systems.

3. **Low Earth Orbit (LEO):**
   a. Altitude: Between **500 to 1,200 km**
   b. Function: LEO satellites support a variety of applications, including **research**, **telecommunications**, and **Earth observation**.
      - This is the orbit in which Pixxel's **Firefly** satellites operate, enabling high-resolution imaging for applications like agriculture, climate monitoring, and environmental monitoring.

7. Framework for Artificial Intelligence Diffusion

Recently the US Administration released **'Framework for Artificial Intelligence Diffusion',** which aims to establish export and security regulations for the **global AI market.**

- Under the framework, **certain restrictions are imposed on India for import of GPUs** unless the computing power is hosted in secure environments.

About the Framework for AI Diffusion

1. It **seeks to control the spread of advanced AI technology** in a manner that promotes its potential economic and **social benefits, while also protecting U.S. interests.**
2. **Built on 3-part strategy:**
   a. **Exceptions for certain allies and partners** for the export, re-export to certain set of allies;
   b. **Exceptions for supply chains** to allow export of advanced computing chips;
   c. **Low volume exceptions** to allow limited amounts of compute to flow globally, except to arms-embargoed countries.

8. Digantara's SCOT Mission

1. On January 14, 2025, Indian space startup **Digantara** successful launched its **Space Camera for Object Tracking (SCOT) mission**.
2. This marks a significant advancement in **Space Situational Awareness (SSA)**, enhancing India's ability to monitor and track objects in **Low Earth Orbit (LEO)**.
3. Launched aboard **SpaceX's Transporter-12 rocket** from **Vandenberg Space Force Base, California**, SCOT is one of the world's first commercial SSA satellites.

Mission Overview & Technological Capabilities

1. The SCOT satellite is designed to **track Resident Space Objects (RSOs)** with high precision.
2. Unlike traditional tracking systems, it can detect objects **as small as 5 cm**, offering superior **revisit rates and tracking accuracy**.
3. Operating in a **sun-synchronous orbit**, SCOT overcomes **geographical and weather-related limitations** faced by ground-based tracking systems.
4. This advanced positioning enhances its ability to monitor space traffic and provide real-time surveillance data.

Funding, Support & Recognition

1. The mission is backed by **Aditya Birla Ventures and SIDBI**, emphasizing the growing private sector contribution to India's space industry.
2. Following the successful launch, **Prime Minister Narendra Modi** congratulated Digantara on **National Startup Day**, highlighting its role in bolstering India's space capabilities.
3. Industry experts and political leaders also praised the initiative, recognizing its significance in **national security and space operations**.

India's Growing Space Sector & Related Developments

1. SCOT's launch was part of a broader wave of advancements in India's private space sector. Alongside Digantara's satellite, Bengaluru-based **Pixxel** deployed **three satellites from its Firefly constellation**, demonstrating India's increasing presence in **Earth observation and space surveillance**.
2. These developments mark a new era where **private companies actively contribute to India's expanding space ecosystem**.

Space Situational Awareness (SSA): A Critical Need

1. **Understanding SSA**
   a. Space Situational Awareness (SSA) refers to the ability to **monitor, track, and predict the movement of objects in space**.

Click Here for INDEX

b. It plays a vital role in preventing **collisions, managing space traffic, and ensuring the safety of space assets**. SSA is essential for both **government and private entities**, as space becomes increasingly congested with **satellites, debris, and emerging commercial activities**.

2. **Key Components of SSA**
   a. **Tracking & Monitoring** – Identifying and following **satellites, debris, and RSOs** in orbit.
   b. **Prediction & Analysis** – Assessing potential **collision risks** and forecasting orbital movements.
   c. **Communication & Coordination** – Sharing space data between **government agencies, commercial firms, and global partners**.

Challenges in SSA

Despite its importance, SSA faces several challenges:

1. **Growing Space Debris:** The increasing number of satellites and defunct objects raises **collision risks**.
2. **Limited Observation Coverage:** Many existing tracking systems **lack global reach**, reducing monitoring effectiveness.
3. **Cybersecurity Threats:** As space assets become more connected, they face risks from **hacking and cyberattacks**.

SSA Technologies & Advancements

To address these challenges, advanced technologies are shaping the future of SSA:

1. **Ground-Based Radars & Telescopes** – Used for **real-time object detection**.
2. **AI & Machine Learning** – Enhancing **tracking accuracy** and **predictive analytics**.
3. **Satellite-Based Sensors** – Providing continuous **in-orbit surveillance**.

India's Role in SSA

1. India has been actively strengthening its SSA capabilities through both **government and private initiatives**.
2. The **Indian Space Research Organisation (ISRO)** is developing the **Netra project**, a dedicated SSA program aimed at **space debris tracking**.
3. Meanwhile, private companies like **Digantara** are launching **specialized satellites** to enhance **space object surveillance and traffic management**.

Key Objectives of SSA

SSA serves multiple critical functions beyond just tracking space objects. Some of its primary objectives include:

1. **Collision Avoidance:** SSA plays a crucial role in **preventing accidental crashes** between operational satellites and space debris. By providing **real-time alerts**, it ensures **safer navigation** in orbit.
2. **Space Weather Monitoring:** Monitoring **solar activity and geomagnetic storms** is essential to protecting **satellites, power grids, and communication systems** from **solar radiation effects**.
3. **Satellite Health & Anomaly Detection:** SSA helps in tracking **spacecraft performance** and detecting **potential malfunctions or cyber threats**, ensuring the longevity and security of space missions.
4. **Defense & National Security:** With increasing concerns over **anti-satellite (ASAT) weapons**, SSA enhances **military surveillance** and intelligence gathering, safeguarding national security interests.
5. **Space Traffic Coordination:** As satellite constellations grow, **managing orbital traffic** becomes vital. SSA helps in **regulating satellite movements** and **avoiding congested regions in space**.
6. **Mission Support for Spacecraft & Space Stations:** SSA provides **real-time data** for **mission planning, docking, and station operations**, assisting astronauts and automated systems in space.
7. **Compliance with International Space Policies:** SSA ensures that all space activities align with **global space treaties and regulations**, promoting responsible and sustainable space exploration.
8. **Active Debris Removal Planning:** Identifying **high-risk debris** allows for targeted removal efforts, supporting research on **technologies like robotic arms, nets, and lasers** for cleaning space junk.
9. **Deep Space Object Detection & Planetary Defense:** SSA extends beyond Earth's orbit to monitor **asteroids and near-Earth objects (NEOs)**, aiding in **planetary defense initiatives** against potential impact threats.
10. **Strengthening Global Space Governance:** By fostering **collaboration between international space agencies and private sector players**, SSA promotes **data sharing and cooperative efforts** for safer space operations.

key **Space Situational Awareness (SSA) missions** across different countries:

Country/Agency	Mission/Program	Objective
United States (USA)	**Space Surveillance Network (SSN)**	Tracks satellites and space debris.
	Geosynchronous Space Situational Awareness Program (GSSAP)	Monitors objects in geostationary orbit (GEO).
	Space-Based Space Surveillance (SBSS)	Observes space objects without atmospheric interference.
	Cislunar Highway Patrol System (CHPS)	Tracks objects beyond GEO, including lunar orbit.
European Union (EU)	**EU Space Surveillance and Tracking (EUSST)**	Detects and monitors space debris and collision risks.
	ESA's Space Debris Office	Develops SSA capabilities and debris mitigation strategies.
	Asteroid Impact & Deflection Assessment (AIDA)	Studies asteroid threats and planetary defense.
India (ISRO & Private Sector)	**Project NETRA (Network for Space Object Tracking and Analysis)**	Tracks space debris and active satellites.
	SCOT (Space Camera for Object Tracking) – Digantara	India's first commercial SSA satellite for LEO tracking.
Russia	**Okno (Optical-Electronic Complex)**	Ground-based system for tracking space objects.
	Krona Radar System	Monitors space debris and provides military intelligence.
China	**Yaogan Satellite Series**	Surveillance and reconnaissance for SSA and military use.
	SKYNET	Network of satellites supporting SSA operations.
Japan (JAXA)	**Space Situational Awareness System**	Monitors space debris and collision threats.
	Epsilon Rocket Missions	Tests SSA and space monitoring technologies.
Global & Collaborative Efforts	**International Lunar Research Station (ILRS - China/Russia)**	Tracks lunar activities and space sustainability.
	DART (Double Asteroid Redirection Test - NASA)	Planetary defense mission studying asteroid deflection.
	Inter-Agency Space Debris Coordination Committee (IADC)	International initiative for space debris tracking.

Future of SSA & Next Steps for Digantara

1. Looking ahead, the future of SSA will see **rapid advancements in AI, automation, and active debris removal technologies**.
2. As more countries and private firms invest in **space tracking and surveillance**, SSA will play a **pivotal role in ensuring sustainable and secure space operations**.
3. For Digantara, the next steps involve **commissioning the SCOT satellite** for precise object tracking and **fine-tuning its capabilities** for **optimal performance** in the coming weeks.
4. With continued innovation, Digantara aims to **enhance space safety, support global SSA initiatives, and position India as a leader in space situational awareness**.

Click Here for INDEX

9. Scientists Breed Mice Without a Mother

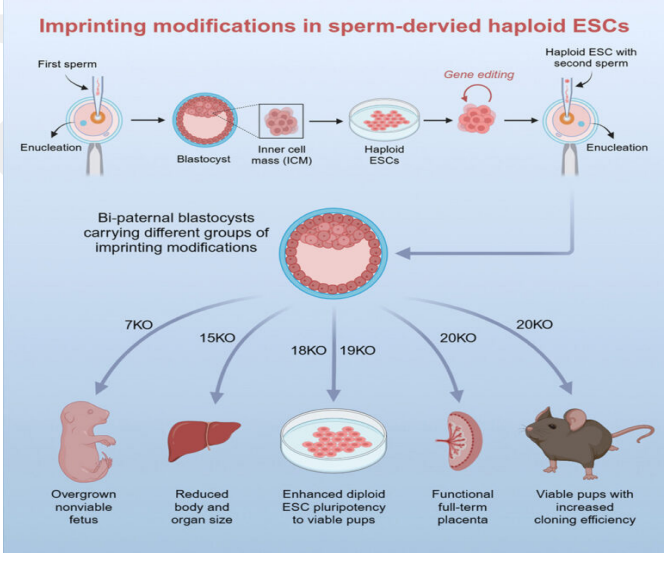
Recently, scientists in China have successfully bred baby mice using **DNA from two male parents** through **stem cell technology**.

What is Stem Cell Technology?

1. **Stem Cells:** Stem cells are unique cells that have the ability to develop into many different types of cells in the body. They are the only cells capable of generating specialized cells, such as muscle, nerve, or blood cells.
2. **Stem Cell Technology:** This refers to the use of stem cells to repair or regenerate tissues and organs, offering vast potential for medical applications, including **treatments for diseases** and **organ regeneration**.

How Was It Made Possible?

1. **CRISPR Technology:** The team used **CRISPR**—a powerful gene-editing tool that allows for precise modifications in DNA. It stands for **Clustered Regularly Interspaced Short Palindromic Repeats** and acts like molecular scissors to edit genes in living organisms.
2. **Imprinting and Gene Expression:** Normally, during fertilization, when a male sperm fertilizes a female egg, there is a **duplication of genes**. For proper embryo development, one copy of each gene is typically silenced. However, when genetic material comes from two male parents, there is a risk of **double silencing** of genes, which could lead to developmental issues. This is known as **imprinting abnormality**.
   - **Imprinted Genes:** These are genes that are expressed differently depending on their parental origin (from the father or mother).
3. **Overcoming Imprinting Abnormality:** The team faced the challenge of **imprinting**, where genes from two sperm would both be silenced, leading to developmental problems. To overcome this:
   - **Gene Editing:** The team used **CRISPR** to **knock out** 20 imprinted genes in the sperm, removing the silencing effect and making the genetic material suitable for embryo development.
4. **Creating the Embryo:**
   a. The team cultured cells with sperm DNA to collect **stem cells** in the laboratory.
   b. They then used **CRISPR** to modify the 20 imprinted genes.
   c. These modified cells were then injected into **egg cells** that had their own nuclei removed, effectively replacing the female egg's genetic material with the DNA from two male mice.
5. **Creating a Placenta:** Since male cells lack the ability to form a placenta, an **embryo shell** was used in the experiment. This provided the necessary cells to create a placenta, which is essential for the nutrients and protection of the embryo.
6. **Transferring the Embryo:** The resulting embryos were then implanted into the uterus of **female mice**, where they developed into baby mice.
7. **Ensuring Success:** Before fertilization, the imprinting genes were modified to ensure that only one copy of each gene was expressed in the offspring. This improved the success rate for producing **bi-paternal** mice.



Impact of the Study

On Healthcare:

1. **Imprinting Disorders:** This research could help scientists **treat and develop drugs** for genetic disorders related to imprinting, where abnormal gene expression leads to diseases.
2. **Understanding Genetic Disorders:** The findings will contribute to a better understanding of various **genetic disorders** and could pave the way for cures or therapies.

3. **Stem Cell and Regenerative Medicine:** It also addresses some **limitations** in **stem cell** and **regenerative medicine** research, especially in applications like **organ transplantation**.

On Ecology:

1. **Livestock Breeding:** The techniques developed could revolutionize **livestock breeding**, enabling the selection of desirable traits in animals.
2. **Conservation of Endangered Species:** The research could also help **save critically endangered species**, such as the **northern white rhino**, by enabling reproductive technologies that do not rely on female eggs.

On Social Implications:

This breakthrough opens new possibilities for **gay male couples** or even **single men** to have biological children without needing a female egg, thus potentially altering the landscape of reproductive technologies in the future.

Ethical and Technical Concerns

While the achievement is groundbreaking, experts have raised concerns regarding the **ethical and technical** aspects of applying this method to humans.

Technical Concerns:

1. **Sperm Cells Specialization:** Mature sperm cells are highly specialized and are difficult to revert into other types of cells. This limits their potential for gene editing and development.
2. **Unestablished Lab Procedures:** Many of the **lab techniques** used in this study have not yet been refined for use with human cells, making human applications highly uncertain.
3. **Low Success Rate:** The success rate of creating viable embryos using this method is extremely low. In the study, nearly **90% of embryos** did not make it to birth, highlighting the method's current limitations.

Ethical Concerns:

1. **Animal Rights:** The use of animals in experiments where only a few survive and those that do often develop **disorders** raises significant ethical questions about **animal welfare**.
2. **Risk in Human Research:** The **low success rate** makes it **unethical** to attempt similar research on humans, as the risks are too high. **Human embryos** could suffer from significant health issues.
3. **Health Consequences: Knocking out genes** in human cells could lead to **unknown health consequences**. The long-term effects are largely unpredictable.
4. **Interference with Natural Laws:** This technology might be seen as **interfering with nature**, raising concerns about the potential **societal and moral consequences** of altering human reproduction at such a fundamental level.

10. Injectable Hydrogel for Targeted Cancer Treatment

1. In January 2025, researchers from the **Indian Institute of Technology-Guwahati (IIT-G)** and the **Bose Institute, Kolkata** have developed a **injectable hydrogel aimed at revolutionizing localized cancer treatment**.
2. This innovative technology promises to deliver **anti-cancer drugs** directly to **tumour sites**, reducing harmful side effects associated with conventional treatments like chemotherapy and surgery.
3. The research findings, particularly relevant to **breast cancer therapy**, have been published in the prestigious journal ***Materials Horizons***.

What Are Hydrogels?

1. Hydrogels are **water-based polymer networks** with a **three-dimensional structure** capable of absorbing and retaining large amounts of fluid.
2. These jelly-like substances can **occur naturally or be synthesized** in laboratories. Their unique properties make them versatile tools for various biomedical and industrial applications.
3. **Key Properties:**
   a. **Hydrophilic**: Absorb and retain water.
   b. **Biocompatible**: Non-toxic and safe for biological environments.
   c. **Biodegradable**: Break down naturally without adverse effects.
   d. **Flexible and Semi-Permeable**: Can adapt to biological environments while allowing selective substance exchange.
4. **Applications:**
   a. Biomedical: Drug delivery systems, tissue engineering, regenerative medicine, and wound healing patches.

Click Here for INDEX

b. **Environmental**: Wastewater treatment and moisture retention in agriculture.
c. **Technological**: Soft robotics, contact lenses, hydrogel-based batteries, and cooling systems.

Key Features of the Hydrogel

1. **Localized Drug Delivery**: Ensures precise targeting of cancer cells without affecting healthy tissues. Acts only at the tumour site, avoiding systemic circulation.
   - It remains insoluble in biological fluids, ensuring precise localization and avoiding systemic circulation.
2. **Responsive Design**: The hydrogel responds to **elevated levels of glutathione (GSH)**, a molecule abundant in tumour cells.
   - Upon detecting GSH, it triggers a **controlled release of the drug**, ensuring action only where needed.
3. **Biocompatibility and Stability**: Composed of **ultra-short peptides**, the hydrogel is biodegradable and mimics the structure of living tissues, integrating seamlessly with the biological environment.
4. **Enhanced Effectiveness:** Preclinical trials have demonstrated that the hydrogel significantly enhances drug uptake by cancer cells, inducing **cell cycle arrest** and **promoting programmed cell death (apoptosis)**.

Mechanism of Action

The hydrogel targets tumours through a smart mechanism that leverages the unique chemical environment of cancer cells:

1. **Detection of High GSH Levels**: Tumour cells typically exhibit elevated GSH levels compared to normal cells. The hydrogel responds to this by triggering the release of the anti-cancer drug.
2. **Precision Delivery**: This ensures the drug acts only at the tumour site, significantly minimizing side effects like nausea, fatigue, and immune suppression, commonly associated with chemotherapy.
3. **Enhanced Drug Uptake**: The hydrogel promotes better drug absorption by cancer cells, inducing cell cycle arrest and programmed cell death (**apoptosis**), which disrupts tumour growth from multiple angles.

Preclinical Success

1. Preclinical Trials conducted on a murine model of breast cancer and the hydrogel delivered the chemotherapy drug **Doxorubicin**.
2. Results showed a **75% reduction in tumour size within 18 days** of a single injection.
3. The drug remained localized at the tumour site, with no detectable side effects on other organs.

Advantages Over Traditional Treatments

1. **Minimized Side Effects:** Traditional chemotherapy impacts both cancerous and healthy cells, causing systemic side effects. The hydrogel mitigates this by targeting only the tumour cells.
2. **Enhanced Precision:** Localized action reduces damage to surrounding healthy tissues and increases treatment efficacy.
3. **Improved Patient Outcomes:** Personalized and localized treatment enhances patient comfort and reduces the risks associated with invasive surgeries or systemic chemotherapy.

Broader Implications

1. Beyond breast cancer, this injectable hydrogel holds immense potential for advancing the field of personalized and localized medicine.
2. Its innovative approach could be adapted for other diseases requiring precise drug delivery systems.
3. Additionally, the technology reinforces the growing importance of hydrogels in addressing critical biomedical challenges.

11. India's First Robotic System Performs Telesurgeries

1. India's indigenous Surgical robotic system, **SSI** Mantra, performed two world-**first robotic cardiac telesurgeries** with **latency of only 40 milliseconds.**
   - **Telesurgery** uses robotics and cameras to allow surgeons to perform operations from any location with a high-speed data connection.
2. These revolutionary surgeries connected **SS Innovations' headquarters in Gurugram** with **Manipal Hospital in Jaipur**, covering a distance of **286 kilometers**.
3. This breakthrough highlights the transformative potential of telesurgery in delivering **precision-driven, remote-controlled surgical interventions**.

Two critical robotic telesurgeries were successfully performed:

1. Telerobotic-Assisted Internal Mammary Artery Harvesting

- **Completion Time:** 58 minutes
- **Latency:** 35–40 milliseconds (equivalent to 1/20th of a second)

2. Robotic Beating Heart Totally Endoscopic Coronary Artery Bypass (TECAB)

- **One of the most complex cardiac surgeries**
- **Latency:** 40 milliseconds

Technological Advancements Needed for Telesurgeries

While this achievement is a major step forward, further **technological enhancements** are essential to refine and expand the scope of telesurgeries.

Challenge	Solution
Ultra-Low Latency Communication	• 5G & 6G networks for near-instant data transmission. • Satellite-based internet (e.g., Starlink, BharatNet) for uninterrupted connectivity. • Edge computing & AI-driven network optimization to reduce data delays.
AI & Machine Learning Integration	• AI-powered robotic assistance for real-time error correction. • Machine learning-based predictive analytics for complications. • AI-enhanced image processing for better visualization.
Haptic Feedback & Tactile Sensation	• Advanced haptic gloves & sensors to replicate resistance/ texture sensation. • AI-driven force feedback for delicate tissue handling.
High-Resolution 3D & AR/VR Visualization	• 4K/8K 3D imaging for detailed visuals. • AR overlays to highlight key anatomical structures. • VR integration for immersive remote surgical training.
Cybersecurity & Data Encryption	• End-to-end encryption & blockchain for patient data security. • AI-driven cybersecurity protocols to prevent unauthorized access. • Regulatory compliance frameworks to ensure safety.
Remote Power & Infrastructure Support	• UPS systems & battery backups for emergency power. • IoT-based remote diagnostics for predicting hardware failures. • Cloud-based failover mechanisms for uninterrupted connectivity.
Cost Reduction & Accessibility	• Government funding & public-private partnerships to subsidize telesurgery. • Scalable robotic systems with modular components to reduce costs. • Open-source software to make telesurgery more affordable.

Indian Initiatives to Integrate Robotics in Healthcare

1. **National Health Policy, 2017:** Recognizes the significant role of technology in healthcare delivery.
2. **Draft National Strategy on Robotics, 2023:** It emphasised promotion of robotics including in healthcare and provides for setting up of the Robotics Innovation Unit (RIU).
3. **Other:** Artificial Intelligence & Robotics Technology Park (ARTPARK) in IISc Bengaluru.

12. WHO's Guideline on the Use of Lower-Sodium Salt Substitutes (LSSS)

1. On January 27, 2025, The **World Health Organization (WHO) released new guidelines recommending the use of lower-sodium salt substitutes that contain potassium**.
2. These guidelines are aimed at helping adults reduce their sodium intake to improve **heart health** and lower the risk of **high blood pressure** and **cardiovascular diseases (CVDs)**.

Click Here for INDEX

3. This **recommendation is not for pregnant women, children, or individuals with kidney issues.**
4. **Importantly**, these recommendations **do not apply to packaged** snacks and foods eaten at restaurants and cafeterias — which account for a big chunk of the daily sodium intake.

What Are Lower-Sodium Salt Substitutes (LSSS)?

1. **LSSS are alternatives to regular table salt.**
2. They contain **less sodium** and often use **potassium chloride** as a **substitute for part of the sodium chloride.**
3. These substitutes can provide a **similar taste to regular salt while lowering sodium intake.**
4. Using LSSS instead of regular salt can lower sodium consumption and potentially help reduce **blood pressure**.
5. **Replacing some sodium with potassium might also have benefits for heart** health because potassium helps manage blood pressure.

What are the WHO's New Guideline on LSSS

1. **First,** WHO recommends limiting sodium intake to less than **2 grams per day** (which is equivalent to about 5 grams of salt) for adults.
2. **Second,** it recommends **doing away with table salt** as it continues to be one of the best ways of cutting down sodium intake.
3. **Third** and newest guideline asks users to **partially replace table** salt with potassium.

