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7 PM COMPILATION

April, 2025

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Delimitation Exercise in India- Explained Pointwise

The recent spat between the Centre and Tamil Nadu over delimitation has again opened up one of the most crucial debates of democracy- the question of representation. The last delimitation happened in 1975, after which Indira Gandhi put a freeze until 2000. A year later, Parliament again froze the number of members of the Lok Sabha and state assemblies till 2026. The delimitation of constituencies for the Lok Sabha and State Legislative Assemblies is to be carried out on the basis of the first Census after 2026. Due to this inordinate delay, several issues related to democracy, demography and federalism await the fifth delimitation exercise.

What is Delimitation? What is the constitutional status behind Delimitation in India?

Delimitation refers to the process of redrawing the boundaries of electoral constituencies to ensure fair representation based on population changes.

Delimitation Commission- The Delimitation Commission is a statutory body responsible for determining the boundaries of various constituencies in the country for the purpose of elections. It is governed by the Delimitation Act, 2002 and is conducted by the Delimitation Commission under Articles 82 and 170 of the Indian Constitution. The objective is to provide equitable representation to all regions while maintaining the principle of one person, one vote.

What is the significance of Delimitation Exercise in India?

1. Political Representation and Electoral Fairness- Ensures democratic legitimacy through equitable distribution of seats in Lok Sabha and State Assemblies. **E.g.** The 2002 Delimitation Commission led to a better voter-per-MP ratio in urban and rural areas and prevented malapportionment, ensuring each MP represents roughly the same number of citizens.

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2. Upholding Democracy- The Reduces gerrymandering (political manipulation of electoral district boundaries to advantage a party, group, or socioeconomic class within the constituency) , ensuring fair electoral contests. **E.g.** Supreme Court in Kuldip Nayar v. Union of India (2006) upheld the importance of delimitation for fair democracy.

3. Socio-Economic Equity- The Delimitation Exercise enhances representation for marginalized communities and Scheduled Tribes. **E.g.** The J&K Delimitation Commission allocated more seats to Jammu to address past disparities.

4. Strengthening of Federalism- The Delimitation process ensures equitable representation among states, balancing national unity with regional autonomy. **E.g.** The 42nd Amendment's population freeze prevented southern states with lower population growth from losing representation, thereby upholding the spirit of cooperative federalism, crucial for India's unity.

5. Administrative Efficiency- The Delimitation exercise ensures a manageable voter-to-representative ratio, aiding governance. **E.g.** Mumbai and Bengaluru saw improved electoral administration post the 2002 exercise.

6. Electoral Integrity and Governance- The Delimitation process aligns representation with new demographic realities, as seen in global examples like the UK Boundary Commission.

What are the concerns associated with Delimitation Exercise?

1. Population vs. Development- Southern states argue that delimitation based solely on population would penalize them for successful family planning and economic development. **E.g.** Tamil Nadu's fertility rate is 1.6, while Bihar's is 3.0.

2. Federalism at Risk- States with low population growth may feel politically marginalized, leading to North-South divide concerns. There are concerns that the Delimitation Exercise can create federal Imbalance as states with better governance may feel punished for controlling population. **E.g.** Sarkaria Commission (1983) warned against excessive centralization of power.

3. Manipulation- There are concerns that political parties may influence constituency boundaries for electoral gains. **E.g.** Allegations of bias in the J&K delimitation process (2022).

4. Delays and Political Resistance- There are instances of increased political resistance as seen in the case of Justice Kuldip Singh-led Commission (2002) facing pushback from political parties unwilling to lose seats.

5. Economic Disparities- Southern states argue that higher revenue generation (GST collections, per capita income) should be factored into representation.

What Should be the Way Forward?

1. Implement Expert Recommendations- The following commissions have suggested the following reforms for ensuring federal balance and delimitation needs.

Sarkaria Commission (1983): Suggested a balanced approach between federalism and national unity.

Punchhi Commission (2010): Proposed equal weightage to population and governance needs.

2. Ensure Transparency and Independent Oversight- The Election Commission's autonomy should be strengthened to ensure fair delimitation process.

In Kuldip Nayar v. Union of India (2006), SC emphasized the need for fair representation while balancing federal concerns.

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In TN Seshan v. Union of India (1995), SC highlighted the importance of an independent delimitation body.

3. Constitutional and Legislative Reforms- Amend Articles 81 and 82 to ensure balanced regional representation and Introduce proportional representation models used in Germany and Canada.

4. Policy Suggestions

- Weighted Representation Model: Combining population size, economic performance, and governance.
- Independent Delimitation Commission: Free from political interference.
- Phased Implementation: A gradual transition to prevent political instability.

Conclusion

Delimitation is a delicate balance between democracy and federalism. While it ensures equal representation, challenges related to regional disparities, population dynamics, and governance issues must be addressed. The Supreme Court and Election Commission must play a proactive role in ensuring transparency and fairness. A balanced approach grounded in constitutional values, expert recommendations, and global best practices—is essential to uphold India's democratic and federal ethos.

Read more– The Print
UPSC Syllabus- GS 2– Issues and challenges pertaining to the federal structure

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The Waqf (Amendment) Bill 2025- Key changes, Reasons and Concerns- Explained Pointwise

The Waqf (Amendment) Bill 2025 was tabled in the Lok Sabha recently by the Union Minister of Minority Affairs. The Bill, proposes major changes to the Waqf Act 1995, by introducing sweeping changes in the governance and regulation of Waqfs in India. However, the Bill has been met with strong criticism from the opposition parties, who have held it as unconstitutional, divisive and anti-minority.

What is a Waqf Property? What has been the governance structure for Waqf properties in India?

Waqf Property- A waqf, also known as ḥabs or mortmain property, is an inalienable charitable endowment established under Islamic law. It is a personal property given by Muslims for a specific purpose– religious, charitable, or for private purposes. The ownership of the property is implied to be with God. However, the beneficiaries of the property can be different.

Formation of Waqf- The Waqf can be formed through a deed, or Instrument, or even orally. A property can be deemed to be Waqf if it has been used for religious or charitable purposes for a long period of time. Once a property is declared as Waqf, its character changes forever, and cannot be reversed.

Governance Structure for Waqfs in India

Pre-colonial Governance- The Waqfs in India have been legally Governed in India since 1913. The Muslim Waqf Validating Act was enacted in 1913. This act was replaced by the Mussalman Wakf Act, 1923.

Post Independence- The Central Waqf Act, 1954 was enacted after independence to provide for the regulation of Waqfs. This act was ultimately replaced by the Waqf Act, 1995.

What are the Major Provisions and Institutional Structure as Provided by the Waqf Act?

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Survey commissioner	The Waqf Act provides for the appointment of a survey commissioner. The commissioner maintains a list of all Waqf properties by making local investigations, summoning witnesses, and requisitioning public documents.
Mutawalli (caretaker)	The Act provides for a Mutawalli (caretaker) who acts as a supervisor of the Waqf properties.
Management of Waqf Properties	Waqf properties are managed in a way that is similar to how properties under Trusts are managed under the Indian Trusts Act, 1882.

Waqf Boards

About	**a.** It is a body under the state government. It works as a custodian for Waqf properties across the state. **b.** In most states, there are separate Waqf Boards for the Shia and Sunni communities. Almost all prominent mosques in the country are Waqf properties and are under the Waqf Board of the state.
Composition	A Waqf Board is headed by a chairperson **Members-** a. One or two nominees from the state government b. Muslim legislators and parliamentarians c. Muslim members of the state Bar Council d. Recognized scholars of Islamic theology e. Mutawallis of Waqfs with an annual income of Rs 1 lakh and above.
Powers and Functions	**a.** Administration of the Waqf properties and taking measures for the recovery of lost properties of any Waqf **b.** Sanctioning any transfer of immovable property of a Waqf by way of sale, gift, mortgage, exchange, or lease. However, the sanction shall not be given unless at least two thirds of the members of the Waqf Board vote in favor of such a transaction.

Central Waqf Council (CWC)

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About	The Central Waqf Council (CWC) was established in 1964, to supervise and advise state–level Waqf Boards across India.
Functions	a. Provide Guidance to the Central, state Governments, and Waqf boards on property management. b. It can require boards Waqf boards to provide information on their performance, including financial records and reports.

Waqf Tribunal

About	The Waqf Act provided for a Waqf tribunal to be constituted by the state governments to resolve disputes related to Waqf properties in India. According to the Section 6 of the Waqf Act 1995, the tribunal's decision is taken as final in case of disputes regarding a property's status as Waqf.
Composition	It comprises three members– a. Chairperson who is a state judicial officer not below the rank of a District, Sessions or Civil Judge, Class I. b. An officer from the state civil services. c. A person with knowledge of Muslim law and jurisprudence.

2013 Amendment to Waqf Act 1995
a. Authority to Waqf Boards to designate a property as Waqf.
a. Prescribed imprisonment of up to two years for encroachment on Waqf property
b. Explicitly prohibit the sale, gift, exchange, mortgage, or transfer of Waqf property.

What key changes are introduced by the Waqf Amendment (Bill) 2025?