This guideline is based on scientific research and aims to provide clear, practical recommendations for using LSSS in a way that maximizes health benefits and minimizes risks.

The new recommendation, however, **does not apply to** women, children, or people living with kidney impairments. There wasn't enough data to suggest the use of potassium-based salts in these groups.

Why is the guideline important?

1. It is extremely important for India, considering the significant burden of hypertension, heart attacks and strokes, even in younger age groups.
2. Nearly 35.5 per cent of the country's population — or 315 million people — are estimated to be living with **hypertension** in India, according to the INDIAB study.
3. **Cardiovascular diseases** accounted for 28.1 per cent of the total deaths in India in 2016, according to an analysis of the Global Burden of Disease study.

Safety Concerns with LSSS

1. One concern with LSSS, especially those containing potassium, is that they could cause **hyperkalemia** (too much potassium in the blood).
2. This can be dangerous, particularly for people with **kidney problems**, as their kidneys may struggle to remove excess potassium. While LSSS can **help lower sodium intake, it's important to ensure that the levels of potassium are safe for everyone.**
3. This is why WHO's new guideline will provide advice on how to use LSSS safely.

About WHO:

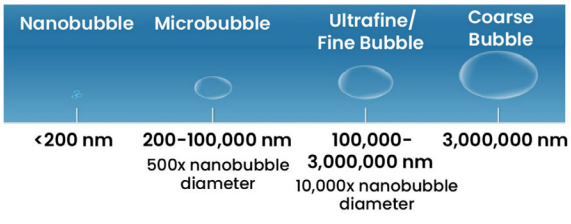
1. **Founded in 1948, WHO is the United Nations agency that connects nations, partners and people to promote health**, keep the world safe and serve the vulnerable – so everyone, everywhere can attain the highest level of health.
2. **WHO leads global efforts to expand universal health coverage**.
3. WHO directs and coordinates the **world's response to health emergencies.**

13. Nano Bubble Technology

Union Minister of State for Environment launched 'Nano Bubble Technology' for cleaning and purifying water of National Zoological Park, Delhi.

About the Nano Bubble Technology

1. **Nanobubbles:** They are 70-120 nanometers in size, **2500 times smaller than a single grain of salt.**
   - a. Nanobubbles have a **strong negative surface charge** that prevents them from **coalescing** and
     - i. It also **enables them to physically separate small particles** and droplets like emulsified fats, oils, and grease from water.
   - b. Hydrophobic nature of nanobubbles combined with their surface charge **enable lifting organic and inorganic materials off surfaces** similar to surfactants.



Applications of Nano Bubble Technology

Water Purification, Agriculture (Enhance oxygenation of irrigation water), Healthcare, food industry, Industrial cleaning etc.

F. GEOGRAPHY & ENVIRONMENT

Click Here for INDEX

1. Indigenous Hydrogen Train Engine

1. Indian Railway Minister announced the development of a 1,200-horsepower (hp) **hydrogen fuel-run train engine**.
2. India's first and world's most powerful hydrogen train engine**.**
3. Hydrogen-powered trains exist in **only 4 countries**: Germany (1st), France, Sweden, China (500-600 HP).
4. **Designed by:** Research, Design, and Standard Organization (RDSO), Lucknow.
5. **Manufactured by:** Integral Coach Factory (ICF), Chennai.
6. **Project:** Part of the "Hydrogen for Heritage" initiative (2023) to promote sustainable transport.
7. **Union Budget 2023-24:** Allocated funds for 35 hydrogen fuel cell trains.
8. **Retrofitting Plan**: Diesel-Electric Multiple Unit (DEMU) rakes will be converted to run on hydrogen fuel cells.
9. **Trial Route**: The first trial run will take place between **Jind and Sonipat** in Haryana.

Hydrail: Hydrogen-Powered Rail Transportation

The term "hydrail", first introduced in 2003, refers to rail vehicles powered by on-board **hydrogen fuel for propulsion**. This includes:

1. **Hydrogen Trains** – Locomotives that use hydrogen fuel.
2. **Zero-Emission Multiple Units (ZEMUs)** – Rail vehicles designed for clean, sustainable transport.
3. **Hydrogen Fuel Cell Trains** – Trains that generate electricity via hydrogen fuel cells to run electric motors.

How Hydrail Works?

Hydrail vehicles utilize the chemical energy of hydrogen in two main ways:

1. Hydrogen Fuel Cell Technology – Hydrogen reacts with oxygen in a fuel cell, producing electricity to power the traction motors.
2. Hydrogen Internal Combustion Engine (H2-ICE) – Hydrogen is combusted like conventional fuels but with zero carbon emissions.

Difference Between H_2 Internal Combustion Engine (H_2-ICE) and Hydrogen Fuel Cell

Feature	H_2 Internal Combustion Engine (H_2-ICE)	Hydrogen Fuel Cell (HFC)
Working Principle	Burns hydrogen in an internal combustion engine similar to gasoline or diesel engines.	Converts hydrogen into electricity via a **chemical reaction** in a fuel cell to power an electric motor.
Energy Conversion	Converts **chemical energy** (hydrogen) into **mechanical energy** through combustion.	Converts **chemical energy** into **electrical energy**, which then powers **electric motors**.
Efficiency	**Lower (30-40%)** due to heat loss in combustion.	**Higher (50-60%)**, as there is no combustion or heat loss.
Emissions	Almost zero emissions—produces **water vapor** and **small amounts of NO_x** due to high temperatures.	Completely **zero-emission**, producing only **water vapor**.
Fuel Consumption	Consumes **more hydrogen** due to lower efficiency.	Uses **less hydrogen** because of higher efficiency.
Technology Readiness	Easier to integrate into existing internal combustion engines (ICEs).	Requires new infrastructure and fuel cell stack manufacturing.

Click Here for INDEX

Feature	H_2 Internal Combustion Engine (H_2-ICE)	Hydrogen Fuel Cell (HFC)
Maintenance	**Higher**, due to moving parts like pistons, valves, and crankshafts.	**Lower**, as it has fewer moving parts and no combustion process.
Application	Can be used in **modified existing vehicles** (trucks, trains, aircraft, etc.).	Best suited for **electric trains, cars, and buses** requiring high efficiency.
Noise & Vibration	**Louder** (similar to traditional ICEs).	**Quieter**, since it operates like an electric vehicle.
Adoption in Railways	Still in early-stage development for hydrogen-powered trains.	Already implemented in **hydrogen fuel cell trains** (e.g., Germany's Alstom Coradia iLint).

Fuel Cells: A Clean Energy Technology

A **fuel cell** is an electrochemical device that converts chemical energy from a fuel (typically hydrogen) into electricity through a chemical reaction with oxygen, producing only **water and heat** as byproducts.

How a Fuel Cell Works?

1. **Hydrogen Supply** – Hydrogen gas (H_2) is fed into the **anode** side of the fuel cell.
2. **Electrochemical Reaction**:
   a. At the **anode**, a **catalyst** (usually platinum) splits hydrogen molecules into **protons (H^+) and electrons (e^-)**.
   b. **Protons** pass through an **electrolyte membrane** to the cathode.
   c. **Electrons** travel through an external circuit, generating **electricity**.
3. **Oxygen Reaction**: At the **cathode**, oxygen (O_2) from the air combines with protons and electrons to form **water (H_2O)**.
4. **Energy Output** – The generated electricity is used to power **vehicles, homes, or industrial equipment**.

Advantages of Fuel Cells

1. **Zero Emissions** – Produces only water, reducing pollution.
2. **High Efficiency** – Up to **60% efficiency**, compared to ~30% for internal combustion engines.
3. **Silent Operation** – No mechanical noise like traditional engines.
4. **Energy Security** – Can use **renewable hydrogen** from water electrolysis.
5. **Scalability** – Can power anything from **small devices** to **large power plants**.

Challenges of Fuel Cells

1. **High Cost** – Platinum-based catalysts and infrastructure development are expensive.
2. **Hydrogen Storage & Transport** – Requires high-pressure tanks or liquid hydrogen, which pose logistical challenges.
3. **Limited Hydrogen Infrastructure** – Few hydrogen refueling stations worldwide
4. **Energy Losses** – Hydrogen production (electrolysis) and storage lead to energy conversion losses.

Types Of Fuel Cells and Their Characteristics:

Fuel Cell Type	Science Behind It	Best For
Proton Exchange Membrane Fuel Cell (PEMFC)	Uses a **polymer electrolyte membrane** to allow protons to pass while electrons generate electricity externally. Operates at low temperatures with quick startup.	Cars, buses, trains, portable power
Solid Oxide Fuel Cell (SOFC)	Uses a **ceramic electrolyte** that conducts oxygen ions at high temperatures. Highly efficient but requires thermal management.	Stationary power plants, industrial applications
Alkaline Fuel Cell (AFC)	Uses **potassium hydroxide (KOH) electrolyte**, enabling fast reactions. Requires pure hydrogen to prevent CO_2 contamination.	Space applications (NASA spacecraft)

Fuel Cell Type	Science Behind It	Best For
Phosphoric Acid Fuel Cell (PAFC)	Uses **phosphoric acid electrolyte**, allowing efficient operation at moderate temperatures. Suitable for stationary power applications.	Large-scale power generation (hospitals, data centers)
Molten Carbonate Fuel Cell (MCFC)	Uses **molten carbonate salts** as an electrolyte to transport carbonate ions. Can utilize natural gas, making it ideal for large-scale power.	Power plants, ships, industrial uses

Global Hydrogen Initiatives

Countries worldwide are investing in hydrogen-based energy solutions. Some key initiatives include:

1. World Bank's 10 GW Clean Hydrogen Initiative: Supports clean hydrogen adoption in emerging markets.
2. Clean Energy Ministerial (CEM) Hydrogen Initiative: India is an active participant in this initiative aimed at global hydrogen deployment.
3. Global Programme for Hydrogen in Industry (GPHI): Launched by UNIDO in 2021 to assist developing nations in hydrogen adoption.

India's Initiatives for Hydrogen

1. **National Green Hydrogen Mission (NGHM):** Targets 5 million metric tonnes of hydrogen production per year by 2030.
2. **Green Hydrogen Standards (August 2023):** Defines emission thresholds for 'green' hydrogen classification.
3. **Pilot Projects:** Hydrogen fuel applications in shipping and steel industries.
4. **MoU with Saudi Arabia (September 2023):** Agreement for cooperation in green hydrogen & ammonia production.

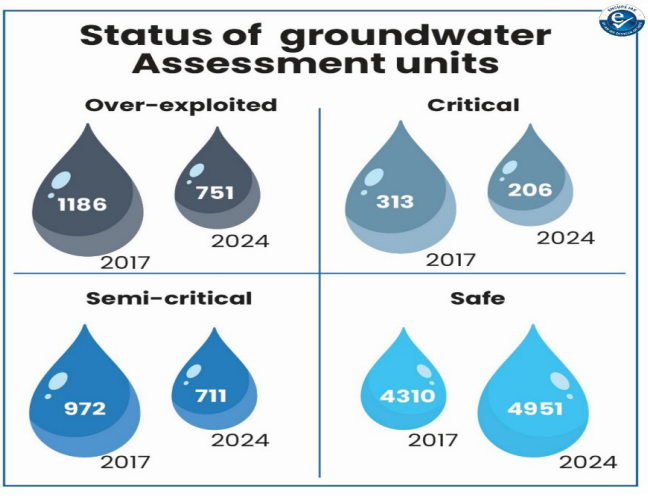
India's indigenous hydrogen train **marks a** revolutionary step **towards** sustainable, clean, and green transportation**. With** government support, technological advancements, and global collaboration**, hydrogen-powered trains can** significantly reduce carbon emissions **and** establish India as a leader in hydrail technology**.**

2. Annual Ground Water Quality Report, 2024

1. In January 2025, the Central Ground Water Board (CGWB) released the Annual Ground Water Quality Report for 2024.
2. The report highlights a significant rise in groundwater contamination across India, particularly with increasing nitrate levels and other harmful contaminants like fluoride, uranium, and arsenic.

Key Findings on Groundwater Quality in India

1. **Groundwater Usage**
   a. India is the largest user of groundwater, with the largest area under groundwater irrigation in the world.
   b. 87% of the extracted groundwater is used for agriculture, and 11% is used for domestic purposes.
2. **Groundwater Extraction Categories**
   a. **Safe (<70%)**: Most states/UTs, including Andhra Pradesh, Assam, Bihar, and Maharashtra.
   b. **Semi-Critical (70-90%)**: Tamil Nadu, Uttar Pradesh, Puducherry, and Chandigarh.
   c. **Over-Exploited (>100%)**: Punjab, Rajasthan, Dadra & Nagar Haveli, Daman & Diu, Haryana, and Delhi.
   d. **Critical (90-100%)**: No states/UTs.
3. **Recharge and Extraction**: Total annual groundwater recharge has increased by 15 BCM, and extraction has declined by 3 BCM from the 2017 assessment.



Click Here for INDEX

4. **Chemical Composition**
   a. **Cations**: Calcium dominates, followed by sodium and potassium.
   b. **Anions**: Bicarbonate is most prevalent, followed by chloride and sulfate.
   c. **Agricultural Suitability**: Over 81% of groundwater samples are safe for irrigation, though some areas have high Sodium Absorption Rate (SAR) and Residual Sodium Carbonate (RSC) levels, requiring interventions to prevent soil degradation.
5. **Regional Variations**
   a. **Clean Water**: 100% of samples met BIS standards in Arunachal Pradesh, Mizoram, Meghalaya, and Jammu & Kashmir.
   b. **Contaminated Regions**: Rajasthan, Haryana, and Andhra Pradesh face widespread contamination. Barmer and Jodhpur in Rajasthan show increasing salinity.
6. **Seasonal Trends**: Monsoon recharge has a positive effect on water quality, improving electrical conductivity (EC) and fluoride levels.

Rising Nitrate Contamination

The CGWB report shows a troubling rise in nitrate contamination:

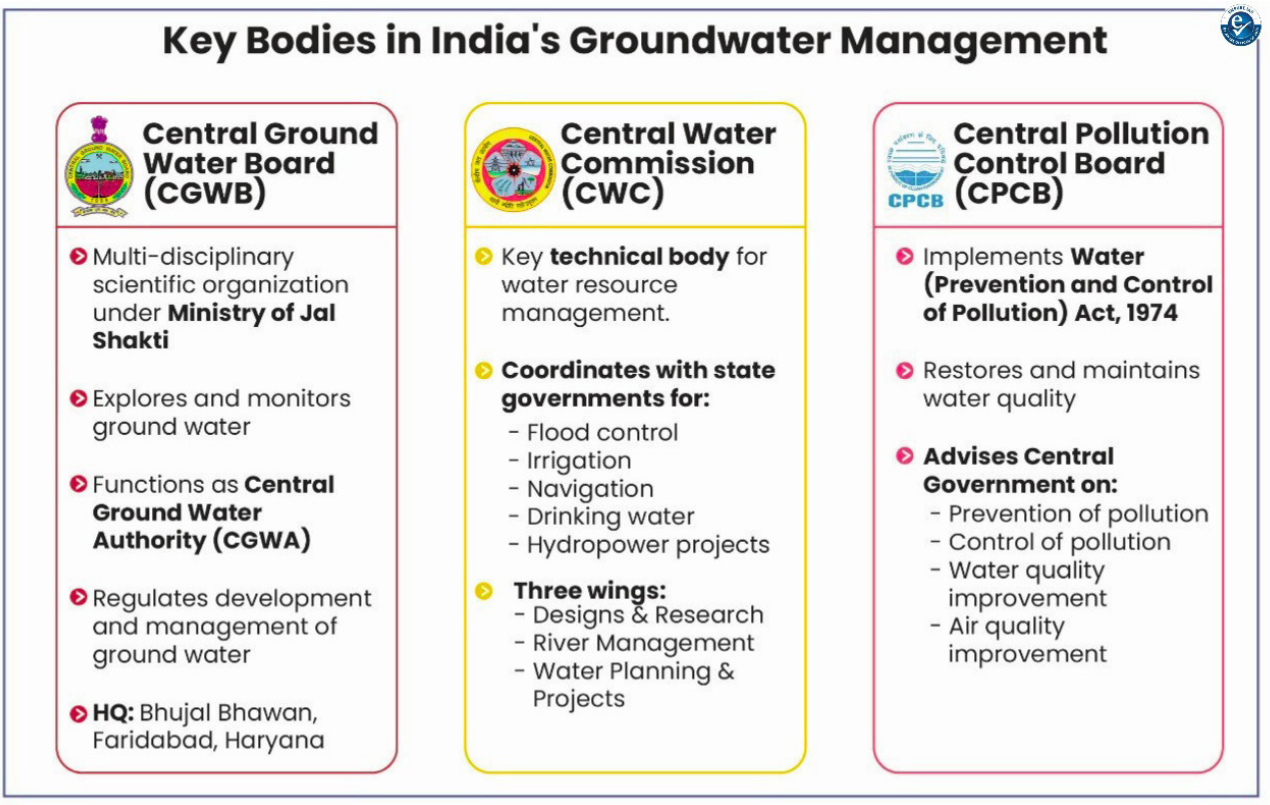
a. As of 2023, **440 districts** reported nitrate levels exceeding the safe limit of 45 mg per litre, up from **359 districts** in 2017.
b. **19.8%** of 15,239 groundwater samples had nitrate levels above permissible limits (down from 21.6% in 2017).
c. **Regional Hotspots**: Rajasthan (49%), Karnataka (48%), and Tamil Nadu (37%) reported the highest levels of nitrate contamination, with increasing nitrate levels in Central and Southern India, including Maharashtra, Telangana, and Andhra Pradesh.
d. **Monsoon Influence**: Nitrate contamination worsens post-monsoon, with 32.7% of samples exceeding safe limits compared to 30.8% before the monsoon.

Other Major Groundwater Contaminants

1. **Fluoride**
   a. Affects skeletal and dental health, leading to skeletal fluorosis, neuromuscular issues, and dental deformities.
   b. Affected States: Rajasthan, Haryana, Karnataka, Andhra Pradesh, and Telangana.
2. **Uranium**
   a. Causes kidney toxicity and chronic health problems.
   b. Affected States: Rajasthan, Punjab, Haryana, Gujarat, Tamil Nadu, Andhra Pradesh, and Karnataka.
3. **Arsenic**
   a. Linked to cancer, skin diseases, and chronic conditions like black foot disease.
   b. Affected States: West Bengal, Bihar, Uttar Pradesh, Assam, and Punjab.

Health and Environmental Impacts of Contaminants

1. **Health Risks**:
   a. **Methemoglobinemia (Blue Baby Syndrome)**: High nitrate levels reduce oxygen-carrying capacity in infants, leading to severe health issues, such as bluish skin in infants.
   b. **Chronic Health Conditions**: Excessive nitrate intake can harm the respiratory, reproductive, and nervous systems, leading to kidney toxicity and thyroid issues.
   c. **Gastrointestinal and Neurological Issues**: Long-term exposure can result in chronic illnesses.
2. **Environmental Impacts**:
   a. **Eutrophication**: Excessive nitrates cause algal blooms in water bodies, reducing oxygen levels and harming aquatic ecosystems.
   b. **Soil Degradation**: Contaminated groundwater affects soil nutrients, leading to agricultural decline.
   c. **Ecosystem Damage**: Contaminants reduce aquatic biodiversity and disrupt ecosystems.
3. **Economic Consequences**:
   a. Increased costs for treating water-related illnesses and mitigation of contamination.
   b. Reduced agricultural productivity and food safety concerns from using contaminated water.



Government Initiatives and Measures

National Programs:

1. **National Aquifer Mapping Programme (NAQUIM)**: Maps and characterizes aquifers for improved water management.
2. **National Rural Drinking Water Programme (NRDWP)**: Focuses on addressing contamination, such as fluoride and arsenic, through water treatment plants.
3. **Atal Bhujal Yojana (ABHY)**: Promotes sustainable groundwater management in over-exploited areas.
4. **Jal Kranti Abhiyan**: Promotes integrated water conservation and management.
5. **Namami Gange**: Focuses on cleaning the Ganga basin and mitigating groundwater contamination.
6. **Mission Amrit Sarovar**: Aims to rejuvenate 75 Amrit Sarovars in every district for enhanced water conservation.
7. **Bhu-Neer Portal**: Provides detailed information on the legal framework for groundwater extraction.

Pollution Control Efforts:

1. Installation of Sewage Treatment Plants (STPs) and Effluent Treatment Plants (ETPs).
2. Enforcement of the **Water (Prevention & Control) Act, 1974** by the Central Pollution Control Board (CPCB).

Policy Recommendations

1. **Regulating Fertilizer Use**: Promote sustainable agricultural practices and reduce nitrogenous fertilizer overuse. Encourage precision farming and organic alternatives.
2. **Promoting Groundwater Recharge**: Accelerate rainwater harvesting and Managed Aquifer Recharge (MAR) projects.
3. **Improved Monitoring**: Enhance systems for monitoring groundwater quality and contamination sources.
4. **Public Awareness and Education**: Conduct outreach programs under campaigns like **Catch the Rain** and **Swachh Bharat Mission**.
5. **Efficient Waste Management**: Develop robust decentralized waste treatment and recycling initiatives.

Click Here for INDEX

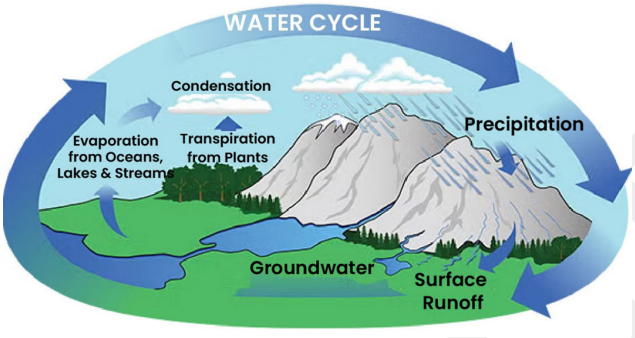
3. Global Water Monitor 2024 Report

Global Water Monitor 2024 Report

The **Global Water Monitor Consortium** has released the **'Global Water Monitor 2024 Summary Report'**, which provides an overview of the current state of the global water cycle, highlights key trends, and analyzes major hydrological events.

Water Cycle Overview

1. The **water cycle** refers to the continuous movement of water within the Earth and atmosphere, in various phases — solid, liquid, and gas.
2. The cycle begins with liquid water evaporating into water vapor, which then condenses to form clouds. These clouds eventually precipitate as rain or snow, completing the cycle.



Key Findings from the 2024 Report

1. **Water-related Disasters**: In 2024, water-related disasters resulted in over **8,700 deaths**, displaced **40 million people**, and caused damages exceeding **US$550 billion**.
2. **Soil Water Variability**: There were strong regional contrasts in soil water levels. For example, **South America** and **Southern Africa** experienced extreme dryness, while **West Africa** had wetter conditions.
3. **Declining Water Storage**: For the fifth consecutive year, **lake and reservoir water storage worldwide** showed a decline, signaling the growing strain on global freshwater resources.

Impact of Climate Change on the Water Cycle

1. **Intensification of the Water Cycle**: **Climate change** has intensified the water cycle by up to **7.4%**, leading to more extreme weather events.
2. **Severe Storms**: Warmer air can hold more moisture — approximately **7% more for every 1°C rise in temperature**. This has led to an increase in **precipitation intensity, duration, and frequency**, resulting in more severe storms.
3. **Increased Droughts**: Rising temperatures cause more **evaporation**, drying out soils and increasing the likelihood of droughts. **Extremely dry months** have become more frequent in recent decades.
4. **Sea-level Rise**: The combination of **thermal expansion** and **melting ice** has contributed to **rising sea levels**, leading to ocean acidification and threatening marine life.

4. India's 4th Biennial Update Report to the UNFCCC

1. Recently, India has demonstrated its commitment to climate action and sustainable development by submitting its **4th Biennial Update Report (BUR-4)** to the United Nations Framework Convention on Climate Change (UNFCCC).
2. It provides detailed information about India's greenhouse gas emissions for the year 2020, as well as insights into the nation's mitigation efforts, progress on climate goals, and the challenges it faces in combating climate change.
3. India, as one of the fastest-growing economies and home to nearly 1/6th of humanity, recognizes the importance of aligning its developmental aspirations with global sustainability goals.
4. Through its proactive measures, the country continues to set an example of integrating economic growth with meaningful climate action.

Key Highlights of BUR-4

GHG Emissions in 2020

1. India's total GHG emissions in 2020, excluding **Land Use, Land-Use Change, and Forestry (LULUCF),** reached **2,959 million tonnes of CO2 equivalent**.
   a. When accounting for LULUCF, the net emissions reduced to 2,437 million tonnes of CO2 equivalent.
2. **Composition by Gas:**
   a. Carbon dioxide accounted for 80.5% of emissions.
   b. Methane contributed 13.3%.

c. Nitrous oxide made up 5.1%.
d. Other gases accounted for 1%.

3. **Emissions by Sector:**
   a. Energy accounted for 75.6% of total emissions.
   b. Agriculture contributed 13.7%.
   c. Industrial Processes and Product Use (IPPU) made up 8.0%.
   d. Waste accounted for 2.5%.
4. India's forests and tree cover played a significant role in reducing emissions by sequestering approximately 522 million tonnes of CO2. This action effectively reduced the country's total carbon dioxide emissions by 22%.

Progress Toward Nationally Determined Contributions (NDC)

India has made significant strides in meeting its NDC targets, reflecting its commitment to decouple economic growth from GHG emissions.

1. **Reduction in Emission Intensity:** India has reduced the emission intensity of its Gross Domestic Product (GDP) by 36% between 2005 and 2020, reflecting its success in decoupling economic growth from GHG emissions.
2. **Expansion of Renewable Energy Capacity:**
   a. By October 2024, non-fossil sources accounted for 46.5% of India's total installed electricity generation capacity.
   b. India's renewable energy capacity, including large hydropower, reached 203 GW.
   c. The capacity for renewable energy, excluding large hydro, increased from 35 GW in 2014 to 156 GW in 2024.
3. **Growth in Specific Renewable Sources:**
   a. Solar energy capacity grew 35 times, from 2.6 GW in 2014 to 92 GW in 2024.
   b. Wind energy capacity more than doubled, increasing from 21 GW in 2014 to 48 GW in 2024.
4. **Increase in Forest and Tree Cover:**
   a. Forest and tree cover now account for 25% of India's geographical area.
   b. Between 2005 and 2021, India created an additional carbon sink of 2.3 billion tonnes of CO2 equivalent.

What Are NDCs?

NDCs are climate action plans under the Paris Agreement, aiming to reduce emissions and adapt to climate impacts while limiting global warming to well below 2°C, with an aspirational target of 1.5°C.

Key Features:

1. Periodic updates **every five years**.
2. Emphasis on emission reductions, adaptation measures, financial needs, and capacity-building efforts.
3. Regular communication of progress to ensure transparency and accountability.

India's NDCs:

1. **1st NDC (2015):** Focused on reducing emission intensity, expanding renewable energy, and increasing forest cover.
2. **Updated NDC (2022):** Enhanced ambition with specific targets:
   a. **Reduce emission intensity by 45% by 2030** compared to 2005 levels.
   b. **Achieve 50% non-fossil fuel electricity capacity by 2030**.
   c. Create an **additional carbon sink of 2.5 - 3 billion tonnes of CO_2 equivalent** through forest cover.
3. **Lifestyle for Environment (LIFE):** Promotes sustainable lifestyles rooted in traditional conservation values.

India's Approach to Climate Change

1. **Comprehensive Approach:** India follows a comprehensive approach to address climate change, which balances its developmental aspirations with its environmental commitments.
   a. The country adheres to the principles of equity and common but differentiated responsibilities and respective capabilities (CBDR-RC), as outlined in the UNFCCC and the Paris Agreement.
2. **Development Along Low-Carbon Pathways:** India remains committed to achieving **net-zero emissions by 2070**.
   a. The government ensures that economic growth proceeds along low-carbon pathways to meet its sustainability goals.

Click Here for INDEX

3. **Proactive Global Engagement:** India recognizes that climate change is a global challenge requiring collective action.
   a. The country actively advocates for multilateral cooperation to secure financial, technological, and capacity-building support for climate initiatives.
4. **Leadership in Sustainable Growth:** India's Union Minister for Environment, Forest, and Climate Change highlighted the country's leadership in aligning economic growth with environmental responsibility.

Sectoral Mitigation Efforts

1. **Energy Sector:** Share of renewable sources in total electricity generation increased significantly.
   a. Programs like **UJALA** and the **Street Lighting National Programme** have contributed to substantial energy savings and avoided emissions.
2. **Transport Sector:** Initiatives like **FAME-II** and **Ethanol Blended Petrol Program** promote cleaner transportation.
   a. **Electrification of railways** and **development of metro rail systems** are reducing carbon footprints.
3. **Agriculture:** Implementation of practices like **Direct-Seeded Rice** and **System of Rice Intensification** has reduced emissions.
   a. **Neem-coated urea** has significantly improved nitrogen use efficiency, avoiding 27 MtCO2 emissions from 2019 to 2024.
4. **Forestry and Land Use:** Programs such as the **Green India Mission** and **Nagar Van Yojana** have enhanced carbon sequestration and biodiversity conservation.
5. **Waste Management:** Initiatives under the **Swachh Bharat Mission** and **National Bioenergy Program** have improved solid waste management and promoted waste-to-energy projects.

What is The United Nations Framework Convention on Climate Change (UNFCCC)?

1. The UNFCCC, **established in 1992**, is a **global treaty** aimed at **combating climate change** by stabilizing GHG concentrations in the atmosphere.
2. **Ratified by 197 parties**, it seeks to prevent "**dangerous interference**" with the climate system while supporting ecosystems, food security, and sustainable development.

Key Mechanisms of the UNFCCC:

1. **Conferences of Parties (COP):** Annual meetings that drive agreements like the **Kyoto Protocol (1997)** and the **Paris Agreement (2015)**.
2. **Kyoto Protocol:** Sets **binding** GHG reduction targets for industrialized nations (2008–2012).
3. **Paris Agreement:** Aims to **limit global warming to below 2°C**, with efforts to stay under 1.5°C.

Principles:

1. **Common but Differentiated Responsibilities (CBDR):** Developed nations bear greater accountability for climate action.
2. Emphasis on continuous research and adaptation strategies.

Challenges and Future Directions

1. India faces several challenges in its climate action efforts, including the need for increased financial resources, advanced technologies, and capacity-building support.
2. Despite these challenges, India has demonstrated its commitment to combating climate change while ensuring economic development.
3. The BUR-4 emphasizes the importance of continuous global cooperation and equitable support to help countries like India achieve their climate goals.
4. India's progress showcases how developing nations can integrate sustainable growth with proactive climate strategies.

India's Fourth Biennial Update Report reaffirms its dedication to addressing climate change through effective policies and sustainable practices. The nation's achievements, including significant reductions in emission intensity, expansion of renewable energy capacity, and growth in forest cover, underline its leadership in global climate action. India continues to set an example by balancing economic progress with environmental responsibility, providing a roadmap for sustainable development in the years ahead.

5. Yala Glacier in Himalayas Projected to Vanish by 2040s

1. The **Yala Glacier**, located in Nepal, has experienced significant retreat, shrinking by **680 meters** and reducing in area by **36%** between **1974 and 2021**.
2. This glacier is the **only one in the entire Himalayas** included in the **Global Glacier Casualty List (GGCL)**, underscoring the accelerating impact of **climate change** on Himalayan glaciers and the **cryosphere**.

About the GlobGlacier Casualty List (GGCL)

1. The **GGCL** project, launched in **2024** by **Rice University**, the **University of Iceland**, the **Iceland Glaciological Society**, the **World Glacier Monitoring Service**, and **UNESCO**, aims to monitor the vanishing glaciers worldwide.
2. The cryosphere refers to the frozen portions of the Earth, including snow, ice, and frozen ground.

Glacier Retreatand its Global Impact

Glacier retreat is the process by which glaciers shrink in size and mass, primarily due to **melting**, **evaporation**, and **other environmental factors**.

Several glaciers around the world are disappearing at an alarming rate, including:

1. **Pico Humboldt Glacier** in Venezuela (2024),
2. **Sarenne Glacier** in France (2023),
3. **Dagu Glacier** in China, which is expected to disappear by **2030**.

Impact of Melting Glaciers on Ecosystems and Livelihoods

1. The retreat of glaciers has far-reaching consequences for both ecosystems and human populations.
2. Glaciers and ice sheets contain approximately **70% of the world's freshwater**, which is crucial for **ecosystems** and the **survival of human populations**.
   - For example, around **240 million people** living in the **Hindu Kush Himalaya** region rely on the cryosphere for their water and livelihood needs.
3. Moreover, the accelerated melting of glaciers leads to an **increased risk of Glacial Lake Outburst Floods (GLOFs)**.
4. As glaciers melt, unstable glacial lakes form, which, if breached, can cause catastrophic floods, threatening nearby communities and wildlife.
5. Additionally, the melting of glaciers diminishes Earth's **reflectivity** (known as **albedo**), absorbing more heat and **accelerating global warming**.

Global and National Initiatives for Glacier Preservation

To address the threat to glaciers, several global and national initiatives have been launched:

1. **Global Initiatives**:
   a. **UN Initiatives**: The **International Year of Glaciers Preservation** (2025) and **World Day for Glaciers** (March 21) have been designated to raise awareness about glacier conservation.
   b. Other programs include the **Himalayan Adaptation Network** by **IUCN** and the **Living Himalayas Initiative** by **WWF**.
2. **India's Initiatives**:
   a. The **National Mission for Sustaining the Himalayan Ecosystem** aims to preserve the integrity of the Himalayan glaciers.
   b. The **Indian National Centre for Ocean Information Services (INCOIS)** actively monitors glacier-related events and issues **GLOF alerts** to safeguard vulnerable regions.
   c. India's missions to the **Arctic and Antarctic**, such as **IndARC** (2014), help in studying polar regions and understanding climate change impacts.

International Year of Glaciers' Preservation

Recently, **UN has declared 2025** as the **International Year of Glaciers' Preservation**.

- It was also announced that **March 21** of each year will be celebrated as **World Day for Glaciers, starting in 2025.**

About International Year of Glaciers' Preservation

1. **Co-facilitated by:** UNESCO and the World Meteorological Organization (WMO).
2. **Objective:** To raise global awareness about the critical role of glaciers in the climate system and the hydrological cycle, and the economic, social and environmental impacts in the Earth's cryosphere.
3. **Significance of Glaciers:** There are more than **275 000 glaciers in the world**, covering an area of **around 700,000 sq. kms**, which account for **~70% of the global freshwater.**

Click Here for INDEX

6. World's First Cryo-Born Baby Corals

1. A groundbreaking advancement in coral conservation, the **world's first cryo-born baby corals** have successfully settled on the **Great Barrier Reef**.
2. This achievement, led by Australian researchers, marks a major milestone in efforts to **preserve and restore coral** reefs around the globe.

About Cryo-born Corals

1. **Cryo-born corals** are created using **cryopreservation** techniques, where coral cells and tissues are frozen at extremely low temperatures.
2. The process involves removing water from coral cells, preventing the formation of damaging ice crystals, and supporting cell structures to ensure they remain viable when thawed.
3. This innovative method allows researchers to bypass the limitations of natural coral spawning, which occurs only once a year, enabling **selective breeding** and the ability to reproduce coral colonies multiple times.

About Coral Reefs

1. Corals are **invertebrates** that form colonies through the secretion of limestone skeletons. These colonies rely on **symbiotic algae (zooxanthellae)** for their nutrition.
2. Corals thrive in shallow, sunlit waters, typically between **30°N and 30°S latitude**, with an ideal temperature range of **16-32°C**.
3. They are found in depths less than **50 meters**, where light penetration is strong.

Significance of the Breakthrough

1. The cryo-born coral project aims to enhance **climate change resilience**.
2. By creating heat-tolerant corals, researchers plan to deploy millions of these resilient corals onto reefs annually, helping to counteract the effects of rising ocean temperatures.
3. This selective breeding approach offers a new way to restore coral populations and ensure their survival in increasingly hostile environmental conditions.

Threats to Coral Reefs

Coral reefs face a multitude of threats, including:

1. **Climate Warming**: Rising temperatures harm marine life, especially corals.
2. **Coral Mining**: Extraction of corals for construction materials.
3. **Aquarium Trade**: Collection of corals for the aquarium industry.
4. **Destructive Fishing Practices**: Harmful methods that damage coral habitats.
5. **Overfishing**: Depleting fish populations, disrupting the delicate reef balance.
6. **Ocean Acidification**: Increased CO2 levels affecting coral growth.
7. **Pollution**: Contaminants damaging marine ecosystems.

Other Coral Conservation Measures

Efforts to protect coral reefs are not limited to the cryo-born coral breakthrough. Several conservation measures are being taken globally:

1. **India**:
   a. The **National Committee on Wetlands, Mangroves, and Coral Reefs** (1986) advises on conservation.
   b. The **Environment Protection Act, 1986** prohibits the use of coral and sand for construction.
   c. The **Zoological Survey of India (ZSI)** uses **Biorock technology** to restore coral reefs.
2. **Global**:
   a. **CITES** lists coral species in Appendix II to regulate trade.
   b. The **World Heritage Convention** designates coral reef sites for protection.
   c. The **Taronga Cryo Diversity Bank** holds trillions of sperm from 32 coral species, collected annually since 2011, as the world's largest frozen coral repository.

7. Indore and Udaipur Joined Wetland Accredited Cities

Indore and Udaipur have become the **first two Indian cities** to be **accredited as wetland cities** under **the Ramsar Convention**.

Key Points

1. **International Recognition for Wetland Conservation:**
   a. **The Wetland City Accreditation** recognizes **cities that prioritize the conservation** of their **natural and human-made wetlands**.
   b. The Advisory Committee on Wetland City Accreditation **accredited 31 new cities,** including Indore and Udaipur, bringing the **global total to 74 accredited cities.**
2. **Bhopal Misses Out on Accreditation:**
   a. Bhopal, which was nominated alongside Indore and Udaipur, did **not receive accreditation due to concerns** about the ecological impact on **Bhoj wetland.**
   b. Citizen groups **raised concerns** about a **proposed road project cutting through the wetland's catchment area**, potentially threatening local water bodies and wildlife.
3. **Criteria for Wetland City Accreditation:**
   a. Cities must satisfy **six international criteria**, including:
      i. Conserving wetlands and their ecosystem services.
      ii. Ensuring sustainable socio-economic benefits for local populations.
4. **Global Status of Wetland City Accreditation:**
   a. **China leads the global list** with 22 accredited cities, **followed by France** with 9 cities.
   b. The accreditation program promotes the **sustainable use of urban and peri-urban wetlands.**

What is Wetland City Accreditation (WCA)?

1. Wetland City Accreditation **(WCA) is a voluntary system that offers cities the chance to gain international recognition** and positive publicity for their efforts in **managing natural or human-made wetlands.**
2. **It was approved at the 12th Conference of the Parties (COP12)** of the **Ramsar Convention in Uruguay in 2015.**
3. The **accreditation is valid for 6 years, after which it must be renewed.**

What is wetland ?

1. Wetlands are areas of land that are saturated with water, either permanently or seasonally.
2. Types of Wetlands: Includes marshes, swamps.

About the Ramsar Convention:

1. The **Ramsar Convention** is an international treaty signed in **1971** in **Ramsar, Iran**, dedicated to the **conservation and sustainable use of wetlands** globally.
2. The treaty's main focus is to safeguard wetlands and ensure their wise use, providing ecological benefits such as **flood control**, **water purification**, and **wildlife habitat preservation**.
3. **Wetland City Accreditation** under Ramsar recognizes cities that integrate wetland preservation into urban planning, making them models of **sustainability** and **environmental stewardship**.
4. As of today, more than **170 countries** are signatories, collectively designating over **2,400 Ramsar sites** across the globe.
5. **India's Ramsar Journey:**
   a. India has been a signatory to the **Ramsar Convention** since **1982**.
   b. Since then, the country has made significant strides in **wetland conservation**.
   c. Currently, **India has 89 Ramsar sites.**
6. **Notable Ramsar Site Leaders:**
   a. **Tamil Nadu (20)** leads the **country with the highest number of Ramsar sites, followed by Uttar Pradesh (10).**
   b. Other states are also actively involved in expanding the network of Ramsar sites to preserve wetlands across India.

Click Here for INDEX

8. India's Coastline Recalculated: A 48% Increase Over 53 Years

1. India's coastline has undergone a significant recalculation, revealing a 48% increase over the past 53 years.
2. According to the latest figures for 2023-24, the length of the coastline now spans **11,098 kilometers,** up from **7,516 kilometers in 1970.**
3. This upward revision comes from the adoption of a new methodology for measuring India's maritime boundaries, introduced by the National Maritime Security Coordinator.

Key Changes in Methodology

1. The updated method takes into account complex coastal formations such as bays, estuaries, and inlets, which were previously excluded in earlier calculations.
2. Older techniques relied on straight-line distances, which didn't fully reflect the intricacies of India's coast.

State-wise Findings

1. **West Bengal** saw the highest percentage increase in its coastline, growing by 357%.
2. **Kerala** recorded the smallest increase at 5%.
3. **Puducherry's coastline** contracted by 4.9 kilometers.

Gujarat and Tamil Nadu Lead

Gujarat remains the state with the longest coastline, followed by Tamil Nadu, which has now overtaken Andhra Pradesh, moving to second place.

9. Wayanad Landslides Declared a 'Calamity of Severe Nature'

1. The Inter-Ministerial Central Team (IMCT) has officially declared the recent landslides in Wayanad as a **"calamity of severe nature."**
2. This designation underscores the magnitude of the disaster and the significant loss of life and property.

Criteria for Declaring a 'Calamity of Severe Nature'

1. While there are no specific criteria outlined in the **State Disaster Response Fund (SDRF)** or **National Disaster Response Fund (NDRF)** guidelines for declaring a calamity as severe, the Central government makes this declaration based on the intensity and scale of the disaster.
2. The decision is generally influenced by the recommendations of the IMCT, who assess the extent of the destruction.

Funding Support

1. For a calamity of severe nature, the affected region receives additional funding from the NDRF.
2. This funding is provided beyond the balance available in the state's own SDRF to ensure that the response and recovery efforts are adequately supported.

10. India's First-Ever Coastal and Wader Bird Census

1. From **January 3 to 5, 2025**, India conducted its **first-ever census of coastal and wader birds** at Gujarat's **Marine National Park in Jamnagar**.
2. This landmark event aimed to **monitor bird populations, assess habitat health, and strengthen conservation efforts**.
3. The census saw the participation of **over 100 bird watchers**, covering **key wetland areas along the coastline from Okha to Navlakhi**.

What are Wader Birds?

Wader birds, also known as **shorebirds or sandpipers**, are typically found in **coastal habitats, wetlands, and mudflats**.

Characteristics of Wader Birds:

1. **Long legs** for wading in shallow waters.
2. **Slender bodies** adapted for quick movement.
3. **Long bills** to forage for insects, worms, and small aquatic creatures.

There are approximately **210 species of waders**, each adapted to different climatic zones and ecosystems. While many **tropical wader species are resident**, those from **Arctic and temperate regions** are highly migratory.

Diversity of Wader Birds

Wader birds are found across **varied landscapes**, from **Arctic tundras** to **tropical wetlands**.

Classification Based on Habitat

1. **Coastal Waders** – Found along **beaches, estuaries, and tidal flats**. Examples: **Crab Plover, Sandpipers, Redshank**
2. **Freshwater Waders** – Inhabit **marshes, lakes, and riverbanks**. Examples: **Black-tailed Godwit, Common Greenshank**
3. **Grassland Waders** – Prefer **wet grasslands and floodplains**. Examples: **Eurasian Curlew, Ruff**

Migration Patterns of Wader Birds

Migration is a key feature of many wader species, especially those **breeding in Arctic and temperate regions**.

1. Arctic Wader Migration

a. **Little Stint (*Calidris minuta*)** One of the **longest-distance migratory birds**.Breeds in **Arctic tundras** and winters in the **southern hemisphere** (Africa, India, Australia).

b. **Bar-tailed Godwit (*Limosa lapponica*)** Holds the **record for the longest nonstop migration** (~12,000 km from Alaska to New Zealand).

2. Temperate Region Waders

a. **Black-tailed Godwit (*Limosa limosa*)** Breeds in **Europe and Central Asia**, winters in **India and Africa**.

b. **Eurasian Curlew (*Numenius arquata*)** Long-distance migrant; winters in **India, Africa, and the Middle East**.

3. Tropical Wader Movement

a. Many **tropical species** are **resident birds** or move locally based on **rainfall patterns**.

b. Some **coastal waders** adjust their locations based on **tide cycles and food availability** rather than seasonal migration.

Adaptations for Migration

1. **Energy Storage:** Waders build up **fat reserves** before migration.
2. **Efficient Flight Mechanism:** Their **long wings** reduce **energy consumption** during flight.
3. **Navigation Skills:** Use the **Earth's magnetic field, stars, and environmental cues** to migrate.

Importance of Wader Conservation

1. **Indicator Species:** Their population trends signal **wetland ecosystem health**.
2. **Climate Change Impact:** Rising sea levels and habitat destruction threaten **migratory routes**.
3. **Global Cooperation Needed:** Many conservation programs (e.g., **Ramsar Convention, Flyway Initiatives**) focus on protecting waders' **breeding and wintering sites**.

Marine National Park: A Crucial Habitat

The **Marine National Park and Marine Sanctuary** in Gujarat is **India's first designated marine national park**, making it a vital location for **marine biodiversity and bird conservation**.

Key Facts about Marine National Park:

1. **Location:** Spans **Devbhoomi Dwarka, Jamnagar, and Morbi districts**.
2. **Area Covered:** Approximately **170 km of coastline and 42 islands**.
3. **Ecosystem:** Home to **mangrove forests, coral reefs, and diverse marine species**.

Importance for Migratory Birds:

The **Marine National Park** lies along the **Central Asian Flyway (CAF)**, one of the most critical migratory routes for birds traveling between the **Arctic and Indian Oceans**. Birds from **Eurasia, Central Asia, and Siberia** use this route, making the region **a key stopover site for migratory species**.