Retention of Waqf by User Doctrine and future recognition	"Waqf by user" properties registered on or before the law's enactment will retain their status unless they are disputed or identified as government land. However, the Future recognition of waqf status requires documentary proof or declaration from a practicing Muslim of at least five years. *"Waqf by user" is a doctrine rooted in Islamic legal traditions that recognised properties as religious or charitable endowments based on their uninterrupted*

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	communal use, even in the absence of formal documentation.
Inclusion of non-muslims in waqf institutions	**1.** Non-Muslims will be appointed to key waqf institutions, including the Central Waqf Council, State Waqf Boards, and waqf tribunals. **2.** Both the Central Waqf Council and State Waqf Boards must include at least two non-Muslim members. *Non-Muslims will remain a minority in both the Council and the Waqf Boards.* **3.** The requirement that a waqf board's chief executive officer must be a Muslim has been removed. **4.** State government representatives on the Waqf Board must be a Joint Secretary-level officer "dealing with waqf matters."
Waqf Tribunal & Legal Changes	**Tribunal Composition:** Waqf Tribunals will now have three members instead of two: **a.** A District judge **b.** A Joint secretary-level state officer **c.** An expert in Muslim law **2. Appeals:** Tribunal decisions can be challenged in the High Court within 90 days
Empowering Government Officials in Property Disputes	The Bill empowers senior government officers (above District Collector rank) to settle disputes over whether a property is waqf or government land, replacing the Waqf Tribunal's exclusive authority under the 1995 Act. Until the officer submits a report, disputed properties will be treated as government property.
Application of Limitation Act to Waqf Properties	The Section 107 of the Waqf Act, which had excluded waqf properties from the Limitation Act, 1963, has been removed. With this deletion, the standard 12-year limitation for reclaiming encroached property will now apply to waqf land.

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Centralised Digital Registration of Waqf Properties	The Bill mandates the creation of a digital portal for registering and updating waqf properties.
Central Government Oversight	The Comptroller and Auditor General (CAG) will conduct audits.
Separate Waqf Boards	Separate Waqf Boards will be allowed for the Bohra and Agakhani sects

What is the rationale for the Key changes introduced as part of amendments to the Waqf Act 1995?

1. Address Concerns around Mismanagement and Corruption of Waqf Boards- There have been concerns regarding the lack of transparency in the operations of Waqf Boards, in financial and administrative operations. The proposed amendments are aimed at enhancing the operational transparency of Waqf Boards.

2. Reduction of property disputes- The government contends that the amendments will lead to reduction of extensive disputes over waqf property, by providing clear definitions and requiring mandatory verification of property claims.

3. Streamlining of Legal Disputes and Jurisdiction Issues- According to the Waqf Act, the Waqf Tribunal's decision could not be appealed in civil courts. This led to perceptions of bias and injustice. The proposed amendments seek to streamline the jurisdictional issues in line with the principles of natural justice.

4. Women Representation- The proposed amendments which allow for women representation as members of Waqf Board is a step in the direction of Women empowerment.

What are the concerns surrounding the Waqf (Amendment) Bill 2025?

1. Violation of Religious Rights- Critics argue that the bill infringes upon the freedom of religion as provided by Article 25 and the autonomy of the Muslim community to manage their own religious affairs.

2. Increased Government Control- The proposed amendments grant greater powers to the government over Waqf properties, including the involvement of district collectors in property disputes. There are concerns that it can lead to bureaucratic delays and potential judicial-executive overreach.

3. Inclusion of Non-Muslims in Waqf Boards- Critics argue that the inclusion of non-muslims, undermines the integrity of these religious bodies. Non-muslim members may lack comprehensive understanding of the cultural and religious practices of Islam.

4. Potential for Increased Disputes- Removal of the waqf tribunal's authority and the assignment of this role to district collectors, could lead to increased disputes over Waqf properties. Critics argue that this could complicate the resolution process and expose properties to further legal challenges.

5. Lack of Community Consultation- The bill has been criticized for being drafted without adequate consultation with the Muslim community and stakeholders. Many organizations, including the All India Muslim Personal Law Board, have voiced their concern that the bill was created without their input.

What Should be the Way Forward?

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1. Protection of Waqf Properties- Establish a clear and transparent process for determining waqf properties, with judicial oversight to prevent arbitrary decisions.

2. Broader Consultation- The government should engage in extensive consultations with various stakeholders, including Muslim community leaders, legal experts, and civil society organizations.

3. Public Awareness Campaigns- Implementing public awareness campaigns about the Waqf system and the proposed changes can help dispel misconceptions and educate the community about their rights and responsibilities under the new framework.

> **Read More**– Times of India
> **UPSC Syllabus- GS 2**– Issues related to Constitution

Digital Child Abuse: The Rising Threat of AI Exploitation- Explained Pointwise

One of the most alarming threats is the use of AI to generate, possess, and disseminate **child sexual abuse material (CSAM).**The **International AI Safety Report 2025**, released by the British government's Department for Science, Innovation, and Technology in collaboration with the AI Security Institute, highlights the risks posed by AI-generated CSAM.

What is Digital Child Abuse & Child Sexual Abuse Material (CSAM)?

Digital child abuse encompasses various online threats, including cyberbullying, grooming, trafficking, and the proliferation of **Child Sexual Abuse Material (CSAM).** AI-generated CSAM, where AI tools create explicit images of children who do not exist, poses unprecedented challenges.

CSAM- Defined as **any material depicting sexual exploitation of minors**. **AI-generated CSAM** blurs lines— no real child is harmed, but it fuels demand for real abuse.

How much sensitive is the situation?

The **National Human Rights Commission (NHRC)** and various global agencies, including **WeProtect Global Alliance (2023 report)** and **Cyber Tipline 2022**, highlight the alarming rise in CSAM cases globally and in India.

- **Cyber Tipline 2022 statistics**: Of the **32 million reports** received on CSAM, **5.6 million** originated from perpetrators based in India.
- **WeProtect Global Alliance 2023**: Reports an **87% increase** in online child exploitation cases since 2019.
- The **International AI Safety Report 2025 (AI Security Institute, U.K.)** flags this as an imminent risk, necessitating legislative reforms. In India, **cybercrimes against children increased substantially (NCRB 2022)**, highlighting the urgency of addressing this menace.

Understanding Digital Child Abuse

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Types of Online Child Sexual Exploitation and Abuse

Child Sexual Abuse Material (CSAM)
- Downloading
- Sharing

Sexual Extortion
- Threats
- Coercion

Online Child Sexual Exploitation and Abuse (UNODC)

Online Grooming
- Impersonation
- Trust Building

Live Streaming of Child Sexual Abuse
- Streaming Platforms
- Live Abuse

Cyberbullying and Cyberharassment
- Mean Messages
- Rumors

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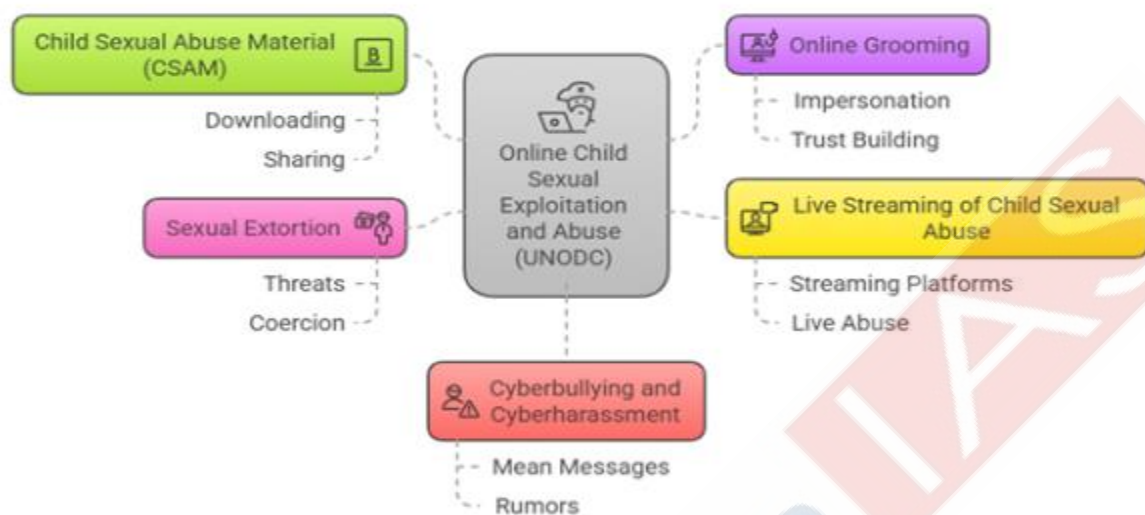
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Platforms Enabling Child Exploitation:

- **Social Media** (Instagram, Snapchat, Discord, TikTok, X)
- **Gaming Platforms** (Metaverse, Grand Theft Auto, Roblox)
- **Messaging Apps with End-to-End Encryption** (WhatsApp, Telegram)
- **Dark Web and Illicit Online Marketplaces**