11. First-Ever Global Freshwater Fauna Assessment by IUCN

1. The **International Union for Conservation of Nature (IUCN)** has conducted the first-ever **multi-taxon global freshwater fauna assessment** for **The IUCN Red List of Threatened Species**.
2. This comprehensive evaluation provides vital information on the health and conservation status of freshwater species across the globe.

Click Here for INDEX

Key Findings

1. **Threatened Species**: About **24% of the world's freshwater species** are at risk of extinction, highlighting the urgency of conservation efforts.
2. **Major Hotspots**: Some of the most critical regions for freshwater fauna include:
   a. **Lake Victoria** (Kenya, Tanzania, Uganda)
   b. **Lake Titicaca** (Bolivia, Peru)
   c. **Sri Lanka's Wet Zone**
   d. **Western Ghats** (India)
3. **Most Threatened Species**: Species of **crabs**, **crayfishes**, and **shrimps** are among the most at risk, followed by **freshwater fishes**. Of the **23,496 species** assessed, at least **4,294 species** are classified as being at high risk of extinction.
4. **Other Factors**: Interestingly, areas with higher **water stress** and **eutrophication** (an excess of nutrients in water leading to algae overgrowth) do not necessarily have more threatened species compared to areas with lower water stress and eutrophication.

About Freshwater Landscapes

Freshwater ecosystems, which are home to **10% of all known species on Earth**, are crucial for human survival and biodiversity. These ecosystems provide:

1. **Safe drinking water**
2. **Livelihoods**
3. **Flood control**
4. **Climate change mitigation**

However, these landscapes are under severe threat from various human activities:

a. **Pollution**: Mainly from agriculture and forestry, which contribute to water contamination.
b. **Degradation**: Caused by land conversion for agricultural use, water extraction, and the construction of dams.
c. **Other Threats**: These include **overfishing** and the introduction of **invasive alien species**, which disrupt the balance of native ecosystems.

12. WEF Global Plastic Action Partnership (GPAP)

The **Global Plastic Action Partnership (GPAP)** has welcomed new members, including **Angola, Bangladesh, Gabon, Guatemala, Kenya, Senegal**, and **Tanzania**.

About GPAP

The **Global Plastic Action Partnership** was launched at the **Sustainable Development Impact Summit in 2018** by the **World Economic Forum (WEF)**.

It functions as the plastic pillar of the **Platform for Accelerating the Circular Economy** and **Friends of Ocean Action**.

1. **Present Membership**: GPAP currently has **25 members**, including **Maharashtra State** from **India**.
2. **Objectives**: The partnership aims to accelerate the global response to the **plastic pollution crisis** by bringing together governments, businesses, and civil society. It also focuses on advancing a **circular plastics economy** to reduce emissions and protect land and ocean ecosystems.
3. **Key Activities**: GPAP supports countries in developing **National Action Roadmaps** and **Investment Mobilization** for **waste management**.

Challenges in Handling Global Plastic Waste

Plastic waste has become a global crisis with several key challenges:

1. **Scalability**: Since 2000, global plastic waste has more than doubled, as per the **OECD's Global Plastic Outlook Report (2022)**. In 2024, **India** became the world's largest plastic emitter country.
2. **Limited Recycling**: Globally, only **9%** of plastic waste is recycled, while **19%** is incinerated, and almost **50%** ends up in sanitary landfills.

India's Initiatives for Plastic Waste Management

India has taken several steps to combat plastic pollution:

1. **Plastic Waste Management Rules, 2016**: These rules focus on **Extended Producer Responsibility (EPR)**, which promotes recycling and aims to reduce the plastic footprint.
2. **National Circular Economy Roadmap (2023)**: Launched in collaboration with **Australia**, this initiative focuses on reducing plastic waste through sustainable practices.

Impact of Plastic Waste

Plastic pollution poses significant environmental, health, and economic challenges:

1. **Environmental Impact**: Plastic waste affects all ecosystems—land, freshwater, and marine. It leads to **biodiversity loss**, **ecosystem degradation**, and contributes to **climate change**. Plastic pollution is responsible for an estimated **1.8 billion tonnes** of **greenhouse gas emissions** annually, especially **methane** from landfills.
2. **Health Impact**: Plastics, particularly in the form of **microplastics**, enter the food chain, posing risks to both animal and human health.
3. **Economic Impact**: The plastic crisis affects sectors such as **tourism**, **fisheries**, **agriculture**, and **water safety**, leading to income losses.

13. Manufactured Sand (M-Sand) Policy by Rajasthan Government

The **Rajasthan government** has recently introduced the **M-Sand, 2024 policy**, aiming to promote **sustainable construction** and **infrastructure** development across the state.

What is M-Sand?

1. **M-Sand** is produced by crushing rocks or quarry stones, and it serves as a **substitute for river sand** in concrete construction.
2. This alternative material addresses the challenges associated with the depletion of natural river sand.

Advantages of M-Sand

1. **Better Workability**: M-Sand is free from organic and soluble compounds, which ensures it does not affect the setting time or properties of cement, improving workability.
2. **Higher Strength**: M-Sand lacks impurities like clay, dust, and silt, which are often found in natural sand. This absence results in stronger and more durable concrete.
3. **Eco-Friendly**: The use of M-Sand helps prevent the dredging of river beds, which contributes to environmental issues such as **groundwater depletion** and **water scarcity**. By opting for M-Sand, we reduce the strain on natural river ecosystems.

14. Musi River's Heritage Listed on World Monuments Watch 2025

Musi River historic buildings have been kept on World Monuments Watch 2025.

- **World Monuments Watch** is a biennial program which aims to raise awareness and mobilize action for the preservation of cultural heritage worldwide.

About Musi River

1. **Origin**: **Ananthagiri hills, Rangareddy district (Telangana).**
2. It is one of the major tributaries of **Krishna river** and flows into the **Osmansagar and Himayatsagar reservoirs.**
3. It consists of 2 **rivulets Esi (8 kms) and Musa (13 kms)** which then converge into Musi River.
4. **Importance**: major water sources for **Hyderabad.**

Click Here for INDEX

G. Society And Culture

1. Sexual Harassment Case Cannot Be Closed Based on Compromise: Supreme Court

1. Supreme court (SC) in **Ramji Lal Bairwa & Anr vs State of Rajasthan & Ors Case** held that cases of sexual assault under **Protection of Children from Sexual Offences (POCSO) Act, 2012 (refer to box)** cannot be quashed on the basis of the compromise between parties.
2. SC held this while reviewing Rajasthan High Court's decision of quashing a 'sexual assault' case under the Act.
3. Case has been heard under **Special Leave Petition**.
    - **Article 136** of the Constitution vests the SC with a special power to grant **special leave** to appeal against any **judgment/order/decree** in any matter or cause passed or made by any Court/ tribunal.

Key Observations

1. **Rejection of Compromise Precedent:** Court made reference of the **State of M.P. v. Laxmi Narayan (2019) case** which held that an **offense against the society** cannot be compromised.
    a. Also, endorsed the Delhi High Court judgment (Sunil Raikwar v. State) which held that a **POCSO offense cannot be settled.**
2. **Non-Private nature of offense:** Court observed that such crimes **cannot be treated as private matters** eligible for compromise-based quashing.
    a. Also, held that cases which have **serious societal implications** should not be dismissed solely based on a settlement.

About POCSO Act, 2012

1. **Aim: Gender-neutral legislation** ensures child safety, punishes offenders based on the severity of offenses, and **comprehensively addresses child sexual abuse.**
2. **Definition of Child:** Any individual **below 18 years of age.**
3. **Three broad categories of sexual offences punishable**: Sexual assault, sexual harassment and using a child for pornography.
    a. **2019 Amendment** introduced more stringent punishment including the death penalty for committing sexual crimes on children.

2. Same-Sex Marriage in India

1. In **January 2025**, the Supreme Court **dismissed petitions seeking review** of its **October 17, 2023, ruling** that had **rejected** the prayer to grant legal **recognition to same-sex marriages.**
2. A five-judge bench found **no error apparent** on the face of the record of the majority view authored by Justice (retired) S Ravindra Bhat in the 2023 ruling.
3. This decision highlights the **ongoing resistance** to the recognition of same-sex marriages within the Indian legal framework.
4. Despite growing advocacy and the progressive steps taken in other areas of LGBTQ+ rights, marriage equality in India remains a highly contentious issue.

What is same sex marriage?

1. Same-sex marriage refers to the **legal union** between **two individuals of the same gender**. It is an aspect of **homosexuality** which refers to having **sexual interest in and attraction** to members of **one's own sex or gender**.
    a. The term **gay** is frequently used as a synonym for homosexual; female homosexuality is often referred to as **lesbianism.**
2. Same-sex marriage has become a central focus of the **LGBTQ movement** agenda since the early 2000s, with the aim of **achieving equal marriage rights** for all individuals regardless of sexual orientation.
    a. The LGBTQ movement is a social movement that advocates for the rights of **lesbian, gay, bisexual, transgender, and queer people**. The movement's goal is to achieve social equality and respect for all people, regardless of their sexual orientation, gender identity, or sex characteristics.

What is the status of same-sex marriage in India?

The Indian legal system **does not recognize same-sex marriages**, and the country's laws define **marriage** as a union between a **man and a woman**. However, there have been certain significant developments:

1. The Supreme Court of India in **August 2022** provided **social security** rights to those in **same-sex live-in relationships** while also recognising same-sex couples as being **part of a "family unit".**
2. Since the 2010s, courts in several states, including **Gujarat, Himachal Pradesh, Kerala, Odisha, Punjab, Uttar Pradesh, and Uttarakhand,** have ruled on an individual basis that **live-in relationships between same-sex couples are not unlawful and entitled to legal protection**. This has often only entailed **limited** inheritance benefits or police protection from family
3. On **1 April 2022, MP Supriya Sule** from the **Nationalist Congress Party** introduced a **bill to the Lok Sabha** to **legalise same-sex marriage under the Special Marriage Act**. The proposal would amend various sections of the Act to provide same-sex couples with the same legal rights as opposite-sex couples. The bill would **fix the marriageable age at 21 for gay couples and at 18 for lesbian couples.** No action was taken on the bill.

How has the Supreme Court responded on Same-sex Marriage?

1. In **October 2023,** a five-judge Constitution bench of the Supreme Court on Tuesday **refused to grant legal recognition** to same-sex marriages.
2. It refused to tweak the **Special Marriage Act** to recognise same sex marriages saying there was **"no unqualified right" to marriage**, and a same-sex couple could not claim it as a fundamental right under the Constitution.
    a. **The Special Marriage Act, 1954** is an Act of the Parliament of India with provision for civil marriage for people of India and all Indian nationals in foreign countries, **irrespective of religion or faith** followed by either party.
3. The bench had **left it to Parliament** to change the law to validate such a union.
4. **Minority view in the 2023 ruling**
    a. Former CJI D.Y Chandrachud and Justice (since retired) Kaul spoke in favour of a **civil union**, but it ended up being the minority view. Former CJI Chandrachud said that this right to civil union or right to enter an abiding cohabitational relationship could be traced to **Part III of the Constitution**. It has also been laid down in **various judgments** of the court – Navtej Johar, K S Puttaswamy, NALSA, Shakti Vahini, Shafin Jahan etc. Thus, the State had a **positive obligation** to accord recognition to it.
        i. **Civil union** is a legally recognized arrangement **similar to marriage**, created primarily as a means to provide **recognition in law for same-sex couples**.

What are arguments for the recognition of Same-sex marriages?

1. **Basic Human right: The Human Rights Charter** says that the right to get married is part of the right to start a family. As per advocates of marriage equality, it is applicable to **everyone no matter what gender they are.**
2. **Implied fundamental right:** It has been claimed that right to marriage for non-heterosexual couples is **implied in Articles 14, 15, 16, 19, and 21**. This is especially after the SC rulings in **'Navtej Singh Johar vs. Union of India' (2018)** (decriminalization of homosexuality) and **'KS Puttaswamy and Anr. vs. Union of India' (2017)** (upheld the fundamental right to privacy).
3. **Issue of inequality:** According to same-sex couples and LGBTQ activists the government's refusal to acknowledge same-sex marriage is a violation of the Constitutional **right to equality** and the **privileges that married heterosexual couples enjoy.**
    a. LGBTQ+ people are denied the rights that come with a legal marriage, such as the right to adopt, receive, and be taken care of.
4. **Personal satisfaction and self-confidence:** Same-sex couples believe that tying the knot will give their relationship significance, direction, and a distinct sense of self.

Click Here for INDEX

5. **Delhi Commission for Protection of Child Rights:** Same-sex couples would be just **as good parents as straight parents** to children raised by them. By making gay marriages illegal, the state is denying the child the legal protection of having two parents and a guardian.

What course of action for recognition of same-sex marriages has been proposed?

1. **SC's recognition of same-sex marriage**: This will eventually lead to a situation where society accepts it.
2. **Rewording of Special Marriage Act, 1954:** It should be reworded to read marriage as between **spouses** instead of "man and woman".
3. Other administrative modifications, modifying subordinate legislation such as rules and regulations.

What are the arguments against Same-sex marriage?

1. **Centre' s arguments**:
   a. **Against Indian ethos**: The Centre's fundamental argument is that same-sex marriage is not recognised in Indian traditions, ethos and culture.
   b. **Impact on the institution of marriage:** Marriage is considered as a **sacrament between a biological male and a biological female** to make a holy union in order to have children. Same-sex marriage could negatively impact such societal conceptions of the institution of marriage.
   c. **Jurisdiction of the Parliament: Parliament**, rather than the Court is the appropriate institution to consider the legalization of same-sex marriages. This is because marriage is a crucial component of a **nation's social policy**. Thus, the recognition of same-sex marriage is the responsibility of the **elected representatives of the people**.
   d. **Representation of urban elitist attitudes:** It is believed that the demand represented urban elitist attitudes and would not be supported by the majority of people.
   e. **Misuse in the future:** In the future arguments about sexual orientation freedom and autonomy could be used to **challenge the law on incest** which is prohibited.
   f. **Not a matter of right:** According to the Centre, creation or recognition of a new social institution cannot be claimed as a matter of right or choice, much less a fundamental right.
2. **National Commission for Protection of Child Rights:** It stated that same-sex marriage would violate the terms of the **Juvenile Justice Act**. The Juvenile Justice Act of 2015 makes it **illegal for a single male**, let alone two men, to adopt a girl child.
3. **Religious organisations**: Several minority religious organisations in India have opposed the legalisation of same-sex marriages as being "against religion" and "unnatural".
4. **Response of states:** States such as Rajasthan, Assam, and Andhra Pradesh opposed the plea seeking legal recognition for same-sex marriages.

What is the status of same-sex marriage in the world?

1. In 1989, **Denmark became the first country to legally recognize a relationship for same-sex couples**, establishing registered partnerships, which gave those in same-sex relationships "most rights of married heterosexuals, but not the right to adopt or obtain joint custody of a child".
2. Eventually, **in 2001, the Netherlands** became the first country to broaden marriage laws to include same-sex couples.
3. Till date, same-sex marriage has been **established by law in 34 other countries**, including **most of the Americas and Western Europe**. Yet its spread has been uneven — **South Africa** is the **only country in Africa** to take the step; **Taiwan, Nepal and Thailand are the only ones in Asia.**
4. On **12 March 2015, the European Parliament** passed a non-binding resolution encouraging EU institutions and member states to "**reflect on the recognition of same-sex marriage or same-sex civil union as a political, social and human and civil rights issue"**.
5. Recently, in January 2025 **Thailand** legalized same-sex marriage.

A further glimpse into the LGBTQ movement

What are the objectives of the movement?

1. **Legal Equality:** Such as decriminalization of Same-Sex Relationships, marriage equality and anti-discrimination laws.

2. **Social Acceptance:** Through eradication of stigma, education and awareness.
3. **Protection of rights:** Such as protection against harassment and violence, freedom of expression etc.
4. **Recognition of Gender Diversity**: Ensuring the right to self-identify and legal recognition of non-binary and transgender identities.

What is the LGBTQIA+ community?

1. The community encompasses people who are **lesbian, gay, bisexual, transgender, queer, intersex, and asexual**. The "+" in the acronym represents **other identities** that are not included in the letters. As society's understanding, recognition, and inclusion of diverse sexual identities and gender expressions has grown, so has its acronym.
   - **Lesbian -** A woman who is romantically, emotionally, or sexually attracted to other women.
   - **Gay** - A person (usually a man) who is romantically, emotionally, or sexually attracted to people of the same gender.
   - **Bisexual -** A person who is romantically, emotionally, or sexually attracted to more than one gender
   - **Transgender -** A person whose gender identity does not align with the sex assigned to them at birth.
   - **Queer -** An umbrella term for individuals who do not conform to societal norms regarding gender identity and sexual orientation.
   - **Intersex -** A person born with physical sex characteristics (e.g., chromosomes, hormones, or genitalia) that do not fit typical definitions of male or female bodies.
   - **Asexual -** A person who experiences little or no sexual attraction to others.

2. The LGBTQ Movement also has observances like the **LGBT History month** and symbols like the **Rainbow flag** which was invented by **Gilbert Baker.** Each colour on the flag represents a value in the community:
   - Pink = sexuality
   - Red = life
   - Orange = healing
   - Yellow = the sun
   - Green = nature
   - Blue = art
   - Indigo = harmony
   - Violet = spirit

What was the development of LGBTQ movement in India?

1. **In Ancient and Medieval India**
   a. LGBTQ people are well documented in various artworks and literary works of Ancient India, with evidence that **homosexuality and trans-sexuality were accepted by the major dharmic religions.**
   b. The Second Part, Ninth Chapter of Kama Sutra specifically describes two kinds of men that we would recognize today as masculine-type and feminine-type homosexuals
   c. Many **erotic artworks depicting homosexuality** can be found on numerous temples throughout India, including **Khajuraho temple sculptures** and the **Sun temple in Konark**.

2. **In Modern India:** There have been several key events in India that have shaped the country's approach to LGBTQ+ rights over the years. They are:
   a. Founding of LGBTQ+ organizations: In the 1990s, the first LGBTQ+ organization, the AIDS Bhedbhav Virodhi Andolan (ABVA), was founded in Delhi to fight against discrimination and violence faced by the LGBTQ+ community.
   b. Naz Foundation's PIL: In 2001, the Naz Foundation, a non-governmental organization, filed a public interest litigation (PIL) in the Delhi High Court challenging the constitutionality of Section 377.
      i. Section 377 of the Indian Penal Code, 1860 introduced by the British colonial government said, *"whoever **voluntarily has carnal intercourse against the order of nature with any man, woman or animal**, shall be punished with imprisonment for life, or with imprisonment of either description for a term which may extend to 10 years, and shall also be liable to fine."*

Click Here for INDEX

ii. It led to the criminalization of homosexuality/ same-sex relationships.

c. **Naz Foundation v. Govt. of NCT of Delhi (2009):** The Delhi High Court declared Section 377 unconstitutional and decriminalized homosexuality. However, the Supreme Court in 2013 overturned the Delhi High Court's judgment and reinstated Section 377.

d. **National Legal Services Authority (NALSA) vs. Union of India & Others (2014):** The court recognized **transgender** individuals as a **distinct third gender.** Also, transgender individuals are **entitled to fundamental rights** guaranteed under the Indian Constitution.

e. **Navtej Singh Johar & Ors. v. Union of India (2018):** The Supreme Court of India partially struck down Section 377 of the Indian Penal Code, decriminalising same-sex relations between consenting adults.

i. The Court, however, upheld provisions in Section 377 that criminalise non-consensual acts or sexual acts performed on animals.

ii. It found that Section 377 discriminates against individuals on the basis of their sexual orientation and/or gender identity, violating **Articles 14 and 15** of the Constitution. Further, they ruled that Section 377 violates the rights to life, dignity and autonomy of personal choice under **Article 21**. Finally, they found that it inhibits an LGBT individual's ability to fully realize their identity, by violating the right to freedom of expression under **Article 19(1)(a).**

3. Trump's executive order on gender

1. On his very first day in office, US President Donald Trump issued a slew of executive orders which rolled back protections to LGBTQIA+ persons extended by the Biden administration

2. According to the order, "it is the policy of the United States to **recognize two sexes, male and female"**, and that the term **"gender identity"** is **"disconnected from biological reality and sex".**

3. **Sex vs Gender:**

Aspect	Sex	Gender
Definition	Biological characteristics that define male and female bodies.	Social and cultural roles, behaviours, and identities that societies consider appropriate for men and women.
Attributes	Chromosomes, hormones, genitalia.	Expectations, roles, norms, and behaviours.
Determination	Assigned at birth based on physical anatomy.	Can be self-identified and may differ from the sex assigned at birth.
Categories	Male, Female, Intersex.	Man, Woman, Non-binary, Genderqueer, etc.
Fluidity	Generally considered fixed and binary (although intersex variations exist).	Can be fluid and encompass a spectrum of identities.
Influence	Biological and physical factors.	Social, cultural, and individual factors.

This distinction between sex and gender plays a significant role in the foundation of the LGBTQ movement, as **gender identity** (how one identifies) may not align with **sex assigned at birth.** Also, **sexual orientation** (who one is attracted to) is independent of both sex and gender.

3. **What are the expected implications of the order in the US**?

a. **Protection of women's rights**: By preventing men to self-identify as women and gain access to **intimate spaces** like washrooms and **activities designed for women** such as sports events.

b. **Cut in federal funding**, for schools that were "**pushing radical gender ideology".**

c. **Government-issued identification documents** including passports and visas will only **reflect the sex a person is assigned at birth**, and not their gender identity.

d. **Changes to Federal medical insurance coverage**, which could no longer include costs for gender-affirming care, including hormone therapy and gender affirming surgeries.

4. Report "Takers not makers: The unjust poverty and unearned wealth of colonialism"

1. **In January 2025, Oxfam International published** a report titled **"Takers Not Makers: The Unjust Poverty and Unearned Wealth of Colonialism"**
2. It highlighted rising global inequality, where billionaires' wealth grows while the poor face continued hardship, with historical colonialism fueling this divide.

Key Highlights of Oxfam's Report:

1. **Billionaire Wealth Growth:**
   a. Billionaire wealth rose by USD 2 trillion in 2024, creating **204 new billionaires**.
   b. Wealth of billionaires grew **3 times faster in 2024** compared to the previous year.
   c. Each billionaire's fortune increased by **USD 2 million daily**.
2. **Rising Inequality:**
   a. **Richest 1%** own **45% of global wealth**.
   b. **3.6 billion people** live on less than **USD 6.85/ day** (PPP).
   c. **1 in 10 women** globally live in extreme poverty.
   d. Gaps between the **richest 10% and the poorest 50%** have grown, with the wealth disparity increasing from **18 times** in 1820 to **38 times** by 2020.
3. **Colonial Legacy and Power Imbalances:**
   a. The global wealth gap is driven by the benefits the richest nations and individuals still enjoy due to **colonial exploitation**.
   b. Financial systems transfer **USD 30 million/hour** from the **Global South** to the **Global North**.
   c. Between **1765-1900**, the UK extracted **USD 64.82 trillion** from India.
4. **Inheritance:**
   a. **60% of billionaire wealth** stems from inheritance, cronyism, or monopolies.
   b. In **2023**, more billionaires were created through inheritance than through entrepreneurship.
5. **Recommendations:**
   a. Governments should promote **South-South cooperation** and dismantle colonial-era systems.
   b. **Progressive taxation** should be implemented to combat extreme wealth inequality.
   c. Establish **global and national goals** to reduce inequality and improve the wellbeing of the poor.

Click Here for INDEX

About Oxfam International

1. It was was **formed in 1995.**
2. It is a **group of NGOs working to reduce global poverty** and injustice.
3. It operates in **79 countries, including India.**
4. Focus areas include emergency relief, livelihood rebuilding, and advocating for lasting change, with women's rights as a core issue.

What is Global Inequality?

Global inequality refers to the **unequal distribution of resources**, **opportunities**, and **power** across the world. It creates a major barrier to tackling **poverty** and improving **human wellbeing**.

1. Since the 1990s, inequality between countries has reduced, particularly due to rapid growth in **China** and other emerging Asian economies.
2. However, there are still significant disparities (e.g., North America's average income is **16 times higher** than sub-Saharan Africa's).
3. **Income Inequality Within Countries** has worsened globally. **71%** of the global population lives in countries where **income inequality has increased**.

Drivers of Inequality

1. **Gender, race, ethnicity, and geography** contribute to ongoing inequality.
2. Women face income inequality and perform **12.5 billion hours** of unpaid care work daily.
3. Growth has often benefited the wealthiest, exacerbating **wealth concentration** and **crony capitalism**.
4. Taxes and weak social safety nets often burden vulnerable populations and benefit the wealthy.

Click Here for INDEX

5. **Climate change** and **technology** both have the potential to worsen inequality by affecting marginalized groups.

Trends of Inequality in India:

1. **Gini Coefficient**: India's Gini coefficient in 2023 stands at **0.410**, indicating a high level of inequality.

The **Gini Coefficient** (or **Gini Index**) is a statistical measure of **income inequality** within a population. It represents the **distribution of income or wealth** across a society and shows how unequal that distribution is.

1. **Value Range**: The Gini coefficient ranges from **0 to 1**:
   a. **0** represents perfect equality (everyone has the same income or wealth).
   b. **1** represents perfect inequality (one person has all the income or wealth, and everyone else has none).
2. **Interpretation**:
   a. A Gini coefficient closer to **0** means more equality in income distribution.
   b. A Gini coefficient closer to **1** means greater inequality, where wealth or income is highly concentrated among a small segment of the population.

2. **Income Distribution**:
   a. **Top 10%** hold **77% of wealth**, and the top **1%** own **53%**.
   b. The **bottom 50%** hold only **13%** of the national income.
3. **Factors Driving Rising Inequality**:
   a. **COVID-19** worsened the wealth gap.
   b. **Regressive taxes**: The bottom 50% pay **64% of GST**, while the top 10% pay just **4%**.
   c. **Neglected sectors**: Agriculture and small-scale industries face poor wages, limiting social mobility.
4. **India's Inequality Initiatives**:
   a. **MGNREGA** (Mahatma Gandhi National Rural Employment Guarantee Act)
   b. **PMEGP** (Prime Minister's Employment Generation Programme)
   c. **DAY-NULM** (Deendayal Antyodaya Yojana)
   d. **Samagra Shiksha Scheme**
   e. **Mission Ayushman** and **Pradhan Mantri Jan Dhan Yojana** are examples of India's efforts to reduce inequality.

Wealth Drain from India During the Colonial Period

Dadabhai Naoroji's **"Drain of Wealth"** Theory:

a. **High Taxes:** Excessive land revenue drained agricultural income.
b. **Trade Exploitation:** India supplied raw materials while importing British goods, leading to the collapse of local industries.
c. **Industrial Contribution**: In 1750, India contributed 25% to global industrial output, which fell to 2% by 1900.

5. Prospects for Children in 2025: Building Resilient Systems for Children's Futures

1. **In 2025, UNICEF** published a report (Prospects for Children in 2025: Building Resilient Systems for Children's Futures).
2. It is a series of Global Outlook reports produced each year by UNICEF.
3. It tells that the **world is facing a new and intensifying era of crisis for children**.
4. Many of these crises including climate change, conflict and economic instability are closely interconnected.
5. It also highlights the transformative **role of Digital Public Infrastructure (DPI) in delivering digital public** services that benefit children's well-being.
6. The report tells **how DPI can ensure equitable access to essential services**, improve education and healthcare, and promote inclusion.

Key Highlights of the UNICEF Report on Children's Challenges:

1. In 2023, 473 million children **(over 1 in 6 globally) lived in conflict zones**, nearly doubling since the 1990s.
2. Children in conflict face risks such as displacement, starvation, disease, and psychological trauma.
3. 400 million children live in countries burdened by debt, limiting investments in essential services like **education**, **healthcare**, and **social services**.

4. **Debt servicing** now outpaces social protection by 11 times, leaving 1.8 billion children vulnerable to economic shocks and poverty.
5. A **5% rise in debt for low- and middle-income countries** could reduce education spending by USD 12.8 billion.
6. Only 2.4% of global climate finance is directed towards **child-responsive initiatives**, weakening services crucial for children's welfare.
7. Climate disasters are increasingly affecting children's health, education, and psychological well-being.
8. A **digital divide** exists, with **high-income countries** offering more internet access to youth (15-24 years) compared to only **53% of youth in Africa**.
9. **Adolescent girls** and **children with disabilities** are particularly impacted by digital exclusion, with **9 out of 10 adolescent girls** in low-income countries offline.

What is Digital Public Infrastructure (DPI)?

DPI refers to a **set of shared digital systems** designed to deliver and provide equitable access to **public and/or private services** at a societal scale. The **DPI ecosystem** consists of:

1. **Technology**: Digital tools and platforms.
2. **Markets**: Access to services and resources.
3. **Governance**: Policies and regulations that ensure fair use and accessibility.

Role of DPI in Children's Well-being:

1. **Digital IDs** linked to civil registration systems provide children with lifelong access to essential services like healthcare, education, and social welfare
2. DPI platforms such as **DIKSHA** (India's national digital education platform) help bridge educational gaps by making learning resources accessible to children, even in remote areas.
3. **Electronic Health Records (EHRs)** and systems like the **Electronic Immunization Registry** in Jamaica ensure **better healthcare delivery** for children by improving tracking and vaccination rates.
4. DPI fosters **financial literacy** by enabling children to participate in the **digital economy**, promoting skills for future financial independence.
5. DPI strengthens **social protection systems** by enabling **targeted delivery** of benefits and improving **data sharing** for child services (e.g., health, education, welfare).

About UNICEF

1. **Established**: 1946, originally to support children affected by World War II.
2. **Global Presence**: UNICEF operates in over **190 countries**, including **India**.
3. **Mandate**: Protect children's rights, provide aid, and advocate for global child welfare.
4. **Funding**: Supported by voluntary contributions from governments, foundations, private sector, and individuals.
5. **Awards**: Nobel Peace Prize (1965), Princess of Asturias Award (2006), Indira Gandhi Prize (1989).

UNICEF and India: Key Contributions:

1. **ICDS (Integrated Child Development Services)**: UNICEF played a crucial role in launching ICDS in **1975**, reaching nearly **40 million children**.
2. **Polio Campaign**: Helped eliminate polio in India by **2012**.
3. **Maternal and Child Nutrition (2013)**: Promoted **nutrition awareness** to reduce **Maternal Mortality Rate (MMR)** and **Infant Mortality Rate (IMR)**.
4. **India Newborn Action Plan (2014)**: Launched to reduce **neonatal mortality** and **stillbirths**.
5. **Guiding Framework**: Works in line with the **Convention on the Rights of the Child** (1989), ratified by India in **1992**.

Challenges Faced by Children in Contemporary India:

1. **Climate & Environmental Hazards**:
   a. **India ranks 26th** in the Children's **Climate Risk Index**.
   b. **Heatwaves**, **floods**, and **air pollution** severely impact children's **health** and **education**, especially in **rural** and **low-income areas**.
2. **Child Trafficking**: India faces widespread **child trafficking**, exploiting children for **labor**, **sexual services**, and **child pornography**.
3. **Child Labor**:
   a. **10.1 million children** (5-14 years) work, mostly in **agriculture**, **domestic work**, and **small industries**.
   b. **Recent amendments** to child labor laws allow children to work in family enterprises, potentially leading to **exploitation**.

Click Here for INDEX

4. **Juvenile Crimes**: **30,555 juvenile crimes** in India (2022), linked to **poverty** and **lack of education**.
5. **Child Marriage**: **India ranks 4th** in South Asia for **child marriage**, which restricts **education** and **health** opportunities, especially for girls.
6. **Gender Inequality**: Girls from **low-income** or **rural areas** face **school dropouts**, **early marriage**, and **poor healthcare**.
7. **Disadvantaged Children**: Children from **rural** areas, **slums**, and marginalized communities face severe deprivation in **education**, **nutrition**, **sanitation**, and **clean water**.
8. **Population Growth**: By 2050, India will have **350 million children**, accounting for **15% of the global child population**.
9. This requires **climate-resilient**, **child-friendly urban planning** as urbanization increases.

India's Initiatives for Child Welfare:

1. **Saksham Anganwadi & Poshan 2.0**: Focuses on child nutrition and early childhood education.
2. **Mission Vatsalya:** Aims at child protection and welfare, with a focus on children in need of care and protection.
3. **Beti Bachao Beti Padhao:** Promotes gender equality and the empowerment of girls.
4. **PM CARES Fund:** Provides emergency relief, including support for children during crises.
5. **DIKSHA** (Digital Infrastructure for Knowledge Sharing): Enhances education access via digital platforms.
6. **The Right to Education Act (2009):** Ensures free and compulsory education for children aged 6-14.
7. **Child Labor (Prohibition & Regulation) Act (2016)**: Protects children from exploitation through labor.
8. **National Child Labour Project (NCLP) Scheme (1988)**: Focuses on rehabilitating children involved in labor.
9. **Juvenile Justice (Care & Protection of Children) Act (2015)**: Addresses care and protection for children in conflict with the law.

6. UDISE+ 2023-24 Report

1. In January 2025, the **Unified District Information System for Education Plus (UDISE+) 2023-24** report, released by the Ministry of Education (MoE).
2. It provides comprehensive data on student enrolment trends, dropout rates, and school infrastructure across India.
3. For the **first time**, individual student-wise data has been collected at the national level since 2022-23, aligning with the recommendations of the National Education Policy (NEP) 2020.

What is UDISE+?

1. The **Department of School Education & Literacy (DOSEL)** introduced **UDISE+** in 2018-19 to streamline the collection of educational data.
2. Schools upload their data online, which is verified at multiple levels—Block, District, and State—ensuring accuracy.
3. The system provides essential data for improving the quality of education from pre-primary to higher secondary levels.

Key Findings of UDISE+ 2023-24

1. Student Enrolment Trends

a. **Overall Decline**: Total enrolment dropped to **24.8 crore** in 2023-24, a decrease of **1.55 crore students** (around **6%**) from **25.18 crore** in 2022-23 and **13.53 crore** in 2018-19.

b. **Class-Wise Trends**:

i. **Primary, Upper Primary, and Secondary Levels**: Saw notable enrolment declines.

ii. **Pre-Primary and Higher Secondary Levels**: Experienced an increase in enrolment.

c. **Gender Disparities**:

i. Boys' enrolment dropped by **4.87%**, from **13.53 crore** in 2018-19 to **12.87 crore** in 2023-24.

ii. Girls' enrolment dropped by **4.48%**, from **12.49 crore** in 2018-19 to **11.93 crore** in 2023-24.

iii. Boys represented **51.9%** of the total enrolment, while girls made up **48.1%**.

d. **State-Wise Declines**:
   i. **Bihar**: **35.65 lakh** student drop.
   ii. **Uttar Pradesh**: **28.26 lakh** student drop.
   iii. **Maharashtra**: **18.55 lakh** student drop.

e. **Minority Representation**: Minority enrolment stood at **20%**, with **Muslims** representing **79.6%**, **Christians 10%**, **Sikhs 6.9%**, **Buddhists 2.2%**, **Jains 1.3%**, and **Parsis 0.1%**.

f. **Caste-Wise Enrolment**:
   i. **Scheduled Castes (SC)**: Decline from **4.59 crore** in 2022-23 to **4.47 crore** in 2023-24.
   ii. **Other Backward Classes (OBC)**: Decline from **11.45 crore** in 2022-23 to **11.2 crore** in 2023-24.

2. Dropout Rates and Retention

a. **Zero Dropout at Foundational Level**: The **pre-primary to Class 2 levels** maintained a zero-dropout rate due to transitions from **Anganwadis** and private pre-primary schools.

b. **High Dropout at Secondary Level**: The highest dropout rates were observed in **Classes 9 to 12**, influenced by socio-economic factors, early marriages, and lack of interest in studies.

c. **National Trends**:
   i. **Girls**: Over **80%** completed secondary education in 2024, up from **73.5%** in 2019.
   ii. **Boys**: The completion rate improved from **72.4%** in 2019 to **77.2%** in 2024.

3. State-Wise Completion Rates (2019 vs 2024)

a. **Worsening Dropout Rates**:
   i. **Bihar**: Girls' completion rate dropped from **51.6%** to **40.3%** and Boys' from **51.2%** to **38.8%**.
   ii. **Karnataka**: Girls' completion rate decreased from **79.3%** to **76.5%**, and Boys' from **73.6%** to **70.7%**.

b. **Improving Completion Rates**:
   i. **Kerala**: Boys and Girls at the **Upper Primary Level** showed near-perfect completion rates (**99.6%** and **100%**). At the **Secondary Level**, boys moved from **88.3%** to **95.7%**, and girls from **93.2%** to **97.5%**.
   ii. **Tamil Nadu**: Upper Primary boys (100%) and girls (100%), with secondary boys increasing from **81.3%** to **89.2%** and girls from **89.4%** to **95.6%**.

4. Gross Enrolment Ratio (GER) showed a slight decline at most education levels except for the **secondary level,** where the **ratio improved**.
- GER measures enrolment at a specific education level compared to the age-appropriate population.

5. Teacher Statistics

a. **Pupil-to-Teacher Ratio (PTR)**: The average PTR across most states is within the recommended norm of **30:1**. States like **Chandigarh** and **Delhi** had high student numbers per school but maintained optimal PTRs.

b. **Teacher Distribution**: Teachers were concentrated at the **primary education** level, with the following social category distribution:
- **41% General**, **39% OBC**, **12% SC**, and **8% ST**.

6. School Infrastructure

a. **Infrastructure Gaps**:
   i. **Functional Computers**: Available in **57%** of schools.
   ii. **Internet Access**: Provided in **54%** of schools.
   iii. **Accessibility (Ramps)**: Present in **52%** of schools.
   iv. **Basic Amenities**: Over **90%** of schools have essential facilities like **electricity** and **gender-specific toilets**.

b. Some states, like **Assam**, **Odisha**, and **Karnataka**, reported **underutilization** of infrastructure, indicated by low student-to-school ratios.

7. Challenges Faced by the Education System

a. **Unequal Access**: Rural areas often lack access to quality schools, and financial pressures prevent many children from attending.

b. **Low Education Quality**: Many teachers are not adequately trained, and outdated teaching methods persist, with an emphasis on memorization.

c. **High Dropout Rates**: Socio-economic pressures, early marriages, and lack of interest contribute to the high dropout rates, particularly in higher classes.

Click Here for INDEX

d. **Infrastructure Deficiencies**: Many schools still lack basic facilities like clean toilets, safe drinking water, and electricity. Modern technology is rarely available.
e. **Overloaded Curriculum**: The syllabus is packed, which adds pressure on students without allowing for creative or practical learning.
f. **Limited Resources**: Inadequate funding leads to teacher shortages and a lack of learning materials.
g. **Digital Divide**: Rural schools are disproportionately affected by the lack of access to modern technology, creating a gap in educational opportunities.

Government Initiatives and Policies

1. **Right to Education (RTE) Act, 2009**: Ensures free and compulsory education for children aged 6 to 14.
2. **Mid-Day Meal Scheme**: Provides free lunches to students in government schools to improve attendance and nutrition.
3. **National Scheme for Girls' Secondary Education**: Offers financial support to rural girls to continue their education.
4. **Digital India Programme**: Promotes technology use in education to bridge the digital divide.
5. **Swachh Vidyalaya Abhiyan**: Focuses on providing clean toilets, drinking water, and sanitation, particularly benefiting girls.
6. **New Education Policy (NEP) 2020**: Focuses on early childhood education, critical thinking, and a new 5+3+3+4 school structure.
7. **Scholarships and Financial Support**: Various schemes, like Pre-Matric and Post-Matric scholarships, provide financial assistance to low-income families.

7. Annual Status of Education Report (ASER) 2024

What is the Annual Status of Education Report (ASER)?

1. The Annual Status of Education Report (ASER) is a nationwide citizen-led household survey that provides a snapshot of **children's schooling and learning in rural India**.
2. It is conducted by **Pratham, a non-governmental organization** since **2005**.
   a. The ASER was conducted annually from 2005 to 2014, but since 2016, it has been released every **two years**.
   b. Due to the pandemic there was no nationwide field ASER in 2020. Post COVID, ASER was done in 2022 and now in 2024.
3. It measures **basic reading** and **arithmetic levels** among school children, **attendance** in school and other indicators. ASER reports are usually referred to by the government while **formulating policies**.

What are the key features of the methodology of ASER?

1. **Household survey** of a representative sample of rural children of India. Every rural district visited. It is divided into:
   a. Young children (under 6)
   b. School going children (age 6-14)
   c. Older children (age 15-16)
2. **Sampling:** Using Census 2011 frame, **30 villages** are randomly selected in each district and **20 households** are randomly selected in each village
3. **Assessment: One-on-one assessment** with each child on Basic reading and arithmetic for all (age 5-16) and 'Beyond Basics' (for age 14-16 only)
4. **Partners:** In each rural district, a district level organization or institution conducts ASER such as colleges, universities, NGOs, teacher training institutions etc.

Current Context

1. In January 2025, the **Annual Status of Education Report (ASER) 2024** that captures the status of **children's enrollment and learning outcomes** in rural India was released.
2. The 2024 ASER survey reached **6,49,491 children in 17,997 villages across 605 rural districts**. ASER 2024 is the **14th** nationwide field-based ASER survey.
3. The findings of this report are crucial because it is only the **second such report** after the Covid-19 pandemic, the last one being 2022.
4. As per the report, school education has either **recovered from the pandemic's losses or is on its way to doing so**.

Key findings of the report

1. **Improvement in Learning Outcomes**
   a. **Reading and Arithmetic Recovery**: After the pandemic-related "learning loss," improvements were observed in reading and arithmetic across all surveyed grades (Std III, V, and VIII).
      i. **Arithmetic**:
         - The percentage of Std III children able to perform at least subtraction increased from **25.9%** in 2022 to **33.7%** in 2024.
         - Std V children solving a 3-digit by 1-digit division problem rose from **25.6%** in 2022 to **30.7%** in 2024.
      ii. **Reading**:
         - Std III children able to read at least a Std II level text rose from **20.5%** in 2022 to **27%** in 2024.
         - Std V children increased from **42.8%** in 2022 to **48.8%** in 2024.
   b. **Government vs Private Schools**: While government schools showed faster recovery in learning outcomes, they still lag behind private schools in absolute terms. In 2024, **44.8%** of government school children in Std V could read a Std II-level text, up from **38.5%** in 2022, though still lower than the **59.3%** in private schools (2024).
2. **Enrollment Trends**
   a. **Early Childhood Education**: Enrollment in preschool programs for children aged **3-5** is high, near **80%** for ages 3 and 4.
   b. **Ages 6-14**: The overall enrollment rate remains very high at **98%**.
   c. **Ages 14-16**: The percentage of out-of-school children in this age group has dropped to **8%** or less, with the gender gap narrowing to under **1%**.
   d. **Private Schools**: Enrollment in private schools increased from **25.1%** in 2022 to **30.6%** in 2024, likely due to improved income levels in rural areas post-pandemic.
3. **Attendance**
   a. **Student Attendance**: Increased from **72.4%** in 2018 to **75.9%** in 2024.
   b. **Teacher Attendance**: Increased from **85.1%** in 2018 to **87.5%** in 2024.
4. **Digital Access and Skills**
   a. **Smartphone Access**: Over **90%** of rural adolescents have access to smartphones.
   b. **Digital Skills**: About **82.2%** of children know how to use a smartphone. However, gender gaps persist, with **36.2%** of boys and **26.9%** of girls owning smartphones. Additionally, **80.1%** of boys (ages 14-16) could browse for information compared to **78.6%** of girls.
   c. **Usage**: **57%** of teenagers use smartphones for educational purposes, while **76%** use them for social media.
5. **School Facilities**
   - **Improvements in Facilities**: School facilities have consistently improved, with **79%** of schools now having usable toilets, up from **74.2%** in 2018. The percentage of schools without libraries decreased from **25.8%** in 2018 to **17.5%** in 2024.

What impact does the National Educational Policy 2020 have on the positive learning outcomes as seen in ASER 2024?

1. Since the launch of the **National Education Policy in 2020**, high priority has been placed on helping children in early grades in primary school acquire **foundational literacy and numeracy (FLN) skills**.
   a. The **National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN) Bharat** was launched in 2021 for improving these skills. It aims to achieve Foundational Literacy and Numeracy by **2026-27**, were, by **Grade 3 (age 8)** every child can:
      i. Read with comprehension
      ii. Write
      iii. Perform basic mathematical operations
      iv. Learn basic life skills
2. The ASER survey found that at the all-India level, **83% of schools** said they **received directives** from the government to implement FLN activities. Around 78% said that at least one teacher in the school had been **trained on FLN**, while 75% also **received relevant learning material**.

Click Here for INDEX

3. **Three month "school readiness"** programs for incoming Std I children are also being conducted in government primary schools.
4. Due to these **efforts under the NEP 2020**, there have been improvements in the learning outcomes of children.

What is the National Education policy, 2020?

1. The **National Education Policy (NEP) 2020** is India's most comprehensive education reform policy, replacing **the NEP 1986**. It aims to transform the Indian education system to make it **more holistic, flexible, multidisciplinary, and aligned with 21st-century needs**.
2. **Key Highlights of NEP 2020**
   - a. **School Education Reforms**
     - i. New 5+3+3+4 Structure (Replaces the 10+2 system)
     - ii. Emphasis on Foundational Literacy & Numeracy (FLN) by Grade 3
     - iii. Multilingualism – Mother tongue/regional language as the medium of instruction till at least Grade 5
     - iv. Vocational Education from Grade 6 onwards (includes coding, internships)
   - b. **Higher Education Reforms**
     - i. Holistic & Multidisciplinary Education – No rigid subject divisions
     - ii. Multiple Entry & Exit Options
     - iii. Academic Bank of Credits (ABC) – Digital record of students' credits to enable flexibility
     - iv. Foreign Universities – Top global universities allowed to set up campuses in India
   - c. **Digital & Technology Integration:** such as, National Educational Technology Forum (NETF) to improve e-learning
   - d. **Governance & Implementation**
     - i. Higher Education Commission of India (HECI) – Single regulator for higher education (excluding medical & law)
     - ii. Aim to increase Gross Enrollment Ratio (GER) to 50% by 2035

What are the challenges that persist as per ASER 2024?