Impact of Trauma

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Key Impacts Highlighted by the UN
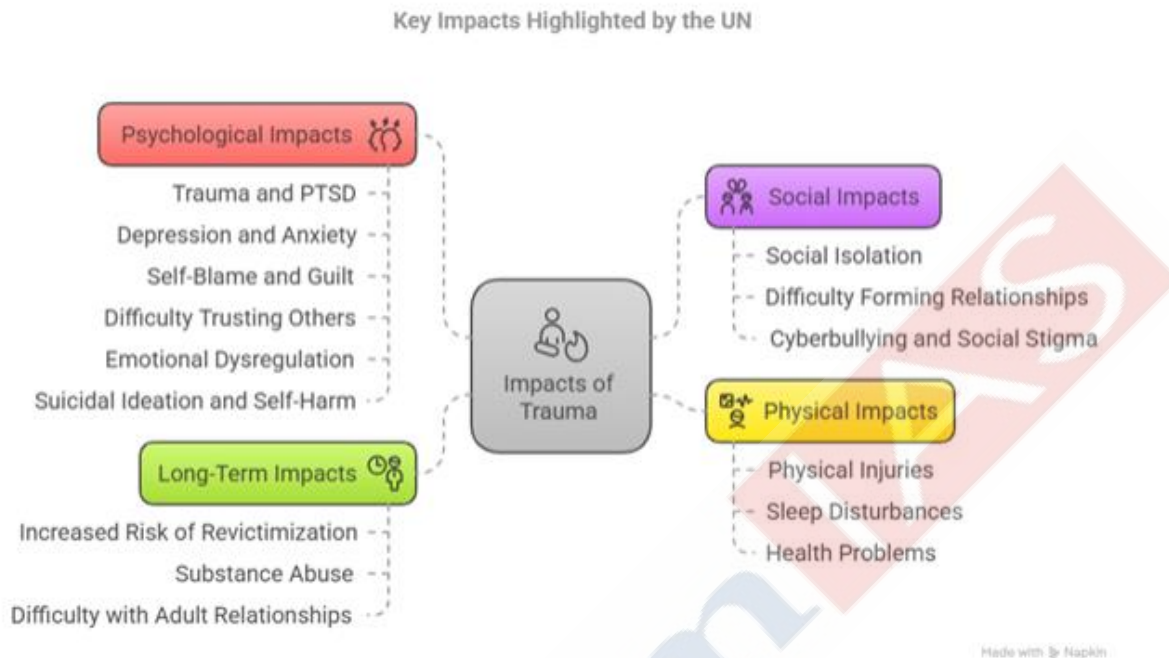
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Why Curbing AI-Based Exploitation is Essential?

1. Protecting Children's Rights: "CSAM is a grave violation of a child's **Article 21 (Right to Life & Dignity)** and **POCSO Act's child protection mandate**.

2. Mental and Emotional Well-being: Exposure to such content causes psychological harm. According to **UNICEF 2023 report,** exposure to CSAM leads to **long-term trauma, depression, and behavioral issues** in children. As per **Interpol Data (2024)**, AI-generated CSAM is **used to groom real victims**, escalating abuse cases.

3. Prevention of Secondary Victimization: AI-generated CSAM perpetuates abuse without an actual victim, yet it normalizes harmful behavior.

4. Upholding National Security and Law & Order: **The Internet Watch Foundation (2024)** reported CSAM proliferation on the open web, posing challenges to cybersecurity.

5. Global Commitments: India's adherence to the **UN Convention on the Rights of the Child (CRC)** mandates proactive measures.

6. Global Precedents: UK's 2025 Law: First to **criminalize AI tools generating CSAM**, shifting from **"act-centric" to "tool-centric"** approach. **EU's Digital Services Act (DSA)**: Mandates **proactive removal of CSAM** by tech platforms.

What are the government Initiatives to Combat Digital Child Abuse?

1. Legal Frameworks

- **Section 67B, IT Act 2000**: Punishes transmission of CSAM.
- **POCSO Act, 2012 (Sections 13, 14, 15)**: Prohibits child pornography.

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- **Bharatiya Nyaya Sanhita (BNS) Sections 294, 295**: Criminalizes obscene material sales and distribution to children.
- **Digital India Act 2023 (Proposed)**: Aims to regulate AI-generated CSAM and hold tech companies accountable.

2. Institutional Measures

- **India, with over 700 million internet users,** faces escalating cybercrimes against children. **NCRP Portal (Cyber Crime Prevention against Women and Children – CCPWC)** – Reported **1.94 lakh child pornography cases (April 2024)**.
- **NCRB-NCMEC Partnership (USA, 2019)**: Shared **69.05 lakh cyber tip-line reports (March 2024)**.
- **NHRC Guidelines 2024**: Recommends **expanding CSAM definitions** and enhancing regulatory mechanisms.

3. Awareness and Capacity Building

- **Interpol's Crimes Against Children Initiative** – India's collaboration to track online exploitation.
- **Cyber Swachhta Kendra** – Government initiative for cyber hygiene.

What are the challenges in Combating AI-Driven CSAM?

1. Legal and Legislative Gaps: Indian laws focus on **'who' has done 'what'**, lacking focus on the **'tools/medium'** (AI-generated CSAM). Enforcement agencies struggle to **prosecute perpetrators using encrypted platforms**.

2. Enforcement Issues: Such as **delayed investigations**, only **30% of NCRB-reported cases** see convictions. **As per Interpol dark web & encryption** cause **70% of CSAM is shared via encrypted platforms**.

3. Jurisdictional Challenges: CSAM hosted on foreign servers complicates legal action.

4. Lack of Accountability from Tech Companies: Congressional hearings (February 2025) revealed Big Tech's failure to curb online child exploitation. Platforms like **Meta, X, TikTok, and Snapchat** profit from engagement metrics rather than child safety.

5. Technological Advancements and AI Exploitation: AI-driven deepfakes and **child-targeted content recommendation algorithms** pose new risks. **Metaverse and VR platforms** enable more immersive and harmful child exploitation methods. **Dark Web and Encrypted Platforms: Telegram, Tor, and end-to-end encrypted apps** enable anonymous dissemination.

6. Inadequate Public Awareness and Digital Literacy: Schools and parents lack **cyber safety education**. Children unknowingly share sensitive data online, **fueling predatory activities**.

What should be the Way Forward?

 1. Legal and Policy Reforms

- Amend the **POCSO Act** to replace **'child pornography'** with **"CSAM" (NHRC Advisory, 2023).**
- Define **"sexually explicit content" in Section 67B of IT Act** to enable real-time blocking.
- Expand **'intermediary' definition in IT Act** to include **VPNs, Virtual Private Servers (VPS), and Cloud Services**.
- Adopt the **UN Draft Convention on Countering ICT for Criminal Purposes**.

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- Integrate provisions of the **U.K. model law criminalizing AI tools for CSAM** into the **Digital India Act**.

2. Holding Tech Companies Accountable: Implement **'safety by design' models** in social media and gaming platforms. Enforce **strict content moderation policies** and AI-based CSAM detection mechanisms. **Adopt global best practices*** from the **UK's upcoming AI-Child Abuse Law**.

3. AI-Powered Monitoring & Law Enforcement Capacity Building: Develop a **National AI-Driven CSAM Detection Unit**. Equip **Interpol-assisted cyber forensic labs** in major cities. Collaborate with **social media giants** to enhance **automated CSAM detection**.

4. Enhancing Public Awareness and Digital Literacy: Launch **school-level digital safety programs** integrated into civic education. Introduce a **National AI Ethics and Child Safety Policy**.

5. Global Collaboration and Cross-Border Data Sharing: Strengthen India's engagement with **Interpol's Crimes Against Children Initiative**. Establish a **South Asian Cybercrime Cooperation Framework** for intelligence sharing.

6. International Collaboration and Policy Reforms: Advocate for the **UN Draft Convention on Cyber Crimes** to **criminalize AI-based child exploitation**. Adopt **best practices from UNICEF's Child-Centric AI Framework**.

Conclusion

The rise of AI-generated CSAM presents a **new-age digital crime** that requires **immediate legislative action, AI-driven enforcement, and public awareness.** India, with its **growing digital population (900 million users)**, must proactively address this crisis by integrating **technological advancements, global best practices, and legal reforms**. As "**digital child abuse**" evolves, so must our strategies to **safeguard children's rights, uphold national security, and build a safer digital ecosystem** for the future.

> **Read more**– The Hindu
> **UPSC Syllabus- GS 3**-Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges

Satellite-Based Internet for India- Significance & Challenges- Explained Pointwise

Satellite internet's expansion offers **high-speed connectivity to remote areas,** crucial for **India's digital inclusion. SpaceX's Starlink partnerships with Airtel and Jio** signal a major connectivity shift. The **global LEO satellite market** is projected to reach **$40 billion by 2030.** However, this raises concerns about **monopolization and digital dependence.**

Given India's projected $1 trillion digital economy by 2025 (NASSCOM), and NITI Aayog's 2021 Report on Digital Infrastructure emphasis on an **indigenous satellite ecosystem, digital sovereignty** is vital for India's economic and geopolitical security.

What is Satellite-Based Internet?

Satellite Internet provides broadband services using **low-earth orbit (LEO) (550–1,200 km altitude)**, eliminating the need for physical infrastructure like fiber optic cables. The leading global players include:

- **Starlink (SpaceX): 7,000+ satellites** (largest constellation).

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- **OneWeb (India's Bharti Airtel-backed): 650 satellites**.
- **Project Kuiper (Amazon):** Yet to launch commercially.
- **China's GuoWang – 13,000 planned satellites**, state-controlled, aiming for a **Digital Sovereignty** model.