1. **Learning gaps are still present:** Despite the improvements, in **absolute terms** the learning outcomes are poor.
   - For instance, 76.6% of Class III government school students and 55.2% of Class V government schools students are still unable to read Class II text.
2. **Disparities between states:** For instance, in standard III, reading ability in more than half the states was behind 2018 levels in 2024.
3. **Gender Gaps:** For instance, there is a gender gap in **smartphone ownership**, with 36.2 per cent of boys and 26.9 per cent of girls reporting owning one. Also, **80.1% of boys** (ages 14 to 16) could browse for information, against **78.6% of girls**.
4. **Infrastructure gaps:** Despite progress, school infrastructure in rural areas remains inadequate. For instance, as of 2024 only 77% of the schools had **drinking water facilities** and only 79% of schools had **usable toilets.**

Way forward

1. **Addressing Poor Learning Outcomes:** Implement remedial programs like **Teaching at the Right Level (TaRL)** and **activity-based learning** in classrooms**.**
2. **Strengthening Foundational Literacy & Numeracy (FLN):** Effective implementation of **NIPUN Bharat (FLN Mission),** more focus on interactive learning, phonics-based reading etc.
3. **Improving Teacher Training:** This can include training to use technology-based tools for teaching.
4. **Bridging the Digital Divide:** This can be done through affordable devices & internet connectivity in rural areas, inclusion of digital literacy as part of the curriculum etc.
5. **Improving School Infrastructure & Resources:** Through 100% electrification of schools, construction of toilets, libraries etc.

8. 76th Republic Day of India, 2025

1. The Republic Day is celebrated on **January 26th** to commemorate the day when the Constitution of India came into effect in **1950**. With this India declared itself as a **Sovereign, Democratic and Republic state**.

a. **Republic means a** state in which supreme power is held by the **people and their elected representatives**, and which has **an elected or nominated president** rather than a monarch. **Examples of republics** include India, USA, France, Germany, South Korea etc.

Historical Background

1. The Constituent Assembly of India **passed and adopted** the Constitution on the **26th of November 1949**. The process was spearheaded by the **Drafting Committee** under the chairmanship of **Dr. B.R. Ambedkar**.
   a. The process of making constitution took **2 years, 11 months and 18 days.**
   b. While India obtained independence on August 15, 1947, it was not until three years later, on January 26, 1950, that the country formally approved its Constitution and became a republic.
2. Later, on **26th January 1950** the Constitution of India came into effect, replacing the Government of India Act, 1935, thus turning the nation from a **dominion** into a **republic,** following its independence from the **British Raj in 1947.**
   - A few provisions of the Constitution such as **citizenship, elections and provisional Parliament** came into force on **26th November 1949**. However, **the majority of the constitution** came into effect on 26th January 1950 with Rajendra Prasad becoming the **first President** of India.

Why were 26th January chosen to be India's Republic Day?

1. On **December 31, 1929**, on the banks of the river Ravi, during the **Lahore session** of the Indian National Congress, Jawaharlal Nehru hoisted the tricolour and demanded **"Poorna Swaraj" or complete self-rule**. The date set for independence was **January 26, 1930**, which was celebrated as Poorna Swaraj day for the next 17 years.
   - In other words, this date was chosen because the Indian National Congress had proclaimed Purna Swaraj (complete independence) on that date in 1930.

What are events in the Republic Day Celebrations?

1. **Flag hoisting**: The President of India hoists the national flag, followed by a 21-gun salute by the Indian Army Regiment of Artillery.
2. **Chief Guest tradition:** A foreign dignitary is invited as the Chief Guest each year, symbolizing India's diplomatic ties.
3. **Republic Day Parade:** The grand parade follows a historic route, starting at Rashtrapati Bhavan, proceeding along Kartavya Path, passing India Gate, and concluding at the Red Fort. It includes:
   a. **Military might**: Display of advanced weapons, tanks, and aircraft.
   b. **Tableaux:** Tableaux from various states highlight their unique heritage
4. **Cultural Performances**: Vibrant cultural programs by schoolchildren, folk dance troupes, traditional music etc.
5. **Beating Retreat Ceremony**: The Republic Day Celebrations comes to a close with the 'Beating Retreat Ceremony', which is held **every year on the 29th of January** at Vijay Chowk.
   a. It symbolizes the tradition of soldiers calling a close to the war at sunset.
   b. On the day of the Beating Retreat in Delhi, at 6.15 o'clock in the evening the bugles call the retreat sound, and the National Flag is lowered, and the National anthem is sung in musical harmony.
6. **Awards ceremony:** The President of India confers the **Padma awards** and **Gallantry wards** such as **Param Vir Chakra (highest military honor) and Ashok Chakra (highest peacetime gallantry award).** The **Rashtriya Bal Puraskar** awards are also given to recognize children who have performed acts of bravery and meritorious service.
   - **Padma Vibhushan** is awarded for "*exceptional and distinguished service*" and is the second highest civilian honor
   - **Padma Bhushan** is awarded for "*distinguished service of a high order*" and is the third highest civilian honor
   - **Padma Shri** is awarded for "*distinguished service*" and is the fourth highest civilian honor

Click Here for INDEX

Click Here for INDEX

What are the details about the chief guest tradition?

1. The tradition is a symbol of India's **spirit of diplomacy and global cooperation.**
2. The selection process takes around **six months** which takes into consideration aspects such as **current relationship** with the concerned country, political, economic, military, and commercial **interests of India** and **availability** of the concerned Chief Guest.
3. The candidates are based on a short list prepared by the **Ministry of External Affairs.**

76th Republic Day celebrations, 2025

1. In 2025, India celebrated its 76th Republic Day under the theme ***"Swarnim Bharat: Virasat aur Vikas" (Golden India: Legacy and Progress)***, which highlighted India's rich cultural heritage and its aspirations for a brighter future.
2. This year also marked **75 years** since the commencement of the Indian Constitution.
3. This year, the **chief guest for India's Republic Day celebrations** was **H.E. Prabowo Subianto**, the President of Indonesia.
   - Notably, Subianto became the **fourth Indonesian president to attend India's Republic Day.** Indonesia's first president, Sukarno, was the chief guest at India's inaugural Republic Day celebrations in 1950.
   - Subsequent Indonesian presidents, Susilo Bambang Yudhoyono in 2011 and Joko Widodo in 2018 (alongwith other ASEAN heads of state).
4. Year 2025 also marks the **76th anniversary of diplomatic ties** between **India and Indonesia.**
5. **Tableaux:** 31 tableaux from State Governments/ Union Territories and Central Governments will participate in the parade. The highlights included showcasing 75 years of the Constitution of India and 150th birth anniversary of Bhagwan Birsa Munda, Sardar Vallabhbhai Patel and India Meteorological Department.
6. **Bharat Parv:** It was organized at the Red Fort from January 26-31, 2025, by the Ministry of Tourism. It will feature cultural performances, handicraft exhibitions, pan-India cuisines and more.
7. **Veer Gatha 4.0:** It was organized to inspire and spread awareness among children about the gallant deeds and sacrifices of the Armed Forces.
   - The event was organised by the Ministry of Defence in collaboration with the Ministry of Education during **16 September to 31 October 2024.**
8. **Beating Retreat Ceremony:** During the Beating Retreat Ceremony - 2025, only Indian tunes are to be played by all the participating bands.

75th Republic Day

1. In 2024, India celebrated its 75th Republic Day under theme 'Viksit Bharat' (Developed India) and 'Bharat - Loktantra ki Matruka' (India as the mother of Democracy).
2. The French President, Emmanuel Macron, was the chief guest
3. For the first time, women lead the Republic Day Parade in 2024.

Republic Day Parade 2025: Results for Best Marching Contingents and Tableaux

Marching Contingents Awards:

Category	Award
Best Marching Contingent among Services	Jammu & Kashmir Rifles Contingent
Best Marching Contingent among CAPFs/other auxiliary forces	Delhi Police Marching Contingent

Top Three Tableaux (States/Union Territories):

Rank	State/UT	Tableau Theme
1st	Uttar Pradesh	Mahakumbh 2025 - Swarnim Bharat: Virasat aur Vikas
2nd	Tripura	Eternal Reverence: The worship of 14 Deities in Tripura - Kharchi Puja
3rd	Andhra Pradesh	Etikoppaka Bommalu - Eco-Friendly Wooden Toys

Best Tableau from Central Ministries/Departments:

Ministry/Department	Tableau Theme
Ministry of Tribal Affairs	Janjatiya Gaurav Varsh

Special Prizes:

Recipient	Theme
Central Public Works Department	75 years of Constitution of India
'Jayati Jai Mamah Bharatam' Dance Group	(Cultural Performance Theme)

9. Generation Beta Era Began: India's first Gen Beta boy born in Aizawl

On January 1, 2025, the **Generation Beta Era Began**. **Frankie**, born at Synod Hospital in Durtlang, Aizawl, became the 1st baby in India to be part of Generation Beta.

What is Generation?

1. Generational cohorts (group of people who are around the same age) are groups of people born within specific time frames, sharing similar cultural, economic, and social experiences that shape their collective identity.
2. These cohorts help sociologists, marketers, and historians understand societal trends and behaviours over time.
3. The practice of naming generations began in the early 20th century. One of the earliest named cohorts is the "Lost Generation," referring to those who came of age during World War I.
4. Subsequent generations have been identified and named based on significant historical events, demographic trends, or cultural shifts.

Significance of Generational Naming

1. **Sociological Analysis:** It allows researchers to study and compare behaviours, values, and trends across different age groups.
2. **Cultural Identity:** Generational labels help individuals identify with broader societal groups, fostering a sense of belonging.
3. **Marketing and Economics:** Businesses use generational data to tailor products and services to specific age demographics.

Who Is Generation Beta?

1. **Generation Beta** refers to **children born between 2025 and 2039**. They will grow up in a world shaped by advanced technologies and global challenges. Key aspects of this generation include:
   a. **Tech-Driven Upbringing:** Immersion in artificial intelligence (AI), virtual reality (VR), and smart systems will be a defining feature of their lives.
   b. **Global Connectivity:** They will be highly connected and aware of worldwide issues.
   c. **Unique Challenges:** Mental health concerns, climate change, and navigating a digital-dominated world will be prominent.
   d. **Significant Demographics: By 2035**, they are expected to constitute **16% of the global population**.

What Makes Generation Beta Unique?

1. **Tech-Savvy and Digitally Fluent:** Generation Beta will seamlessly interact with cutting-edge technologies. Their daily lives may include:
   a. AI-powered learning tools and virtual classrooms.
   b. Autonomous vehicles and wearable health devices.
   c. Immersive experiences in the metaverse for education, socializing, and entertainment.
2. **Innovative and Adaptive:** Living in a rapidly evolving digital landscape will enhance their resilience and drive their ability to innovate.
3. **Social Awareness and Inclusivity:** A deeply connected global environment will encourage:
   a. Empathy and inclusiveness.
   b. Advocacy for diversity and the rejection of outdated societal norms.
4. **Environmentally Conscious:** This generation is likely to adopt sustainable habits and actively support environmental policies to combat climate change.

What is the role Technology in Generation Beta's Life?

1. **Education**
   a. **Personalized Learning:** AI tools will provide customized education but may affect creativity and critical thinking.

Click Here for INDEX

b. **Virtual Reality Classrooms:** Interactive and immersive VR environments will redefine traditional learning.

2. **Workplace**
   a. **Focus on Human Skills:** Automation will shift the emphasis to roles requiring creativity and emotional intelligence.
   b. **Global Collaboration:** Connectivity will foster inclusive teamwork across different regions and age groups.
3. **Instant Gratification and Adaptability**
   a. Frequent use of AI and digital platforms may encourage instant gratification.
   b. However, their adaptability and innovation will help them thrive in this fast-paced environment.

Cultural and Social Impact

1. **Breaking Traditional Norms:** Generation Beta will lead new cultural shifts:
   a. **Inclusivity:** Acceptance of diverse perspectives and lifestyles.
   b. **Eco-Consciousness:** Sustainability as a core value.
2. **Redefining Relationships:** Technology will reshape personal and professional interactions, highlighting the need for strong emotional intelligence.
3. **Challenges to Tradition:** Their progressive outlook may create generational conflicts, necessitating mutual understanding and open communication.

What challenges will Generation Beta face?

1. **Mental Health and Digital Balance**
   a. **Screen Time Effects:** Overexposure to digital platforms may lead to anxiety, social isolation, and low self-esteem.
   b. **Resilience Building:** Initiatives for mindfulness and emotional intelligence will be essential.
2. **Attention and Focus Issues:** Digital immersion might hinder long-term focus and problem-solving skills.
3. **Privacy and Ethics**
   a. **Data Privacy Concerns:** Increased reliance on AI and VR raises questions about data security.
   b. **Ethical Tech Use:** Ensuring safety and ethical boundaries in the digital space will be crucial.
4. **Sustainability and Existential Anxiety:** The urgency of climate change may cause existential stress, emphasizing the need for resilience programs.

The Evolution of Generations

Generation	Time Period	Key Characteristics
The Silent Generation	1925 - 1945	• Born during the Great Depression and World War II, this generation valued stability, hard work, and conformity. • They played a pivotal role in post-war rebuilding and establishing modern global institutions.
Baby Boomers	1946 - 1964	• Named for the significant increase in birth rates following World War II, known as **the "baby boom."** • This generation grew up during post-war economic prosperity. • In India, they witnessed the Nehruvian era, the Green Revolution, and the emergence of public institutions. • They prioritized education, family, and long-term careers, becoming significant contributors to workforce expansion and nation-building.

Generation X	1965 - 1980	• The term **"Generation X"** was popularized by **Douglas Coupland's 1991 novel *Generation X: Tales for an Accelerated Culture***. • Marked by economic and political transitions, they navigated challenges like global oil crises and liberalisation in the 1990s. • Known for their self-reliance, this generation saw the rise of consumer goods, satellite TV, and early technological advancements, shaping modern societal norms.
Millennials (Generation Y)	1981 - 1996	• This cohort reached adulthood around the turn of the millennium, hence the name "Millennials." The term gained popularity through media and literature in the 1990s. • Shaped by globalisation and the tech boom, Millennials experienced the IT revolution and the expansion of digital communication. • They embraced startup culture, international opportunities, and hybrid lifestyles blending tradition with modernity. • This generation is known for its adaptability and entrepreneurial spirit.
Generation Z	1997 - 2012	• Following Generation Y, this cohort was initially referred to as "Post-Millennials" but eventually adopted the "Generation Z" label, continuing the alphabetical sequence. • The first true digital natives, Generation Z grew up with smartphones, social media, and global connectivity. • They are vocal about social issues like climate change, mental health, and diversity, balancing pragmatism with activism. • They value authenticity and are shaping a future focused on inclusion and sustainability.
Generation Alpha	2013 - 2024	• Coined by social researcher **Mark McCrindle**, **"Generation Alpha"** begins a new naming sequence with the **Greek alphabet**, symbolizing a fresh start for the first generation entirely born in the **21st century**. • Raised in a world of AI, smart devices, and online education, Generation Alpha is highly tech-savvy. • Their formative years were influenced by global challenges like the COVID-19 pandemic and increasing digital reliance. • They are expected to develop strong problem-solving skills and environmental consciousness.
Generation Beta	2025 -2039	• The term "Generation Beta" was coined by demographer and futurist **Mark McCrindle**. Following the Greek alphabet, "Beta" represents the second letter, succeeding "Alpha." • Poised to inherit a fully automated and interconnected world, Generation Beta will prioritize sustainability, inclusivity, and global collaboration. • They will navigate challenges in an AI-dominated environment while contributing to innovations in technology and societal progress.
Future Generation	2040 - 2069	• **Generation Gamma**: Projected to include individuals born from 2040 to 2054. • **Generation Delta**: Anticipated for those born from 2055 to 2069.

Click Here for INDEX

Click Here for INDEX

Preparing Generation Beta for the Future

1. **Emotional Intelligence and Mental Health:** Encourage open communication and mindfulness.
   a. Set boundaries to balance screen time and real-world activities.
2. **Creativity and Critical Thinking:** Promote hands-on learning to complement AI tools.
   a. Teach critical evaluation of AI biases and misinformation.
3. **Eco-Consciousness:** Instill (inculcate) sustainable habits and environmental responsibility from a young age.
4. **Readiness for a Tech-Driven World:** Ensure strong digital literacy and ethical awareness in technology use.

10. New Study Reveals Iron Age began in Tamil Nadu

1. In January 2025, Tamil Nadu's Chief Minister released a report **'Antiquity of Iron: Recent Radiometric Dates from Tamil Nadu'.**
2. It is claimed that the **Iron Age began in Tamil Nadu**, dating back to the **4th millennium BCE** (around **5,300 years ago**).
3. This challenges earlier assumptions and emphasizes the importance of **Tamil Nadu** in the history of the Indian subcontinent.

What Had Research Said till Now?

1. **Historical Background**:
   a. The **use of iron** is a major technological advancement in human history.
   b. Earlier research suggested that iron technology came to India through immigrants from the **West**.
   c. Experts in the **mid-20th century** placed the origin of iron use in India at **700-600 BCE**.
   d. However, **radiocarbon dating** studies later pushed the start of iron use in India to the **16th century BCE**.
2. **Research in Uttar Pradesh**:
   a. Excavations in **Uttar Pradesh** in the late 1990s revealed iron smelting by the **13th century BCE**.
   b. Sites like **Raja Nala-ka-tila**, **Malhar**, and **Dadupur** showed **iron tools**, **furnaces**, and **tuyeres** (tools for iron working) dated between 1800 BCE and 1000 BCE.
   c. This suggested that iron smelting was widespread in the **eastern Vindhyas** and the **Central Ganga Plain** by the **early 13th century BCE**.

What About Tamil Nadu?

1. **Earlier Discoveries**:
   a. In **2022**, **Mayiladumparai** in **Krishnagiri district** was highlighted.
   b. The Chief Minister suggested the **Iron Age** in Tamil Nadu began around **4,200 years ago** (third millennium BCE).
   c. The report 'Mayiladumparai - Beginning of Agrarian Society; 4,200-year-old Iron Age Culture in Tamil Nadu' linked the start of the **Iron Age** in Tamil Nadu to the same period as the **Copper or Bronze Age** in other parts of India.
2. **Recent Findings**:
   a. The new report, 'Antiquity of Iron: Recent Radiometric Dates from Tamil Nadu', supports this timeline.
   b. It suggests that while northern India was in the **Copper Age**, southern regions like Tamil Nadu had already entered the **Iron Age** due to the **limited availability** of copper ore in the region.
   c. Excavations at sites like **Sivagalai**, **Adichanallur**, **Kilnamandi**, and **Mayiladumparai** show that the **Iron Age in Tamil Nadu** started between **3,345 BCE and 2,953 BCE**.
3. **Conclusion of Report**:
   a. Scholars now conclude that the **Iron Age in Tamil Nadu** began in the **first quarter of the 4th millennium BCE**.
   b. While these findings are important, scholars note that this does not mean the **Iron Age started** in Tamil Nadu but **coexisted** with developments in other regions.

Iron Age & Copper-Bronze Age Likely Contemporary in India:

1. The study suggests that, unlike the global progression **where the Iron Age followed the Copper-Bronze Age,** these two periods may have coexisted in India.
2. Previously, the Iron Age in India was believed to begin between 1500 BCE to 2000 BCE, shortly **after the Indus Valley Civilization.**
3. This new research challenges theories proposed by scholars like V. Gordon Childe and Mortimer Wheeler, who suggested iron technology spread from a single Western center to India.

Dating Techniques Used in Study:

1. **Radiometric Dating** is a scientific method used to determine the age of materials like rocks, fossils, or artifacts by analyzing the decay of radioactive isotopes.
2. **Accelerator Mass Spectrometry (AMS)** is a high-precision radiometric dating technique used to measure radioisotope ratios for accurate age determination.
3. **Optically Stimulated Luminescence (OSL) Analysis** is a technique that dates the last time minerals like **quartz** or **feldspar** were exposed to light or heat.

11. Classifying De-Notified, Nomadic, and Semi-Nomadic Tribes (DNTs/NTs)

For the first time, the **Anthropological Survey of India (AnSI)** and **Tribal Research Institutes (TRI)** have conducted a comprehensive classification of **268 de-notified, semi-nomadic, and nomadic tribes** across India. This study took **three years** of research.

Key Findings:

1. **179 communities** recommended for inclusion in the **Scheduled Castes (SC)**, **Scheduled Tribes (ST)**, or **Other Backward Classes (OBC)** lists.
2. **85 communities** are being recommended for classification for the **first time ever**.
3. **63 communities** were found to be **"not traceable,"** possibly due to:
   a. Assimilation into larger communities
   b. Migration to different states
   c. Changes in community names

What are De-Notified Tribes (DNTs)?

1. **Definition:** DNTs refer to communities that were once notified under the **Criminal Tribes Acts** by the British government (1871–1947). These tribes were stigmatized as criminals.
2. **Repeal of the Act:** The Act was repealed by independent India in **1952**, and these communities were "de-notified".
3. **Examples of DNTs:** Yerukulas (Andhra Pradesh), Lambadis (Andhra Pradesh), Koli (Gujarat), Banjara (Madhya Pradesh, Rajasthan), Kalbelia (Madhya Pradesh), Ramosi (Maharashtra), Domb (Odisha), Bawaria (Rajasthan), Boyas (Tamil Nadu) and Madari (Uttar Pradesh).

Issues Faced by DNTs and Nomadic Tribes

1. **Education:**
   a. **Low literacy rates** due to their migratory lifestyle and poverty.
   b. **High school dropout rates**, as these communities lack access to education and have low awareness about its importance.
2. **Health:**
   a. **Lack of awareness** about health issues, including **preventive healthcare**, immunization, and family planning.
   b. They rely on **unqualified medical practitioners** due to poverty.
3. **Economic Issues:**
   a. **Decline in traditional occupations** due to modernization and industrialization.
   b. **Loss of livelihood** due to shrinking **pasture lands**, which were used for grazing. This was worsened by government policies like the **Indira Gandhi Canal project** in Rajasthan, which led to agricultural expansion that eliminated grazing lands.
4. **Anomalies in Classification:**
   a. Communities such as **Banjara** are classified differently in different states (e.g., ST in Andhra Pradesh, OBC in several other states, and SC in some others).
   b. Some communities remain **unclassified**, despite being homogenous across states.

Click Here for INDEX

5. **Issues in Identification:**
   a. **No clear criteria** for the classification of DNTs and Nomadic Tribes, leading to inconsistent inclusion and exclusion of communities in SC, ST, and OBC lists.
   b. **Lack of data** on the exact **demography** and **geographical distribution** of nomadic tribes, making it difficult for policymakers to design targeted development schemes.

Measures Needed for the Development of DNTs/ NTs

1. **Permanent Commission:** Establish a **statutory body** led by a prominent community leader to address issues of DNTs/NTs.
2. **Rational Classification:** Standardize the classification of DNTs and Nomadic Tribes under **SC, ST, or OBC** categories, removing anomalies.
3. **Census and Survey:** Conduct a **community-based census** and socio-economic survey to gather accurate demographic and geographic data of these communities.
4. **Land and Forest Rights:** Ensure **land and forest rights** for DNTs under the **Forest Rights Act** to secure their traditional livelihoods.
5. **Education:** Establish **residential schools** specifically for DNTs/NTs to improve literacy rates and reduce dropout rates.
6. **Healthcare:** Introduce **mobile health clinics** to provide accessible healthcare services, including **preventive care** and immunization.
7. **Sub-categorization of STs:** Implement **sub-categorization** within the ST category to ensure **equitable distribution** of benefits among different groups.
8. **Political Representation:** Ensure **adequate political representation** for DNTs/NTs through **nominations** in **local bodies** and **legislative assemblies**.

The classification and development of **De-Notified, Nomadic, and Semi-Nomadic Tribes** is crucial for addressing their social and economic challenges. A **uniform, fair classification** along with targeted measures for **education**, **healthcare**, and **livelihood support** will help integrate these communities into mainstream society and improve their quality of life.

12. Saint Narahari Tirtha

Idol of Saint Narahari Tirtha has been discovered in **Simhachalam Temple**, Vishakhapatnam.

About Saint Narahari Tirtha

1. Narahari Tirtha was a prominent **Dvaita Vedanta philosopher, scholar, and saint** of the **13th century**.
2. Believed to be born in **Chikakolu town (present Srikakulam, Andhra Pradesh).**
3. He was a **disciple of Madhvacharya**, the proponent of **Dvaita Vedanta philosophy.**
4. He introduced **Yaksha Gana and Bayalu Aata** (open theatre drama) as a part of Vaishnava Bhakti Movement.
5. He was consecrated near the rock adjacent to Chakratirtha at **Hampi on the banks of river Tungabhadra.**

13. National Sports Awards

Recently, President of India presented National Sports Award 2024.

6 Categories of National Sports Awards

1. **Major Dhyan Chand Khel Ratna Award (1991-92):** Awarded for **outstanding performances in sports spanning over a period of 4 years**.
   a. Recently, it has been awarded to **Gukesh D (Chess), Harmanpreet Singh (Hockey), Praveen Kumar (Para-Athletics), Manu Bhaker (Shooting).**
2. **Arjuna Award** (1961): Awarded **for consistent good performance over a period of 4 years.**
3. **Dronacharya Award** (1985): It **is highest sports honour for coaches**.
4. **Major Dhyan Chand Award (2002):** India's highest honour for lifetime achievements in sports.
5. **Rashtriya Khel Protsahan Puruskar (2009)**: Awarded to **organisations /corporates (private & public)** & individuals for playing a role in area of sports promotion & development **over last 3 years.**

H. ETHICS

Click Here for INDEX

1. Ethical Considerations in Contemporary Foreign Aid

Foreign aid is a critical tool in the global landscape, with the ability to promote peace, security, and economic growth. However, the ethical implications of how foreign aid is administered, its motivations, and its impacts have come under intense scrutiny in recent times, particularly after the United States' temporary suspension of the **United States Agency for International Development (USAID)** operations for 90 days. This decision has sparked a broader conversation about the ethics of foreign aid and its real-world effects.

Overview of USAID

1. **USAID**, established in 1961 by an act of the US Congress, is the U.S. government's primary agency for providing civilian foreign aid.
2. With a presence in over 100 countries, USAID's mission is not only to promote democratic values and reduce poverty but also to enhance U.S. global influence and prosperity.
3. The agency operates in sectors such as economic development, healthcare, education, food security, and humanitarian assistance.

Flagship Programs of USAID include:

1. **PEPFAR**: President's Emergency Plan for AIDS Relief, focused on combating HIV/AIDS.
2. **Feed the Future**: Addressing hunger and food insecurity.
3. **Power Africa**: Expanding electricity access in Africa.
4. **Water for the World Act**: Improving water, sanitation, and hygiene services worldwide.

In 2024, USAID contributed to about **42% of all humanitarian aid** tracked by the United Nations, making it one of the largest foreign aid contributors globally.

Types of Foreign Aid

Foreign aid can be classified into several types based on its purpose and method of delivery:

1. **Multilateral Aid**: Assistance provided through international organizations like the United Nations.
2. **Bilateral Aid**: Direct aid from one government to another.
3. **Humanitarian Aid**: Emergency aid aimed at alleviating suffering during crises.
4. **Development Assistance**: Long-term aid focused on sustainable economic and social development.

Why Do Countries Provide Foreign Aid?

Foreign aid is often driven by multiple rationales that can vary from moral imperatives to strategic goals:

1. **Philosophical and Moral Arguments**:
   a. **Utilitarianism**: Aid aims to maximize overall happiness and well-being by targeting areas where it can do the most good.
   b. **Rights-Based Approach**: Ensuring basic human rights are met for all, globally.
   c. **Communitarianism**: Supporting local cultures and communities, respecting their values while aiding them.
   d. **Libertarianism**: Skepticism towards foreign aid, promoting voluntary aid only in emergencies.
   e. **Cosmopolitanism**: A global commitment to equality and shared responsibility for global issues.
2. **National Security**: Historically, foreign aid has been used to stabilize regions and prevent the spread of hostile ideologies. It has often served as a tool to maintain influence and support friendly governments, sometimes through military assistance.
3. **Economic Development**: Foreign aid is often aimed at stimulating economic growth in developing nations by funding infrastructure, healthcare, and education projects. This is seen as a win-win, as it helps the recipient nations while also creating new markets for the donor countries.
4. **Humanitarian Concerns**: Aid is also provided during times of crisis—natural disasters, armed conflicts, or other emergencies—to alleviate suffering and assist in the recovery process.

Ethical Considerations: The Positive and Negative Aspects

While foreign aid has contributed to positive changes in various regions, there are significant ethical concerns surrounding its delivery and effectiveness. Below are some positive and negative dimensions:

Click Here for INDEX

Positive Aspects of Foreign Aid

1. **Sustainable Growth**: Aid can foster long-term development by supporting projects in education, healthcare, and infrastructure.
   - For example, **India's aid to Bhutan** in the form of hydroelectric projects demonstrates how foreign assistance can contribute to sustainable growth.
2. **Food Security**: Foreign aid can also help alleviate hunger and improve agricultural productivity, such as India's support for **African agriculture**, which has led to improved food production and economic stability in vulnerable regions.
3. **Health Improvements**: Aid has been instrumental in controlling diseases and improving healthcare systems in developing countries.
   - For instance, **India's supply of affordable COVID-19 vaccines** to several nations has helped reduce the global burden of the pandemic.
4. **Disaster Response**: Quick and efficient humanitarian aid can save lives in the aftermath of natural disasters.
   - **India's response to the 2015 Nepal earthquake** and the **2023 Turkey earthquake** are examples of timely assistance that helped rebuild communities.
5. **Education and Skills Development**: Foreign aid can facilitate education and training programs, leading to long-term societal benefits. **India's ITEC program** provides skills development opportunities to individuals from developing nations, fostering capacity-building.

Negative Aspects of Foreign Aid

1. **Dependency**: Prolonged aid can create dependency, hindering the development of local governance and self-sufficiency. In many African nations, long-term foreign aid has led to economic policies that are heavily influenced by external funding, stalling independent growth.
2. **Corruption**: In many cases, foreign aid fails to reach its intended recipients due to corrupt officials diverting funds. The **Sri Lankan economic crisis** is an example where foreign aid mismanagement exacerbated the country's financial troubles.
3. **Cultural Insensitivities**: Aid projects may sometimes fail to respect local cultures and customs, leading to resistance or the failure of aid initiatives.
   - For instance, foreign-funded **women's reproductive health campaigns** in certain African and Asian countries have been met with resistance due to conflicting cultural or religious values.
4. **Political Manipulation**: Foreign aid is sometimes used as a tool for political leverage, where donor countries may tie aid to political agendas, overshadowing the needs of the recipient country. **China's "debt-trap diplomacy"** is a prime example, where investments in foreign nations have been used to gain political and economic leverage.
5. **Environmental Harm**: Some aid projects, particularly in the field of large-scale agriculture or industrialization, have led to environmental degradation. Foreign-funded **industrialization projects** in developing nations have sometimes resulted in increased pollution and environmental damage.

Moving Forward: Ethical Solutions for Foreign Aid

To address these ethical challenges, several measures can be implemented to ensure that foreign aid is used effectively and ethically:

1. **Increase Transparency**: Transparent aid allocation and management are key to ensuring accountability. Public dashboards and independent audits can provide clear visibility into how aid is distributed and its impact.
2. **Prioritize Environmental Sustainability**: Aid projects should focus on sustainable solutions such as climate resilience, renewable energy, and sustainable agricultural practices to mitigate environmental harm.
3. **Engage Local Communities**: Foreign aid initiatives should involve local NGOs, leaders, and communities in the planning and execution phases to ensure that aid is culturally appropriate and addresses real needs.
4. **Recipient-Led Aid**: Shifting the focus from donor-led to recipient-led aid allows for alignment with national goals and priorities. This ensures that aid supports long-term self-sufficiency rather than temporary relief.
5. **Leverage Technology**: Using technology for more efficient aid distribution, monitoring, and assessment can enhance transparency and improve the impact of foreign aid.
6. **Build Local Capacity**: Foreign aid should emphasize capacity-building, enabling recipient countries to become self-reliant over the long term, rather than remaining dependent on external assistance.

Foreign aid plays a crucial role in global development, from addressing humanitarian crises to promoting economic growth. However, its ethical implications cannot be overlooked. By focusing on transparency, cultural sensitivity, sustainability, and capacity-building, we can ensure that foreign aid remains a force for good—empowering recipient nations while promoting global equality and prosperity.

2. CASE STUDIES FOR PRACTICE

Case Study 1: Addressing Child Marriage in a Backward Region

Scenario:

You are appointed as the District Magistrate of a region where child marriage is still practiced as a customary tradition. Some communities justify it as a way to protect girls from social threats and ensure their safety. During a field visit, you encounter Muskan, a 13-year-old girl from a poor family of landless agricultural laborers. Her parents are pressured by the village elders to marry her off to a 30-year-old man for a sum of Rs 20,000. They argue that, in a region facing high unemployment and rising incidents of violence against young girls, this marriage would provide protection for Muskan. Despite your efforts to explain the legal and ethical consequences of child marriage, including the loss of education and the harmful physical and mental effects on Muskan, her parents remain fearful and feel powerless to oppose the community's pressure.

Ethical Dilemma:

You are caught between respecting cultural practices and your moral responsibility to protect the human rights of the vulnerable, especially the girl child. You must take action to prevent this injustice while being sensitive to the cultural and economic realities of the community.

Solution:

(a) Measures to Prevent Child Marriages:

1. **Create a Rapid Response Team**: Form a dedicated task force to identify and intervene in cases of child marriage before they occur.
2. **Mapping Vulnerable Families**: Identify families most at risk of child marriage through local social workers, health officers, and community leaders.
3. **Strengthen Support Networks**: Collaborate with NGOs and child protection organizations to enhance reporting mechanisms and ensure swift intervention.
4. **Regular Monitoring**: Use existing networks like Anganwadi workers and teachers to monitor at-risk children and raise awareness.
5. **Legal Action**: Take strict legal action against families and community members facilitating child marriages.
6. **Provide Emergency Shelters**: Set up temporary shelters for girls at risk to ensure their safety.

(b) Changing the Community Mindset:

1. **Engage Community Leaders**: Involve respected village elders, religious leaders, and local influencers to advocate against child marriage and raise awareness.
2. **Showcase Positive Role Models**: Highlight stories of successful women who avoided child marriage and thrived through education and career.
3. **Awareness Campaigns**: Conduct awareness programs focused on the social, health, and economic costs of child marriage, including the benefits of educating girls.
4. **Incentivize Education**: Offer scholarships, free school supplies, or other incentives for families who send their girls to school.
5. **Use Cultural Platforms**: Organize street plays, songs, or community theater that communicate the harms of child marriage in a culturally relatable way.

(c) Ensuring Muskan's Safety and Education:

1. **Immediate Protection**: Place Muskan under the supervision of a child protection officer to ensure her immediate safety and prevent any marriage from occurring.
2. **Enrolment in School**: Enroll Muskan in a residential school or provide transportation to a nearby school to ensure uninterrupted education.
3. **Family Support**: Offer counseling and financial assistance programs to Muskan's family, such as connecting them with government poverty alleviation schemes.
4. **Long-Term Support**: Provide a scholarship for Muskan's education, link her family to economic development programs, and provide career counseling when she's older.

Click Here for INDEX

Case Study 2: Ethical Dilemma in Marketing Organic Products

Scenario:

You are working in the marketing department of ShopX, a major retail chain selling groceries, home appliances, and personal care items. The company plans to launch a new organic beauty product range called 'Natura', sourced from botanical extracts and essential oils. The product line is positioned as a green, sustainable option targeting young urban consumers. However, a recent investigation revealed that the supplier of one of the key ingredients uses child labor and toxic discharge practices, violating the company's ethical supplier code. Additionally, the packaging, although marketed as eco-friendly, is not as sustainable as claimed due to energy-intensive manufacturing processes that contribute significantly to greenhouse gas emissions. Furthermore, some products in the range contain a controversial ingredient that can cause mild skin irritation, even though it is within legal limits.

The management is aware of these issues but is concerned about the financial implications of changing suppliers or delaying the product launch. They are also unwilling to modify the packaging design due to already invested resources. As a marketing manager, you must navigate these ethical issues while considering the company's business goals.

Solution:

(a) Ethical Dilemmas in the Case:

1. **Child Labor**: Using a supplier that engages in child labor is a violation of basic human rights and the company's ethical standards.
2. **Environmental Impact**: The product's packaging, although marketed as sustainable, has a significant environmental footprint due to its energy-intensive manufacturing process.
3. **Health Risks**: The controversial ingredient in some products, although within legal limits, poses a potential risk to consumer health and trust.
4. **Profit vs Ethics**: The dilemma of balancing profit goals with the ethical responsibilities of ensuring consumer safety, environmental sustainability, and social justice.

(b) Balancing Financial Goals with Ethical Responsibilities:

1. **Supplier Audit and Ethical Sourcing**: Conduct a thorough audit of suppliers and ensure that no unethical practices (like child labor) are involved. Switch to ethically sound suppliers if necessary.
2. **Transparent Communication**: Be transparent with consumers about the sourcing and production processes. If changes are made to improve ethical standards, communicate these efforts to build brand trust.
3. **Invest in Sustainable Packaging**: Despite the initial investment in packaging, explore alternative eco-friendly packaging options that align with the company's commitment to sustainability.
4. **Reformulation of Products**: Consider reformulating the products that contain the controversial ingredient to minimize skin irritation risks, even if this incurs additional costs.
5. **Corporate Social Responsibility (CSR)**: Implement stronger CSR practices by aligning with fair labor practices, environmental sustainability, and consumer health as key pillars of the brand.

(c) Potential Consequences of Ignoring Ethical Concerns:

1. **Loss of Consumer Trust**: If the company continues with unethical sourcing and misleading marketing, it could lose consumer trust, especially among environmentally and socially conscious buyers.
2. **Reputational Damage**: Negative publicity regarding child labor, environmental harm, or health risks could tarnish the company's reputation and brand image.
3. **Legal Consequences**: Ignoring the child labor issue could lead to legal actions, such as violations of child labor laws or consumer protection regulations.
4. **Employee Morale**: Company employees may feel demotivated if they are forced to work for an organization that compromises on ethics, leading to a decline in morale and productivity.
5. **Long-Term Financial Impact**: While focusing on short-term profits, the company risks damaging its long-term sustainability, losing market share, and facing investor skepticism about its ethical practices.

In conclusion, balancing financial goals with ethical responsibilities requires a commitment to corporate integrity and long-term sustainability. Ignoring ethical concerns may offer short-term gains, but it risks long-term brand damage, legal consequences, and a loss of consumer trust.

I. ESSAY

Click Here for INDEX

Violence is the last refuge of the incompetent

A young boy named Aarav lived in a small village in India. His family, like most others, had a hard time making enough money. One afternoon, Aarav found himself watching a heated argument between two important men in the village — the rich landowner and the poor farmer. The argument started over something small, like who had the right to use the village's water for farming, but it quickly grew worse.

At first, the argument was just words, with each man blaming the other. But then, the landowner, who had a lot of power, started making threats against the farmer, who didn't have the same kind of influence. Aarav watched as the argument turned into violence. The landowner, feeling threatened by the farmer's accusations, pulled out a gun and pointed it at him. The sudden violence shocked everyone, especially Aarav. The landowner's choice to use force instead of talking things through left Aarav confused.

Later, after the violence ended, the landowner walked away without facing any real consequences. He kept his power, while the farmer lost everything — his land, his livelihood, and his sense of pride. The violence didn't solve anything; it just made things worse. It was clear to Aarav that **violence is often used when people can't solve their problems any other way.**

Explanation of the Story

The story of Aarav and the village dispute shows a bigger truth about how people handle problems. **When someone doesn't know how to solve a problem through talking, thinking, or planning, they might choose violence because they feel it's their only option.** This can happen because a person is afraid, lacks emotional skills, or simply doesn't know how to fix the situation in a peaceful way.

In the case of the landowner, he used violence as a way to stay in control. **When he felt unable to deal with the problem by talking or negotiating, he turned to violence.** This shows that violence is often a sign of weakness, not strength.

"Violence is the last refuge of the incompetent" means that when someone resorts to violence, it's usually because they don't have the ability to solve a problem in a better way. People who can't find peaceful solutions might use violence as a shortcut, but it rarely solves anything in the long term. This can be seen in both personal situations and on a global level.

Global Context – The War in Iraq (2003)

A global example of this can be seen in the **2003 invasion of Iraq**. The United States, led by **President George W. Bush, decided to attack Iraq, claiming that the country had weapons of mass destruction (WMDs).** However, when the invasion happened, no WMDs were found, and the reasons for attacking were questioned by many people.

The decision to go to war was seen by many as a failure of diplomacy and negotiation. **The leaders involved didn't try hard enough to solve the problem through peaceful means or dialogue.** Instead, they turned to violence and military action. **Many argue that the U.S. invaded because they felt it was the only option left**, even though there were no clear reasons for war. In the end, the war caused massive destruction, many deaths, and created long-lasting problems **in the region, including the rise of groups like ISIS.** This shows how violence, rather than being a solution, often leads to even bigger problems.

Indian Context – The 1984 Anti-Sikh Riots

Another example of violence as a result of incompetence in India is the **1984 Anti-Sikh Riots**. **After the assassination of Prime Minister Indira Gandhi by her Sikh bodyguards, violent mobs attacked Sikhs across India,** especially in Delhi. The violence that **followed wasn't just a reaction to the assassination; it was a reflection of deeper issues in society, like communal tensions and a lack of proper leadership.**

Instead of trying to understand the reasons behind the assassination or working to prevent the violence, people turned to anger and hatred, attacking innocent Sikhs. **Those who took part in the violence were unable to deal with their emotions or the situation in a peaceful**

Click Here for INDEX

way. This only made things worse, deepening the divide between communities and leading to even more harm. The violence didn't fix anything and caused lasting pain for many people.

The Psychological Perspective: Why Violence?

On a psychological level, **people often turn to violence when they feel powerless, angry, or afraid. Violence may seem like a quick way to regain control or get what someone wants**. When people don't know how to communicate or solve problems in a calm, thoughtful way, they may think violence is their only option.

In both personal situations and big global conflicts, when violence happens, it shows that those involved don't have the skills to find solutions without hurting others. **Violence can be a way for people to control others when they feel they can't influence them in any other way.** This often leads to even more problems, as it doesn't truly solve the issue at hand.

The Teachings of Gautama Buddha: Non-Violence and Peaceful Resolution

The teachings of **Gautama Buddha** provide an important lesson in handling conflict without violence. **Buddha emphasized that true strength lies in understanding, patience, and compassion, not in force or control.**

One story that exemplifies this is when **Buddha encountered a man named Angulimala**. Angulimala was a **killer who had committed many crimes.** When he encountered Buddha on the road, he tried to threaten him, intending to kill him too. However, **Buddha remained calm and unafraid. He did not react with anger or violence, but instead, he spoke to Angulimala with kindness and wisdom.** Buddha's peaceful response shocked Angulimala, who realized the error of his ways. **Instead of reacting with violence, Buddha's calmness and wisdom led to the transformation of Angulimala from a violent person to a peaceful one**. Buddha's story shows that peace, understanding, and non-violence can change even the most violent hearts.

Buddha's teachings focus on **Ahimsa**, or **non-violence.** He taught that violence, whether in thought, speech, or action, only causes suffering, both to the one who commits it and the one who experiences it. **Instead, Buddha emphasized resolving conflict with compassion, understanding, and a willingness to see things from the other person's perspective.**

Buddha's core message was that peace is not just the absence of violence, but the presence of understanding and compassion. His teaching suggests that when people can resolve their conflicts through dialogue and compassion, rather than force, they will experience greater happiness and inner peace.

The Power of Non-Violence in Modern Times

Buddha's message of non-violence resonates even today. Leaders like **Mahatma Gandhi**, who led India's fight for independence, adopted Buddha's teachings on non-violence (Ahimsa). Gandhi believed that **non-violence was the most powerful tool for social and political change**. He understood that violence only led to more violence, while peaceful resistance could bring about real, lasting change. Gandhi's commitment to non-violence is seen in his famous **Salt March in 1930**, when he peacefully led thousands of Indians to the **coastal village of Dandi to protest British salt taxes.** Despite the harsh repression from British authorities, Gandhi and his followers remained non-violent, showing that strength doesn't lie in violence, but in peaceful action and moral courage.

Gandhi's approach also shows that **true competence is found in the ability to influence others through wisdom and understanding, not through force or fear**. When leaders resort to violence, they are revealing their incompetence, as they fail to address the root causes of conflict and resort to power instead of persuasion.

Conclusion: Moving Beyond Violence

Both the examples from India and around the world show that violence is not a good way to solve problems. **True strength comes from the ability to deal with problems through talking, thinking, and finding peaceful solutions.** When people use violence, it shows that they can't solve things in a better way. Violence is a sign of weakness, not power. In a world that wants to move forward, we should work to find ways to deal with problems without using violence. **Violence is not the answer, and it doesn't bring real change.** It is a sign of failure to handle situations in a smart, peaceful way. Instead, societies and individuals should learn to solve their issues through intelligence, understanding, and calm discussion.