With **India aiming for universal digital connectivity**, satellite Internet offers an opportunity, but it comes with **geopolitical and economic trade-offs**.
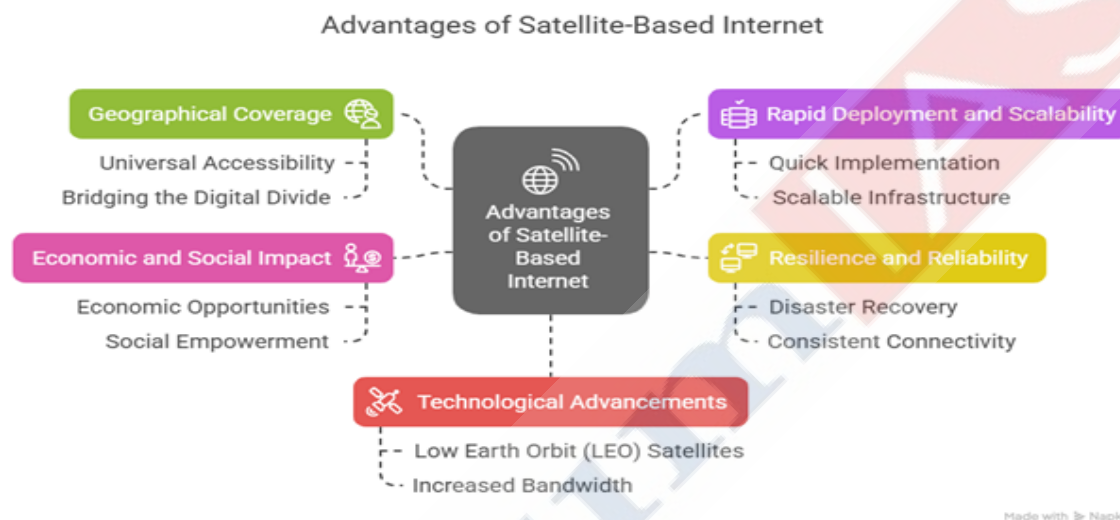
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What is the Significance of Satellite-Based Internet for India?

1. Universal Connectivity & Bridging the Digital Divide: India had 52.4% internet penetration only, with 900 million users **(TRAI, 2025)** still has **regions where fiber optic cables have never reached**, making satellite Internet a game-changer.

- In remote areas of **Ladakh and Arunachal Pradesh**, satellite-based internet can enable **telemedicine, digital education, and financial inclusion**.
- **Satellite Internet can provide high-speed Internet in rural and tribal areas** where fiber optics are economically unviable.

2. Economic Growth: Enhances **e-commerce, digital banking, education (PM e-Vidya), telemedicine (e-Sanjeevani)**, **digital Economy, MSME integration** and startups. **FICCI (2023) estimates** that satellite broadband can add **$50 billion to India's GDP**. **E.g.** E-commerce and digital payments can thrive in rural areas with enhanced connectivity.

3. National Security and Strategic Autonomy: Essential for strategic military communication use in border areas (e.g., Eastern Ladakh, Arunachal Pradesh). Indigenous satellite networks protect against **cyber espionage and data interception. E.g. China's BeiDou Navigation System** reduces reliance on US-owned GPS, underscoring the need for India's independent capabilities**.**

4. Geopolitical Alignment: India's **partnership with Starlink** reflects **geopolitical alignment with the U.S.** rather than China. **GuoWang vs. Starlink**, China's satellite ambitions create a **new "space race" for digital**

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influence. **Avoids China's "Digital Silk Road" influence**, ensuring **data security**. **Potential U.S. leverage over India's digital infrastructure**, similar to how SpaceX restricted Starlink's use in Ukraine (2022).

5. Disaster Resilience: **Resilient communication and real-time monitoring** using satellite networks **during floods, cyclones, and earthquakes**, unlike terrestrial networks. E.g. During the **2018 Kerala floods**, ISRO's satellite communications facilitated **relief operations and rescue missions**.

6. Global Competitiveness and Space Diplomacy: Strengthening **India's position in space-tech alliances**. **E.g.** India's collaboration with **France (OneWeb) and Japan (ISRO-JAXA partnerships)** enhances global technological leadership.

7. Enabling 5G and Future Networks: network integration and low-latency services using satellite networks support **5G backhaul infrastructure** in remote areas. **Case Study:** In the **US, Starlink aids T-Mobile's 5G expansion**, showcasing the potential synergy for India.

8. Agricultural and Environmental Monitoring: Real-time satellite data can **enhance agricultural productivity (like precision farming, climate resilience)**. **E.g.** The **Pradhan Mantri Fasal Bima Yojana (PMFBY)** can benefit from real-time weather monitoring via satellite networks.

What are the government Initiatives for Satellite Internet in India?

1. "BharatNet Project" – Aims to connect **2.5 lakh Gram Panchayats** with broadband, but challenges persist.

2. ISRO's GSAT Series Satellites – Enables digital connectivity, but lacks private-sector scale.

3. New Space Policy 2023 – Promotes **private-sector participation** in satellite communications.

4. Liberalized FDI Policy – Allows **100% FDI in satellite technology** to boost private investment.

5. Public-Private Partnerships (PPP) – **Airtel-OneWeb, Jio-Starlink** model ensures faster rollout without huge infrastructure costs.

What are the Challenges in Implementing Satellite Internet?

1. Monopoly & Market Control: Starlink enjoys first-mover advantage with 7,000 satellites vs. OneWeb's 650. **Dominates 80% of LEO satellites** (Tendency towards **private oligopoly**).

2. Regulatory and Sovereignty Challenges

- **National security risks**: **A foreign-controlled system can be weaponized**, affecting critical sectors.
- **BSNL's Absence**: Excluding BSNL limits India's **direct control over satellite-based communication**.
- **Data Sovereignty Issues**: Where will Indian user data be stored? If stored in the U.S., this raises **serious privacy and cybersecurity concerns**.

3. Spectrum and Regulatory Challenges: Spectrum allocation and licensing issues like **disputes over Ku and Ka-band** frequencies delay approvals. **The TRAI and DoT** face hurdles in allocating **spectrum to private players like Starlink.**

4. Geopolitical and Strategic Risks: Riska of **tech sovereignty** due to foreign satellite providers and lack of **clear global regulations on satellite data ownership**. **E.g.** The **Personal Data Protection Bill (India, 2023)** lacks specific provisions for satellite data privacy and **U.S. data laws (CLOUD Act)** could compromise **India's data sovereignty**.

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5. Cybersecurity Threats: Risk of **cyber espionage, hacking, satellite jamming, and data breaches**. **Case Study: Russia's cyberattack on Viasat (Ukraine, 2022)** showed vulnerabilities in satellite-based networks.

6. High Cost of Deployment: Satellite broadband costs **5-10 times more** than fiber-optic networks. **E.g. Starlink's** pricing at **~₹1,58,000 per year** is unaffordable for many Indians.

7. Space Debris and Sustainability: Orbital pollution due to overcrowding in **LEO** increases collision risks. **E.g. The European Space Agency** warns about **satellite congestion and potential Kessler Syndrome**.

What Should be the Way Forward?

1. Strengthening Domestic Satellite Infrastructure: ISRO and private sector collaboration to launch a **Made-in-India LEO satellite network**. India should integrate BSNL into satellite partnerships for **greater state control**.

2. Legal and Regulatory Safeguards

- **Data Localization Laws**: Enforce **local data storage mandates** to prevent foreign control over Indian user data. E.g. like **EU's GDPR** for satellite operators.
- **National Security Vetting**: Limit **foreign ownership** in critical satellite communication infrastructure.

3. Developing Affordable Pricing Models: Tiered pricing for rural India as, **"innovation at the bottom of the pyramid"** – a strategy to **make satellite Internet affordable**. Conditional g**overnment subsidies** on private players providing services to **remote villages at affordable costs**.

4. International Cooperation for Global Space Governance: Establishing global satellite Internet governance frameworks. **Leading discussions at the UN and G20** to address **space traffic management and orbital debris**.

5. Diversification: Avoid over-reliance on one provider – explore partnerships with **OneWeb, Amazon Kuiper, and Japan's SoftBank Satcom**. Collaborate with **QUAD, ASEAN, and BRICS nations** for satellite security policies. E.g. India-France **joint space programs on cybersecurity**.

6. Global Governance: **ITU & UNOOSA** must regulate **orbital traffic/debris**. **India should lead** in **Global Satellite Internet Governance** initiatives.

 Conclusion

Satellite-based Internet is a **double-edged sword**. **It offers India a chance to bridge the digital divide, boost economic growth, and enhance security**. **But it also poses risks of monopolization, strategic dependence, and digital sovereignty erosion**. India's **current model of "managed dependency" on Starlink via Airtel and Jio is a pragmatic short-term approach**. However, to **achieve true "Digital Sovereignty"**, India must **develop indigenous satellite broadband capabilities, enforce regulatory safeguards, and ensure affordability for all**.

> **Read more**– The Hindu
> **UPSC Syllabus- GS 3**– Awareness in the fields of IT, Space, Computers

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Role of the Speaker and Anti-Defection Law in India- Explained Pointwise

The **Tenth Schedule** of the Indian Constitution, also known as the **Anti-Defection Law**, was inserted by the **52nd Constitutional Amendment Act, 1985**, to curb the growing menace of political defections which destabilized governments in the post-1967 era. However, in recent years, the issue has once again taken center stage due to partisan actions by **Legislative Speakers**, resulting in erosion of **democratic values and legal safeguards**.

What is the Tenth Schedule?

It addresses disqualification of **MPs and MLAs for defection**, a response to the political instability of the late 1960s when **"party-hopping MLAs"** toppled multiple state governments.

Key Provisions: Disqualification occurs if a member voluntarily relinquishes party membership, votes against party directives, or joins another party (for independents or nominated members after six months).

Evolution of Defection Law

Period	Development/Event	Speaker's Role	Examples
1985	**52nd Constitutional Amendment Act** inserts the **Tenth Schedule** into the Constitution	Speaker given **sole adjudicatory powers** on disqualification of members	Speaker acts as **quasi-judicial authority** under Tenth Schedule
1992	**Kihoto Hollohan v. Zachillhu** (SC) upholds the **constitutionality of Tenth Schedule**, but allows **judicial review** of Speaker's decision	Speaker's decision subject to **judicial review**, though he remains the initial authority	SC: "Speaker acts as tribunal; not above the Constitution"
1998–2003	Rise in coalition politics; loopholes like **split (1/3rd rule)** used to avoid disqualification	Speaker's bias becomes evident; mass defections legalized under 'split' provision	Karnataka, Uttar Pradesh, Goa saw misuse of split clause
2003	**91st Constitutional Amendment** removes the **split provision (1/3rd)** and introduces **merger provision (2/3rd)**	Speaker continues to decide on disqualification, including verifying mergers	Aimed at tightening law but allowed mass defections under 'merger' loophole

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2020	**Keisham Meghachandra v. Speaker, Manipur**: SC suggests Speaker should not have exclusive powers	SC recommends **independent tribunal headed by a retired judge**	Speaker delayed decision for over 3 years; defector became Minister
2023	SC in **Maharashtra case** (Shinde vs. Thackeray): directs Speaker to decide within reasonable time	Court sets **specific deadlines** for Speaker's decision	October 2023: SC orders Maharashtra Speaker to decide within 2 weeks
Ongoing Debate	Law Commission (1999), Dinesh Goswami Committee (1990), and others suggest reforms	Push to remove Speaker's adjudicatory power; proposal for independent authority	Recommendations remain unimplemented; discussed in Presiding Officers' Conferences

What is the Significance and Importance of an Independent and Neutral Speaker?

1. Guardianship of Legislative Integrity: The Speaker is expected to promote **institutional neutrality, rule of law** and to act as a **quasi-judicial authority** under the Tenth Schedule, but when partisanship takes precedence, it **jeopardizes constitutional morality. E.g.** The 2020 Arunachal Pradesh defection case Supreme Court reiterated, **"neutrality of the Speaker is critical to democratic stability".**

2. Timely Adjudication and Trust in Institutions: The 2023 Constitution Bench in **Keisham Meghachandra Singh v. Speaker Manipur** reiterated that delays in disqualification proceedings violate the **spirit of democracy**.

3. Check on Political Horse-trading: The absence of an impartial Speaker allows post-election defections to the ruling party, as seen in **Karnataka (2019)** and **Goa (2017)**.

4. Constitutional Expectation: The Speaker is expected to embody "propriety and impartiality," as noted by a five-judge Constitution Bench in May 2023, ensuring the Tenth Schedule's objective—to stabilize governments—is upheld.

5. Judicial Perspective: Justice Gavai's observation that a **speaker's "indecision" cannot defeat the anti-defection law's purpose** emphasizes the need for neutrality. The Supreme Court's invocation of Article 142 powers in cases of non-compliance further reinforces this.

What are the government Initiatives and institutional Developments?

1. All India Presiding Officers Conference (2021-2023): Discussed reforms in Speaker's powers under the anti-defection law. Multiple officers expressed that **"Speakers' roles must be reviewed".**

2. 91st Constitutional Amendment Act, 2003: Made merger provisions more stringent by raising the requirement to **two-thirds of members** for party mergers.

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3. Supreme Court's Role as Constitutional Guardian: **Article 142** has been invoked to **"ensure justice is not defeated by technicality or partisan silence"** — SC has directed Speakers in **Maharashtra, Karnataka, and Telangana** to act within a "reasonable time frame."

What are the challenges to the Autonomy and Integrity of Speaker's Role?
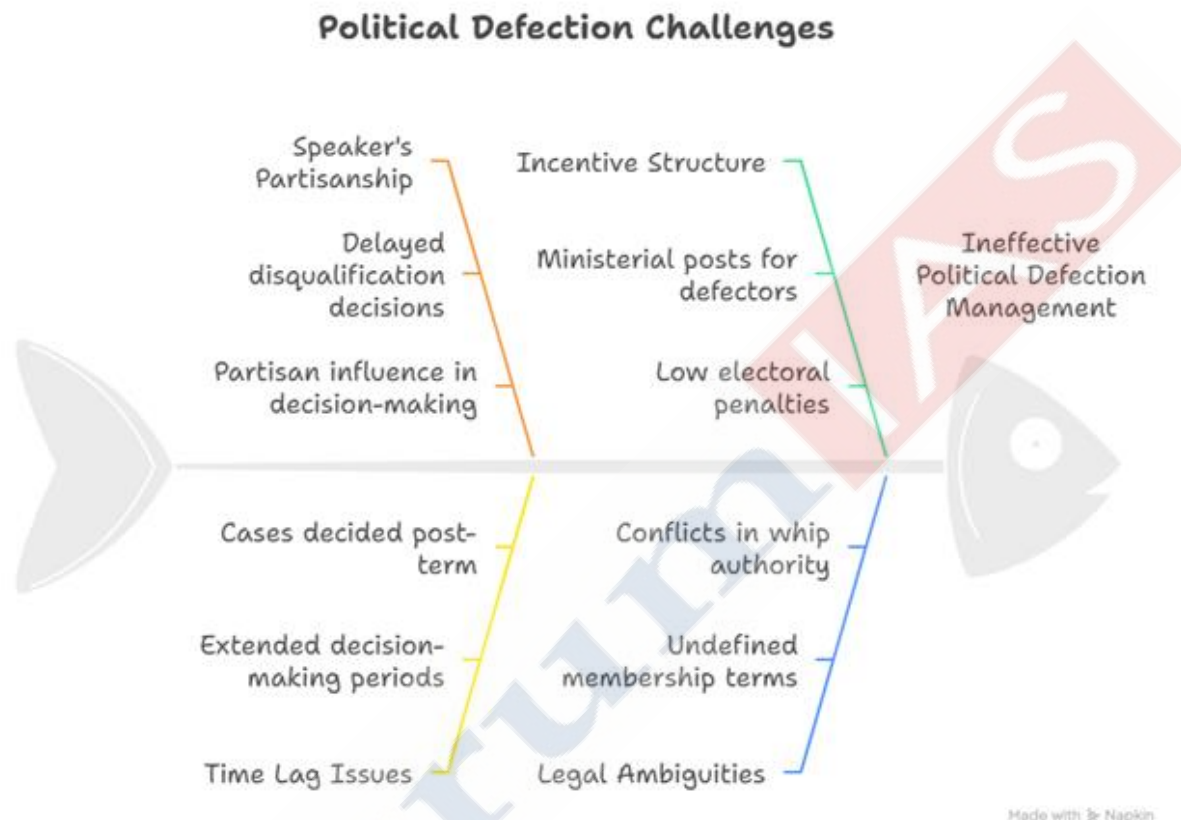
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1. Structural Partisanship & Political Capture: Speakers are elected by ruling parties and often act in a politically motivated manner. **E.g. Maharashtra defection case (2022)** where delay benefited defectors who joined the ruling coalition.

2. Procedural Vacuum & Legal Ambiguity: The Tenth Schedule is silent on timelines for deciding petitions. Exceptions include **a "merger" where at least two-thirds of a party's members agree**, as amended by the 91st Constitutional Amendment Act, 2003 **(up from one-third in 1985).**

3. Limited Jurisdiction & Constitutional Boundaries: Courts cannot dictate the decision of the Speaker but can only ensure timely adjudication, limiting judicial recourse.

4. Legal Ambiguities: No definition of **voluntary giving up membership** and Whip's authority vs. conscience vote conflicts. **E.g. Average 2.3 years for disqualification decisions (ADR 2022 study), 68% cases decided after MLA's term ended (PRS 2023).**

5. Misuse of Delay to Influence Governance: Defectors are inducted as Ministers or enjoy influence before eventual disqualification. **E.g. Defecting MLAs get ministerial posts in 71% cases (CMS 2021 study),** only 12% of defectors lost subsequent elections **(Trivedi Centre 2023).**

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6. Democratic Fatigue & Electoral Cynicism: Frequent defections with impunity undermine public faith in electoral processes.

7. Institutional Opacity & Role Ambiguity: No penalties or disciplinary procedures exist for Speakers who delay decisions.

8. Political-Electoral Engineering: Major parties like the have engineered mass defections post-elections in Goa, Manipur, and Madhya Pradesh.

What should be the Way Forward?

1. Independent Tribunal Mechanism: Establish a **neutral tribunal headed by retired judges** to decide disqualification pleas, as recommended by **Law Commission** and **NCRWC**.

2. Statutory Timeline for Decision: Amend the law to provide a **maximum of 60 days** to decide defection cases.

3. Code of Conduct for Presiding Officers: Create binding **norms and codes** for neutrality and accountability.

4. Constitutional Remedy & Democratic Safeguard: Allow courts to intervene if decisions are unduly delayed, using **Article 142** for enforcing timelines.

5. Public Accountability and Electoral Penalty: Launch civic education campaigns and promote electoral punishment for defectors.

6. Strengthening Intra-Party Democracy: Empower parties to uphold ideological integrity and reduce dependence on post-election deals.

7. Global Best Practices

- In **UK and Canada**, Speakers are strictly non-partisan and elected by a secret ballot across party lines.
- In **South Africa**, a Judicial Commission handles defection matters, not the Speaker.

8. Committees Recommendations

- The **Dinesh Goswami Committee (1990)** and **Law Commission's 170th Report (1999)** recommended divesting the Speaker of adjudicatory powers under the Tenth Schedule.
- **NITI Aayog and National Commission to Review the Working of the Constitution (NCRWC)** have advocated for setting up an independent tribunal headed by a retired judge.