J. SCHEME

Click Here for INDEX

1. 10th Anniversary of Beti Bachao Beti Padhao (BBBP) Scheme

1. The **Beti Bachao Beti Padhao (BBBP)** scheme was launched by Prime Minister Narendra Modi on **January 22, 2015**, in **Panipat, Haryana**.
2. The scheme was created to address the declining **Child Sex Ratio (CSR)** in India, prevent **gender-biased sex-selective abortions**, and promote the **survival**, **protection**, and **education** of the girl child.
3. **Key Aims:**
   a. **Prevent gender-biased practices**.
   b. Promote **girl child education** and **empowerment**.
   c. Improve **maternal health** and **healthcare access** for women and girls.
4. **In 2025, the scheme marks 10 years** of implementation, with celebrations from **January 22, 2025, to March 8, 2025 (International Women's Day).**
5. These activities include:
   a. **Mission Vatsalya** and **Mission Shakti portal launches**.
   b. A **Compendium of Best Practices** to showcase successful models.
   c. **SANKALP: Hub for Empowerment of Women**.
6. **Moreover, The SANKALP: (Hub for Empowerment of Women)**, functions in the **district and serves as a single window inter-sectoral convergence mechanism provided for all women to avail the benefits of Central and State Government schemes.**
   a. It works as a **nodal agency at the state and district level** to disseminate information regarding various schemes and policies through awareness campaigns at grassroots level.
   b. Over the past decade, **BBBP has expanded its scope through collaborations between multiple ministries.**

Integration with Mission Shakti:

BBBP has now been integrated with **Mission Shakti** — **a comprehensive program for women's safety and empowerment, launched during the 15th Finance Commission period** (2021-2026).

Mission Shakti has two important sub-schemes:

Sub-scheme	Focus Area	Key Features
Sambal	Women's safety and security	**One Stop Centres (OSCs)**, Women Helpline (181), **Nari Adalat for minor grievances.**
Samarthya	Women's empowerment and economic support	Shakti Sadans (safe homes), Sakhi Niwas (safe spaces for working women), **Pradhan Mantri Matru Vandana Yojana (PMMVY)** for maternal health.

Key Objectives of BBBP:

The primary objectives include:

1. Improving Sex Ratio at Birth (**SRB) by 2 points every year.**
2. Improvement in the **percentage of institutional deliveries or sustained at the rate of 95% or above.**
3. **1% increase in 1st Trimester Ante-Natal Care (ANC)** Registration per year.
4. **1% increase in enrolment at secondary education level** and skilling of girls/women per year.
5. To check **dropout rate among girls at secondary and higher secondary levels.**
6. Raising awareness about safe **Menstrual Hygiene Management (MHM).**

Target Groups of BBBP:

1. **Primary Target Groups:**
   a. Young and newly married couples, expecting parents.

Click Here for INDEX

b. Adolescents (girls and boys), households, and communities.

2. **Secondary Target Groups:**
   a. Schools, Anganwadi Centres (AWCs), medical professionals, and healthcare facilities.
   b. Panchayat Raj Institutions (PRIs), Urban Local Bodies (ULBs), frontline workers.
   c. Women collectives, Self-Help Groups (SHGs), NGOs, and media.

Financial and Operational Structure:

BBBP is a **centrally sponsored scheme**, funded **100% by the Central Government**. It operates under **Mission Shakti's Sambal vertical** with financial assistance varying by the **Sex Ratio at Birth (SRB)** in districts:

SRB Category	Annual Funding
SRB ≤ 918	Rs. 40 lakh
SRB 919–952	Rs. 30 lakh
SRB > 952	Rs. 20 lakh

Key Achievements and Data Highlights:

Key Achievements	2014-15	2023-24	Impact
Improvement in Sex Ratio at Birth (SRB)	918	930	Reflects success of BBBP in combating gender-biased sex selection.
Increase in Girls' Enrollment in Secondary Education (GER)	75.51%	78%	Significant improvement in educational access for girls.
Increase in Institutional Deliveries	61%	97.3%	Drastic improvement in childbirth safety, leading to a decline in maternal and infant mortality.

1. The **'Selfie with Daughters'** campaign went viral, motivating **fathers** to share pictures with their daughters, bringing attention to gender equality.
2. **'Beti Janmotsav'** celebrated the birth of **girl children**, helping shift societal attitudes about daughters.
3. **Skill Development Programs** in collaboration with the **Ministry of Skill Development and Entrepreneurship** have improved the economic participation of young girls and women.

2. Sukanya Samriddhi Yojana (SSY)

The **Sukanya Samriddhi Yojana (SSY)**, launched on **22nd January 2015** as part of the **Beti Bachao, Beti Padhao** campaign, has now completed ten years. The scheme aims to secure the financial future of the girl child by promoting savings for their education and other needs.

Key Objectives:

1. **Welfare of the Girl Child**: To provide financial support for the higher education and other expenses of a girl child.
2. **Financial Inclusion**: Help parents build funds for their daughter's future needs.

Eligibility:

1. The account can be opened for a girl child below the age of **10 years**.
2. Only **one account** can be opened in the name of a girl child by a depositor under the scheme.
3. The scheme allows parents or guardians to open an account for **up to two girl children** only.

Key Features:

1. **Deposit Limits**:
   a. **Minimum deposit**: ₹250.
   b. **Maximum deposit**: ₹1,50,000 per financial year.
   c. Deposits can be made for up to **15 years** from the account opening date.
2. **Tax Benefits**: Contributions, interest earned, and maturity proceeds are exempt from tax under **Section 80C** of the Income Tax Act, making it a **triple tax-free** (EEE) scheme.
3. **Interest Rate**: The interest rate is revised quarterly by the **Ministry of Finance** and is calculated monthly based on the lowest balance between the **5th day** and the end of the month.
   - Interest is credited to the account at the end of each financial year.

Maturity & Account Management:

1. **Maturity**: The account matures **21 years** after the account is opened.
2. **Early Closure**: Early closure is allowed if the girl reaches the age of **18** for marriage, subject to necessary documentation.
3. **Account Control**:
   a. The guardian manages the account until the girl child turns **18**.
   b. At **18**, the girl child gains control of the account by submitting the required documents.

Withdrawals:

1. **For Education**: The account holder can withdraw up to **50%** of the balance after turning **18** or completing **10th grade**, whichever comes first.
   a. Withdrawals can be made as a lump sum or in installments, with a maximum of one withdrawal per year for up to five years.

Premature Closure:

1. **In Case of Death**: The account can be closed immediately in case of the death of the account holder.
2. **Compassionate Grounds**: Premature closure may also be allowed under extreme circumstances, such as life-threatening medical conditions or the death of the guardian, but not within the first five years of account opening.

3. Continuation of Pradhan Mantri Fasal Bima Yojana (PMFBY)

1. The **Union Cabinet** has approved the continuation of the **Pradhan Mantri Fasal Bima Yojana** (PMFBY) and the **Restructured Weather-Based Crop Insurance Scheme** until 2025-26.
2. These schemes aim to provide financial security to farmers, enhance agricultural sustainability, and support the adoption of modern farming techniques.

Key Objectives:

1. **Financial Assistance for Farmers**: Providing compensation to farmers in case of crop losses due to adverse weather conditions.
2. **Income Stability**: Ensuring farmers' income is stabilized so they can continue farming activities.
3. **Promoting Modern Agriculture**: Encouraging the adoption of modern farming techniques and innovations.
4. **Credit Flow**: Improving credit availability to the agricultural sector to ensure food security and crop diversification.

Features:

1. **Launch Date**: 2016
2. **Ministry**: Ministry of Agriculture & Farmers Welfare
3. **Implementing Agencies:** The **Department of Agriculture, Cooperation & Farmers Welfare** (DAC&FW) under the **Ministry of Agriculture & Farmers Welfare** (MoA&FW) coordinates the implementation in partnership with state governments.
4. **Exemptions:** The **PMFBY** scheme is exempted from the Goods and Service Tax (GST), making it more accessible for farmers.
5. **Coverage**: The scheme covers food crops (cereals, millets, pulses), oilseeds, and annual commercial/ horticultural crops, provided yield data and crop cutting experiments (CCEs) are available.

Types of Risks Covered:

1. **Yield Losses (on a Notified Area Basis)**: Natural disasters like storms, cyclones, floods, droughts, and pests.
2. **Prevented Sowing**: Farmers can claim up to 25% of the sum insured if adverse weather prevents sowing.
3. **Post-Harvest Losses**: Coverage for up to 14 days after harvesting, protecting crops left in the field against cyclonic/unseasonal rains.
4. **Localized Calamities**: Hailstorms, landslides, and inundation affecting specific farms.
5. **Add-On Coverage**: States can provide additional coverage for crop losses due to wild animal attacks.

Exclusions:

1. Losses due to war, riots, theft, preventable risks, and grazing by animals.
2. Crops bundled or heaped before threshing (for post-harvest losses).

Premium and Subsidy:

1. **Kharif Crops**: 2% of the sum insured.
2. **Rabi Crops**: 1.5% of the sum insured.

Click Here for INDEX

3. **Commercial/Horticultural Crops**: 5% of the sum insured.
4. The difference between the premium and insurance charges is subsidized by the government. For **North-Eastern States**, the subsidy is shared at a 90:10 ratio between the Centre and State.

Eligibility:

1. All farmers with insurable interests, including sharecroppers and tenant farmers, are eligible.
2. The scheme was initially mandatory for farmers taking crop loans or Kisan Credit Card loans but has been made **optional** for all farmers since the **Kharif 2020** season.

Technological Initiatives:

To enhance the effectiveness of the scheme, several technological initiatives have been introduced:

1. **Fund for Innovation and Technology (FIAT)**: A corpus of ₹824.77 Crore has been set up to support the adoption of innovative technologies in crop insurance.
2. **YES-TECH (Yield Estimation System using Technology)**:
   a. Uses remote sensing technology for more accurate crop yield estimates, with 30% of the weightage based on technology-based estimates.
   b. Implemented in 9 major states, including Andhra Pradesh, Assam, Haryana, and others. Madhya Pradesh has fully adopted technology-based yield estimation.
3. **WINDS (Weather Information and Network Data Systems)**: Establishes automatic weather stations (AWS) at the block level and automatic rain gauges (ARGs) at the panchayat level, enhancing data collection for better crop risk assessment.

4. Diamond Imprest Authorization Scheme (DIA)

1. The **Diamond Imprest Authorization Scheme** was introduced by the **Department of Commerce** as part of the **Foreign Trade Policy 2023**.
2. The scheme is designed to enhance the global competitiveness of India's diamond sector, especially for **MSME diamond exporters**.
3. Its goal is to streamline the business process, generate employment, and strengthen India's position in the global diamond trade.

Key Objectives:

1. **Support MSME Exporters**: Facilitates easier access to global markets for small and medium-sized diamond exporters.
2. **Job Creation**: Aims to generate employment within the diamond industry.
3. **Boost Competitiveness**: Enhances India's competitiveness in the global diamond sector by easing the import-export process.
4. **Safeguard Domestic Industry**: Protects and nurtures India's diamond industry against global challenges.

Key Features of the Scheme:

1. **Duty-Free Imports**: The scheme allows for **duty-free imports** of **Natural Cut and Polished Diamonds** that are less than ¼ carat (25 cents).
2. **Export Obligation**: Exporters must meet a **10% value addition** requirement when exporting the diamonds.
3. **Eligibility**:
   a. Exporters must have **Two Star Export House status** or higher.
   b. Must have annual exports of at least **US $15 million**.
4. **Non-Applicability to Lab-Grown Diamonds (LGDs)**: The scheme is specifically for **natural diamonds** and does not apply to lab-grown diamonds.
5. **Duty Exemptions**: Exporters are exempt from paying the following duties:
   a. **Basic Customs Duty**
   b. **Additional Customs Duty**
   c. **Education Cess**
   d. **Anti-Dumping Duty**
   e. **Countervailing Duty**
   f. And other similar duties.

Diamond Industry Overview:

India is a global leader in the diamond trade:

1. **India processes about 90%** of the world's rough diamonds by volume.
2. It is the world's **largest exporter** of polished diamonds.

3. India contributes to **33% of global diamond exports by value**.

Challenges Faced by the Diamond Industry:

1. **Global Challenges**:
   a. **Declining demand** for polished diamonds, especially in major markets like the **US**, **China**, and **Europe**.
   b. A **shift in consumer preferences** towards **lab-grown diamonds**.
2. **Domestic Challenges**:
   a. Accumulation of **unsold polished diamond inventories**.
   b. Rising **operational costs** and reduced profit margins in the global diamond trade.
   c. India's **high corporate tax regime** affecting the industry.
   d. **Reduced credit** availability from banks.

Way Forward:

To address these challenges, the diamond industry requires strategic reforms, including:

1. **Extension of Export Credit**: Offering a longer export credit period to exporters.
2. **Tax Exemption for Foreign Rough Diamond Sellers**: Exempting foreign rough diamond sellers from **corporate tax** to encourage smoother imports.
3. **Regulation of Lab-Grown Diamond Industry**: Proper regulation to maintain a fair and competitive market.

5. 10 Years of UJALA and SLNP: A Leap Towards Energy Efficiency

1. The **Unnat Jyoti by Affordable LEDs for All (UJALA)** scheme, launched on January 5, 2015, marks its 10th anniversary.
2. Over the past decade, UJALA has played a pivotal role in transforming household lighting, reducing energy consumption, and contributing to India's sustainability goals.
3. In addition, the **Street Lighting National Programme (SLNP)**, which was launched alongside UJALA, has been instrumental in replacing conventional streetlights with energy-efficient LEDs.

UJALA Scheme: Key Highlights

The **UJALA Scheme** was launched in January 2015 with the goal of replacing traditional lighting systems (incandescent lamps (ICLs) and compact fluorescent lamps (CFLs)) with energy-saving **LED bulbs**.

1. **Objective**:
   a. To promote energy efficiency and reduce electricity consumption by replacing 77 crore traditional bulbs and 3.5 crore streetlights with LEDs.
   b. UJALA aims to save **85 lakh kWh** of electricity and **reduce 15,000 tonnes of CO2** emissions annually.
2. **Need for UJALA**:
   a. Lighting accounts for about **18-27%** of residential electricity consumption in India.
   b. Prior to UJALA, in 2011, **46% of households** used CFLs and **41% used tube lights**, with only **0.4% using LED bulbs**.
3. **Advantages of LED Bulbs**:
   a. LEDs use **75% less energy** and last **25 times longer** than incandescent bulbs.
   b. LEDs are **90% more energy-efficient** than incandescent lamps and **50% more efficient** than CFLs.
4. **Key Features of UJALA**:
   a. **Subsidized LED Bulbs**: The cost of LED bulbs was reduced to **Rs. 70** per bulb under UJALA, compared to **Rs. 450** in 2014.
   b. **Distribution Mechanism**: The scheme utilizes a bulk-buying model to reduce prices and involves state governments in the distribution process.
5. **Achievements of UJALA**: **36.87 crore LED bulbs** have been distributed nationwide, resulting in:
   a. **47,883 million kWh** of energy savings annually.
   b. **Rs. 19,153 crore** in cost savings each year.
   c. **3.88 million tonnes** of CO2 reduction annually.
   d. **9,586 MW** of peak demand has been avoided.

GRAM UJALA

In March 2021, the **GRAM UJALA** scheme was launched for rural areas, offering LED bulbs at **Rs. 10** each in exchange for old incandescent bulbs.

- **1.5 crore LED bulbs** were distributed in Phase-I, leading to **2025 million kWh** of energy savings and **1.65 million tonnes** of CO2 reduction per year.

Click Here for INDEX

Street Lighting National Programme (SLNP): Key Insights

The **Street Lighting National Programme (SLNP)** was introduced to replace conventional streetlights with **energy-efficient LED streetlights** across India.

1. **Objective**: To **reduce energy consumption**, lower operational costs for municipalities, and promote a transition towards energy-efficient appliances in public lighting.
2. **Implementing Agency**: The scheme is implemented by **Energy Efficiency Services Limited (EESL)**, working with **Urban Local Bodies (ULBs)**, **Municipal Bodies**, **Gram Panchayats**, and state and central governments.
3. **Business Model**:
   a. EESL funds the initial cost of replacing streetlights and recovers the investment through **monthly or quarterly payments** from municipalities.
   b. EESL also ensures **95% uptime** for LED streetlights, improving public safety and reducing maintenance costs.

LED vs ICLs and CFLs: A Comparison

Feature	Incandescent Lamps (ICLs)	Compact Fluorescent Lamps (CFLs)	LEDs (Light Emitting Diodes)
Energy Efficiency	Low	Moderate	High
Power Consumption	High	Moderate	Low
Cost of Bulb	Low (initial cost)	Moderate	High (initial cost)
Heat Emission	High	Moderate	Very low
Environmental Impact	High (produces more CO2)	Moderate (contains mercury)	Low (no harmful emissions)
Durability	Fragile	More durable than ICLs	Very durable, impact-resistant
Light Direction	Omnidirectional	Omnidirectional	Directional or omnidirectional

About Energy Efficiency Services Limited (EESL)

Founded in **2009**, EESL is a **Super Energy Service Company (ESCO)** promoted by the Ministry of Power. EESL focuses on implementing energy efficiency solutions across various sectors like lighting, buildings, electric mobility, smart metering, and agriculture.

1. EESL has saved over **47 billion kWh** of energy annually and reduced **36.5 million tonnes** of carbon emissions.
2. EESL operates as a joint venture of **NTPC Limited**, **Power Finance Corporation Limited**, **REC Limited**, and **POWERGRID Corporation of India Limited**.

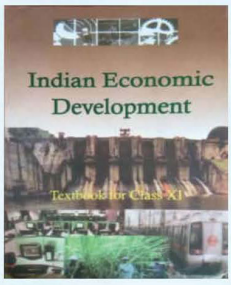
Other Key Energy Efficiency Initiatives in India

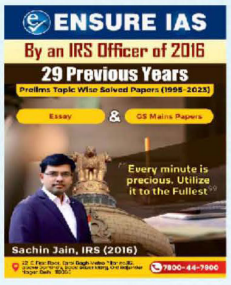
India has been making significant strides in energy efficiency with various initiatives:

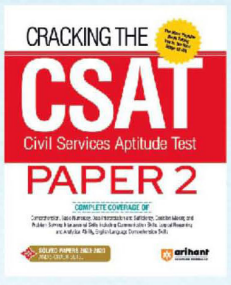
1. Standards and Labeling (BEE)
2. The Energy Conservation (Amendment) Act, 2022
3. National Mission for Enhanced Energy Efficiency (NMEEE)
4. National Electric Mobility Mission Plan (NEMMP)
5. Perform Achieve and Trade Scheme (PAT)
6. Energy Conservation Building Code (ECBC)

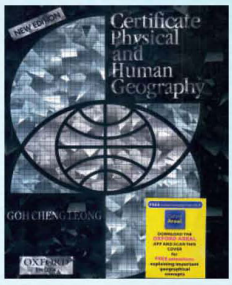
The **UJALA Scheme** and the **Street Lighting National Programme (SLNP)** have played a crucial role in promoting **energy efficiency** in India. These initiatives have not only reduced energy consumption but also contributed to environmental sustainability by lowering carbon emissions and saving costs. As India continues to pursue a greener future, these schemes serve as powerful examples of how government-led efforts can bring about lasting change for the better.

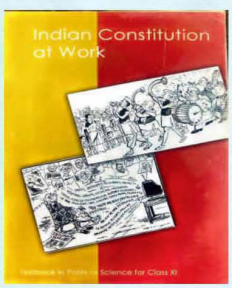
New List of Books to be provided to our classroom students since December 2023

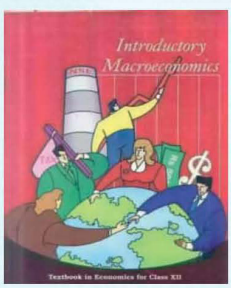


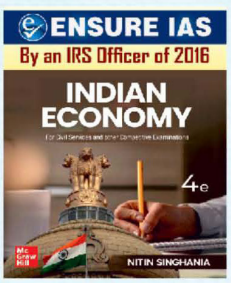


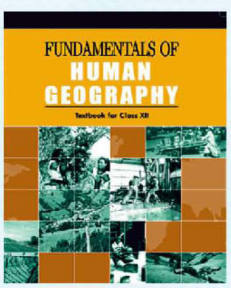


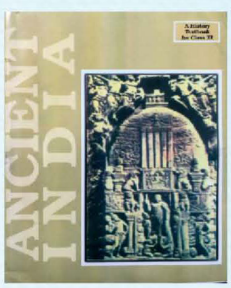


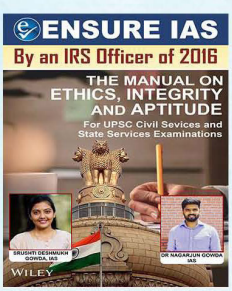


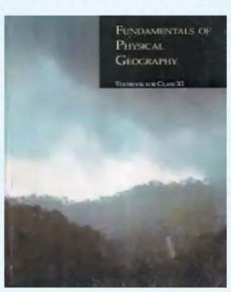


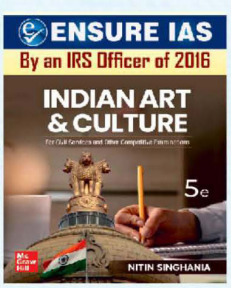


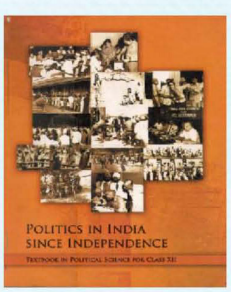


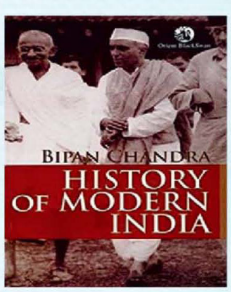


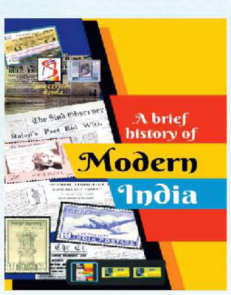


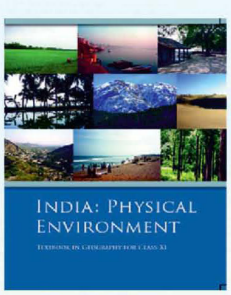


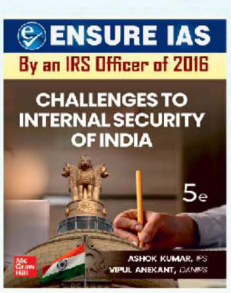


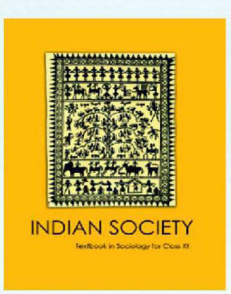


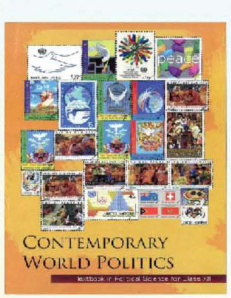


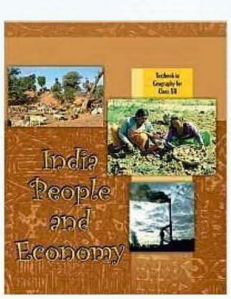


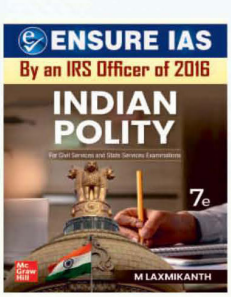


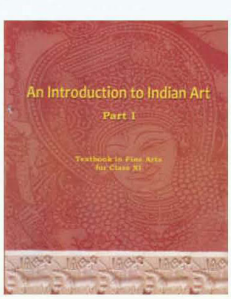












and many more .....

22-B, First Floor, Near Karol Bagh Metro Pillar No. 112, Above Domino's, Bada Bazar Marg, Old Rajinder Nagar, Delhi-110060

7900-44-7900