Read more– The Hindu
UPSC Syllabus- GS 2- Indian Constitution—historical underpinnings, evolution, features, amendments, significant provisions and basic structure

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Preventive Healthcare in India- Explained Pointwise

India's economic aspirations of becoming a **$5 trillion economy** are threatened by a **"silent epidemic"** of **Non-Communicable Diseases (NCDs)**, which account for **66% of all deaths** (WHO 2023). With **5-6 million annual NCD deaths** and **22% of India.** These chronic illnesses, often preventable, are fast becoming the **leading cause of mortality and morbidity**, placing massive strain on India's healthcare system and economy.

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What is the "Silent Epidemic"? Understanding NCDs

Non-Communicable Diseases (NCDs) refer to chronic conditions that are **not caused by infectious agents** and typically progress slowly. Major NCDs include:

1. Major NCDs:

- **Cardiovascular diseases (CVDs)**: Leading cause of death (28% share).
- **Diabetes**: 101 million cases (highest globally, **ICMR 2023**).
- **Cancer**: 1.4 million new cases yearly (**National Cancer Registry**).
- **Chronic Respiratory Diseases**: Linked to **air pollution** (COPD affects 55 million).

2. Early Onset: **Heart attacks in 30–40-year-olds** rising due to sedentary lifestyles, **E.g.** Delhi NCR reports **25% increase in young stroke patients (AIIMS 2024).**

Impact:

1. Economic Cost: NCDs drain **5-10% of GDP** (~$3.5–4 trillion loss projected by 2030, **WEF-Harvard Study**).

2. Risk Factors: 80% of heart disease, stroke, and diabetes cases are preventable (**WHO**).

3. Lifestyle Crisis: **23% adults overweight**, 30% hypertensive (**NFHS-5**).

4. Death Parameters: NCDs account for nearly 66% of all deaths in India. (WHO India, 2023). An estimated **5-6 million Indians die annually** due to NCDs. **22% of Indians aged 30+ are at risk of dying from an NCD before age 70**.

5. Diabetes/ Cancer Capital of the World: Increasing incidence in the **30–40-year age group** — especially cardiac diseases and diabetic complications.

6. Productivity Loss: WHO estimates that India may lose **$3.5-$4 trillion** between 2012 and 2030 due to NCD-related productivity losses.

What is Preventive Healthcare?

Preventive healthcare focuses on averting the onset of diseases through:

1. Primary Prevention: **Vaccinations**, anti-tobacco campaigns (e.g., **COTPA Act**). E.g. Kerala's **"Aardram Mission"** reduced CVD risks via screening.

2. Secondary Prevention: **Early detection,** Mammograms, HbA1c tests for diabetes.

3. Tertiary Prevention: **Rehabilitation**, post-stroke physiotherapy, Use of **wearables and mobile apps** to monitor vitals like heart rate and activity levels.

It is guided by the principle of "**catching the disease before it catches you**".

What is the significance of Preventive Healthcare in India?

1. Demographic Dividend & Workforce Productivity: NCDs are affecting the **working-age population**, undermining India's economic potential. **E.g. 65% population under 35**—NCDs threaten labor productivity.

2. Economic Imperative: NCDs cost India an estimated **5%-10% of GDP** annually. A **World Economic Forum-Harvard study** projected $3.5-$4 trillion losses by 2030.

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3. Health System Burden Reduction: Preventive models reduce strain on secondary and tertiary care systems. E.g. **Early diabetic care** avoids need for dialysis or amputations.

4. Digital & AI Integration: India has 750+ million smartphone users — offering a wide digital reach. AI tools can create personalized **health risk scores**, enabling early alerts. E.g. Machine learning to detect early signs of lung nodules or fatty liver.

5. SDG Alignment: **SDG 3.4**, reduce NCD deaths by **30% by 2030**.

What are the Government Initiatives for Preventive Healthcare?

1. National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS): It is part of the **National Health Mission (NHM)** which focuses upon community-based screening, diagnosis, and health promotion. **E.g. 677 NCD clinics and 187 District Cardiac Care Units set up (MoHFW, 2023).**

2. Ayushman Bharat – Health and Wellness Centres (HWCs): Over **1.6 lakh HWCs** operational as of March 2024. It provides **preventive, promotive, and curative services** at the grassroots. It provides services like screening for hypertension, diabetes, oral/breast/cervical cancers.

3. Fit India Movement & Eat Right India: Behavioral change campaigns promoting active lifestyle and healthy eating. **E.g. #22KStepsChallenge.**

4. School Health Programme: Joint initiative by the **Ministry of Education & Health** under Ayushman Bharat. Focuses on health education and screening of school children.

5. National Tele Mental Health Programme (Tele-MANAS): Addresses **mental health**, a rising component of the NCD burden.

6. National Clean Air Programme (NCAP): To address **air pollution**, a contributor to COPD and cardiac issues.

7. Pradhan Mantri Jan Arogya Yojana (PMJAY): Covers NCD treatments **for 500 million.**

8. Disease Surveillance: India's **Integrated Health Information Platform (IHIP)** and the **Integrated Disease Surveillance Programme (IDSP)** enable real-time disease tracking, vital for early detection and response to outbreaks.

What are the challenges to Preventive Healthcare in India?

1. Low Public Awareness: Health-seeking behavior is often **reactive**, not preventive. Screening is often neglected until symptoms arise. **E.g. Only 12% Indians access preventive screenings (NITI Aayog 2023).**

2. Fragmented Healthcare System: Preventive services are **underfunded** and lack integration with curative services. **E.g. Out-of-pocket expenditure on health: 47%** (NHA Estimates, 2023).

3. Inadequate Screening Infrastructure: Shortage of trained personnel and equipment at the primary level. **E.g. Low availability** of **mammography and HPV testing** facilities.

4. Urban-Rural Divide: Rural India lacks **access to digital health tools and diagnostics**.

5. Air Pollution as a Urbanization Hazards: India has **7 of the world's 10 most polluted cities (IQAir, 2024).** Contributes to lung disease, strokes, and even cardiac problems. E.g. **Air pollution** causes **1.6 million annual deaths** (**Lancet**).

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6. Behavioral Barriers: **"Chalta Hai" attitude** toward health checks. **E.g. NFHS-5**: Only **38% women** get blood sugar tests.

What should be the Way Forward?

1. Strengthen Primary Health Infrastructure: Expand HWCs with **adequate staff, diagnostics, and telemedicine**. Invest in **rural digital infrastructure** to support tech-driven preventive care. **E.g. Economic Survey 2022-23, e**mphasizes the shift towards **preventive and promotive healthcare** as a long-term cost-saving strategy.

2. Leverage AI and Big Data: Use **AI algorithms** for predictive modelling and risk mapping. Partner with private tech companies for scalable health solutions. Use **Aayushman Bharat Digital Mission (ABDM)** for predictive analytics. **E.g. Telangana's "eHealth"** app tracks NCD risks.

3. Regulatory Action: Enforce **food labeling norms**, **sugar/fat/salt limits**, and junk food taxes. Implement **urban planning** reforms to create more walkable green spaces.

4. Corporate, Schools and Community Engagement: Mandate **employee wellness programs**. Encourage **community health volunteers** and local schools for awareness campaigns. **E.g. Google India's Fit Weeks.** **"Health Olympics" in schools (modeled on Australia's "Active Kids").**

5. Integrate Health into All Policies (HiAP): Kasturirangan committee: suggested health literacy in school curriculum. Embed health concerns in **education, transport, housing, environment**, etc. **Health Impact Assessments (HIA)** before approving infrastructure projects**. E.g. NITI Aayog Health Index,** also recommends states to prioritize health education and preventive spending.

6. Fiscal Measures: Increase health spending to **2.5% of GDP** (currently **1.28%, Economic Survey 2024**). Additionally **Sin Tax** on ultra-processed foods (like **Mexico's soda tax**). **Insurance discounts** for healthy habits (e.g., **Singapore's "Healthier SG"**).

7. Behavioral Nudges: Use **"nudge theory"** for behavior change — reminders, gamification, rewards for healthy choices.

8. Global Best Practice/ Models:

- **Japan's "Specific Health Checkups"**: Mandatory annual screenings cut metabolic syndrome by **25%**.
- **Finland's North Karelia Project**: Reduced CVD deaths by **80%** via diet/exercise campaigns.
- **Singapore's "War on Diabetes"**: Nationwide screening + sugar tax.

Conclusion

The battle against NCDs is not just a medical one — it is a **societal and economic challenge**. A shift to a **preventive mindset**, where individuals, communities, corporates, and the government all prioritize "health-first", is essential. As the article rightly states — "**an investment in preventive healthcare is our best insurance policy for sustainable development**." The power to transform lies in our daily choices. If scaled across **1.4 billion Indians**, these choices will not only create a healthier nation but also **propel India towards its economic and developmental aspirations.**

Read more–The Hindu
UPSC Syllabus- GS 2– Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources

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Future Ready Workforce- Significance & Challenges- Explained Pointwise

India's ambition to become a **$10 trillion economy by 2047** hinges on its ability to build a **future-ready workforce**. The **World Economic Forum's (WEF) Future of Jobs Report 2025** and the **QS World Future Skills Index** highlight critical gaps and opportunities in India's workforce preparedness, presenting a strategic roadmap for transforming education, skilling, and employment. With **92 million jobs at risk of displacement** and **170 million new roles emerging**, India must urgently reform its **skilling, education, and policy frameworks**.

What is a Future Ready Workforce?

A **future-ready workforce** is one that is **resilient, technologically adept, adaptable to disruptions**, and equipped with both **cognitive and non-cognitive skills** to navigate the **21st-century global economy**. As India marches toward its demographic peak, with over **65% of the population below 35 years**, preparing the workforce for the demands of **India@2047** is not merely aspirational—it is imperative.

What are the key Findings from the World Economic Forum's Future of Jobs Report 2025?

1. Technological Disruption & Green Transition: Technological advancements and digital access are expected to be the **top driver of labour market transformation**, with **60% of employers identifying them as key influences**. Simultaneously, **50% of employers expect economic factors** such as automation and job displacement to reshape industries. The **green transition**, driven by climate mitigation and geopolitical pressures, is projected to both displace traditional jobs and create **170 million new roles**, especially in renewable energy and sustainability.

2. Job Creation vs Job Displacement: An estimated **92 million roles could become obsolete**, underscoring the need for **reskilling and upskilling**. Emerging roles in **AI, data science, green technologies**, and **digital finance** will see exponential growth.

3. Skills Gap and Training Needs: 59 out of every 100 workers will require training in **analytical thinking, resilience, and technological literacy**. Soft skills **like emotional intelligence**, **adaptability, and leadership** are now seen as essential in dynamic work environments.

Key insights from the QS World Future Skills Index Regarding India: India ranks 2nd globally in preparedness for AI and green skills but:

- Scores only **59.1** in 'Skills Fit', indicating a mismatch between **available skills** and **employer needs**.
- Ranks just **26th in Academic Readiness**, highlighting poor alignment between curricula and innovation demands.
- Achieves **only 15.6/100 in innovation & sustainability performance**, worsened by **limited R&D investment**.
- WEF says, **"India's potential is immense, but performance gaps in skill delivery and academic innovation limit its global competitiveness."**

What is the significance of a Future-Ready Workforce?

1. Demographic Dividend: With over **1 million youth entering the workforce monthly**, 65% of the population under **35 years** must be skilled for **Industry 4.0**.

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2. Economic Competitiveness: A skilled workforce contributes directly to **GDP growth**, global value chain participation, and **Atmanirbhar Bharat**. The **Economic Survey 2022-23** emphasized the need to enhance employability through demand-aligned training.

3. Harnessing Global Opportunities: India's workforce can cater to the **global skill shortage**, especially in areas like **nursing, construction, and tech services**.

4. Global Competitiveness: India aims to be the **global hub for AI and green tech** (PM's **"AI for All" vision**). E.g. Israel's **"Innovation Nation" model** (5% GDP spent on R&D).

5. Social Stability & Equity: Equipping youth with future skills will reduce **regional, rural-urban, and gender disparities** in employment. **E.g. SWAYAM MOOCs**.

What are the government Initiatives towards a Future-Ready Workforce?

1. Skill Development Missions:

- **Skill India Mission**, **500 million** skilled workers by **2030**.
- **PM Kaushal Vikas Yojana (PMKVY),** offers short-term training with industry linkages.
- **SANKALP & STRIVE Projects** (World Bank-aided), focus on institutional capacity and skilling ecosystem reform.
- **Academic Bank of Credits** for flexible learning.

2. National Education Policy 2020: Introduces **"multidisciplinary education"**, **experiential learning, coding from Class 6, and flexible exit options** in higher education. Emphasizes **vocational training integrated into mainstream education.**

3. Digital Infrastructure:

- **DIKSHA and SWAYAM platforms**, expand e-learning access.
- **PM e-Vidya and BharatNet** aim to bridge the **rural-urban divide** in digital access.

4. Entrepreneurial Ecosystem: Startup India, **Atal Innovation Mission (AIM)**, and **National Innovation Foundation** support skill-based entrepreneurship.

What are the Challenges in Building a Future-Ready Workforce?

1. Skills Mismatch:

- **India Skills Report 2023** only **46.8% of graduates are employable**.
- **QS Index** there is low **'skills fit'** despite high **'skills identification' among Indian youth.**
- **NSDC-2023** only **5% of the workforce is formally** skilled.
- **Aspiring Minds Report- 83% engineer's unemployable**.
- **Digital Divide**: **Only 31% rural schools** have internet (**UDISE 2022**).

2. Faculty & Curriculum Gaps: Outdated curricula, **theoretical focus, lack** of **experiential learning** and insufficient faculty training. **India ranks 101 out of 132** in the **Global Innovation Index 2023** in **"Knowledge Workers".**

3. Inequitable Access: Digital divide persists as **only 29% of rural India has internet access (NFHS-5).** Gender disparity in STEM fields and skill programs remains wide.

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4. Low R&D Investment: India's R&D spending is **only 0.7% of GDP (vs. 2.8% in US)**, compared to 3% in developed countries. **E.g.** India files **60 patents per million** vs. **China's 1,200** (**WIPO 2023**).

5. Weak Academia-Industry Linkages: Lack of internship opportunities, applied learning, and real-time market feedback in academia. **E.g.** As per **AICTE, less** than **10% of universities** collaborate with industries.

What should be the Way Forward?

1. Curriculum Overhaul & Experiential Learning: Embed **"problem-solving, critical thinking, entrepreneurial thinking"** into the curriculum. Promote **design thinking workshops, hackathons, interdisciplinary projects.** Establish **Centres of Excellence in AI, climate science, digital finance**, and green innovation. E.g. Finland's **"Phenomenon-Based Learning"**.

2. Green Curriculum & Sustainability Focus: Courses in **renewable energy, ESG standards, circular economy**. Encourage **student-led sustainability** initiatives and **community-based projects.**

3. Industry-Academia Collaboration: Joint curriculum design, internships, mentorship, real-time feedback. **E.g. TCS iON**, **Infosys Springboard**, **AICTE's NEAT platform** and **Apprenticeship Bill 2023** to scale industry training.

4. Faculty Capacity Building: Global faculty exchange programmes, AI training for teachers, certified workshops. **E.g. GIAN.**

5. Inclusive Digital Infrastructure: Invest in **public Wi-Fi**, rural digital labs, regional-language content. **Encourage Regional Skill Development** through **District Skill Committees** and **One District One Skill**. **E.g. PM-WANI.**

6. Policy & Funding Push: Double R&D investment to at least **1.5% of GDP** by 2030. Increase allocations to the **Skill Development Ministry** and **Higher Education Innovation Funds**.

7. Monitoring & Evaluation Framework: Use of AI and Big Data to assess skilling programme outcomes. Create a **"National Skill Preparedness Dashboard".**

8. Global Best Practices:

- **Finland, focus on lifelong learning models**.
- **Germany's Dual Education Systems, 50% youth in vocational training**.
- **Singapore's SkillsFuture, $4,000 credit** per citizen for lifelong learning.

Conclusion

The **"urgency of aligning educational strategies with evolving global demands"** cannot be overstated. India stands at a historic juncture—where its **demographic dividend, digital push, and developmental aspirations** can be harmonized through strategic skilling and education reforms. A **future-ready workforce** is not only key to economic competitiveness but also to **realizing the vision of Viksit Bharat by 2047**. The roadmap lies in **bold, collaborative, and innovative reforms across institutions, industries, and policies**—powered by **data, driven by inclusion, and steered by foresight.**

> **Read more**– The Hindu
> **UPSC Syllabus- GS 3-** Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment

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PM Mudra Yojana- Significance & Challenges- Explained Pointwise

On 8 April 2025, India marks 10 years of the Pradhan Mantri MUDRA Yojana (PMMY). PM Mudra Yojana, the Flagship Programme of the Prime Minister aimed at Funding the Unfunded micro enterprises and small businesses. By removing the burden of collateral and simplifying access, MUDRA laid the foundation for a new era of grassroots entrepreneurship. Over the past decade, the scheme has disbursed over 52 crore loans worth ₹32.61 lakh crore.

What are the salient Features of the Scheme?

MUDRA was set up for **development and refinancing activities** relating to **micro units.** PMMY ensures **collateral-free institutional credit up to Rs 20 lakh,** which is provided by **Member Lending Institutions (MLIs)** i.e. **Scheduled Commercial Banks (SCBs), Regional Rural Banks (RRBs), Non-Banking Financial Companies (NBFCs)** and **Micro Finance Institutions (MFIs**). Under the scheme, three categories of interventions have been formulated which include:

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Category	Loan Amount	Target Segment	Share of Total Loans	Key Sectors Funded
Shishu	Up to ₹50,000	First-time entrepreneurs, nano-units	~88% of total loans	Street vendors, tailoring, petty shops, dairy, home-based work
Kishore	₹50,001–₹5 lakh	Small-scale expansion, working capital	~9–10% of total loans	Food stalls, repair shops, beauty parlors, transport
Tarun	₹5–₹10 lakh	Growth-stage small businesses	~2% of total loans	Manufacturing, logistics, services, retail stores

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Tarun Plus	Loans above ₹10 lakh and up to ₹20 lakh	Designed specifically for Tarun category, who have previously availed and successfully repaid loans

What are the achievements and impact of PM Mudra Yojana?

1. Massive Outreach & Entrepreneurial Shift: Since 2015, over **52 crore loans worth ₹32.61 lakh crore** have been sanctioned under PMMY, shifting the mindset from job-seeking to **job-creating**, especially in small towns and rural India.

2. MSME Credit Surge: MSME lending rose from **₹8.51 lakh crore (FY14)** to **₹27.25 lakh crore (FY24)**; projected to cross **₹30 lakh crore (FY25)**. Their credit share in total bank lending grew from **15.8% to nearly 20%**, boosting grassroots enterprise and self-reliant growth.

3. Women Empowerment through Finance: Women make up **68% of all PMMY beneficiaries**. Average disbursement per woman grew at **13% CAGR**, and their incremental deposits at **14% CAGR**, indicating rising financial empowerment and participation in the workforce.

4. Inclusive Growth for Marginalized Groups: **50% of accounts** are held by SC/ST/OBCs and **11%** by minorities. PMMY has helped integrate these communities into the formal financial system and entrepreneurial economy.

5. Shift Towards Growth-Stage Financing: The share of **Kishor loans** (₹50,000–₹5 lakh) grew from **5.9% (FY16)** to **44.7% (FY25)**, indicating enterprise upscaling. **Tarun loans** (₹5–₹10 lakh) also show growing traction.

6. Rising Loan Sizes & Confidence: Average loan size increased from **₹38,000 (FY16)** to **₹1.02 lakh (FY25)**. Loan disbursal grew **36% in FY23**, reflecting **revived entrepreneurial confidence** and improved scale of operations.

7. Top Performing States and UTs: Leading states in total loan disbursals:

- **Tamil Nadu: ₹3.23 lakh crore**
- **Uttar Pradesh: ₹3.14 lakh crore**
- **Karnataka: ₹3.02 lakh crore**
  Jammu & Kashmir leads among UTs with **₹45,816 crore** disbursed across 21 lakh+ accounts.

8. Funding the Unfunded Micro Sector: Micro enterprises—providing jobs to ~10 crore people—form the backbone of India's non-corporate small business sector. PMMY has enabled credit access to this previously excluded informal economy, aiding livelihoods and economic mobility.

What is the significance of MUDRA Yojana?

1. Financial Inclusion for the Unbanked: Mudra Yojana bridges the **credit gap for small entrepreneurs** who lack collateral or formal credit history. **E.g. 2021 RBI report** highlighted that **70% of Mudra beneficiaries were first-time borrowers**, indicating enhanced financial inclusion.

2. Democratization and Grassroots Development: Democratized credit in Tier-2, Tier-3 cities and rural areas and 1st-time entrepreneurs from marginalized communities.

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3. Boosting Entrepreneurship & Employment: It has spurred self-employment, particularly in sectors like **retail, food processing, and handicrafts.** According to **2019 CMIE report**, Mudra loans contributed to the creation of **1.12 crore net new employment opportunities** between 2015 and 2018. **Case Study: Lalita Devi (Varanasi)** – A homemaker who started a small tailoring unit with a ₹50,000 Shishu loan, now employs five women.

4. A Gender-Inclusive Economic Policy: Played a crucial role in India's rise in female labor force participation (from 23% in 2017-18 to ~41.7% in 2023-24, PLFS). **Case Study: Shanti Devi (Rajasthan)** – Used a Kishore loan to expand her papad-making business, increasing her monthly income from ₹5,000 to ₹25,000.

5. Supporting Informal Sector Growth: The scheme formalizes informal businesses by integrating them into the banking system. A **2022 SIDBI report** noted that **30% of Mudra borrowers transitioned to formal credit lines** after initial loans.

6. Alignment with SDGs: Supports SDG 8 (Decent Work and Economic Growth) and SDG 5 (Gender Equality).

7. Boost to Atmanirbhar Bharat: Facilitated local manufacturing, services, and self-reliance post-COVID.

What are the challenges faced by the micro enterprises?

Challenges Faced by Microenterprises
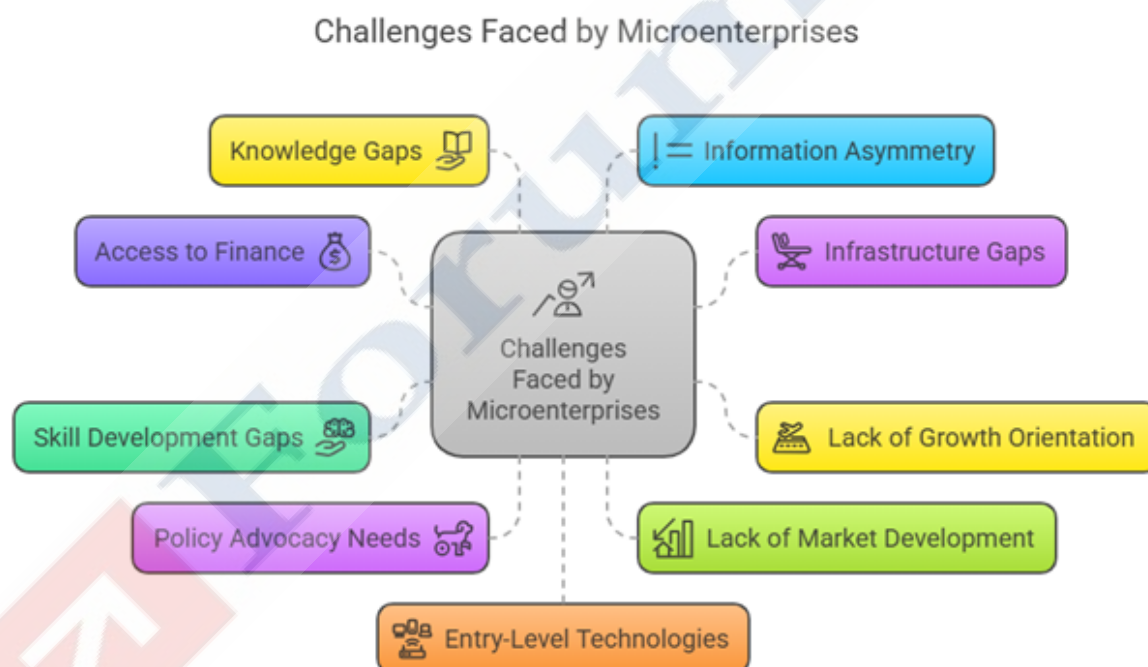
1. Access to Finance: Many micro-entrepreneurs still struggle to secure loans due to **lack of collateral, credit history, or banking access this led to informal debt traps** due to lack of formal credit access. **RBI Report (2023),** found that **~30% of rejected Mudra loan applications** were due to insufficient documentation.

2. Infrastructure Gaps: Poor roads, electricity, and digital connectivity limit business scalability this end up in **lower productivity** → Higher NPAs. **E.g. World Bank (2022),** only **60% of rural MSMEs** have reliable electricity, affecting production.

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3. Lack of Growth Orientation: Most Mudra loans (80% under **Shishu category**) support subsistence-level businesses, not scaling this causes **Stagnation in income levels** despite loan support. E.g. **SIDBI Study (2023),** only **5% of Mudra borrowers** expanded beyond micro-enterprises.

4. Skill Development Gaps: Many borrowers lack **business management, digital, or technical skills.** It increases business failures despite funding. **E.g. NSDC Report (2024), o**nly **25% of Mudra beneficiaries** received formal skill training.

5. Policy Advocacy Needs: Complex regulations and **lack of awareness** about subsidies/tax benefits. **E.g. CAG Audit (2022),** found that **40% of beneficiaries** were unaware of GST exemptions for small businesses.

6. Lack of Market Development/Market Making: No structured **market linkages** for small entrepreneurs. **E.g. NITI Aayog (2023), o**nly **15% of Mudra-made products** reach organized markets.

7. Knowledge Gaps: Entrepreneurs lack **financial literacy, digital banking knowledge, and legal compliance awareness**. **E.g. SEBI Survey (2023): 60% of Mudra borrowers** didn't understand loan repayment terms.

8. Information Asymmetry: Banks lack **real-time data** on borrower credibility, leading to risk aversion. **E.g. TransUnion CIBIL (2024), 35% of rejected loans** were due to insufficient credit history.

9. Entry-Level Technologies: Most micro-entrepreneurs lack **affordable tech tools** (digital payments, inventory software). **E.g. Deloitte Study (2023):** Only **20% of Mudra businesses** use digital tools.

What should be the way forward?

1. From Credit-Linked to Credit-Plus Model: Integrate PMMY with **Skill India**, **Startup India**, and **One District One Product (ODOP)**. Provide digital tools, mentorship, and market linkages. **E.g.** *South Korea's KOSME (Korea SMEs and Startups Agency)* provides **integrated financial + non-financial support**—credit, mentoring, training, and export promotion.

2. Sector-Specific Credit Targets: Promote MUDRA loans in agri-tech, renewable energy, health-tech, and EV-related MSMEs. **E.g.** *Germany's KfW Bank for Green and Tech SMEs,* sets **targeted credit lines** for green energy, circular economy, and tech-driven startups.

3. Robust NPA Monitoring: India can implement **AI-driven early warning systems**, **interactive financial literacy modules**, and **community-based loan circles** for improving repayment culture..

4. Formalization and Tax Incentives: Encourage Mudra borrowers to register under UDYAM and file returns; link with **GST and TReDS.**

5. Stronger Data and Impact Audits: Annual performance audit by third-party bodies; public dashboards on employment and enterprise outcomes. **E.g. UK's British Business Bank.**

6. Regional Credit Ecosystems: India can **empower DLCCs (District Level Consultative Committees)** to become **"Credit Ecosystem Hubs"**, linking PMMY with local Krishi Vigyan Kendras, RSETIs, and Common Service Centres (CSCs). **E.g. Kenya's Huduma Centres.**

Conclusion

The **Pradhan Mantri Mudra Yojana** marks a significant step in democratizing credit and fostering grassroots entrepreneurship in India. Its 10-year journey is a story of empowerment, especially for women and the underserved. However, for India@2047, the success of PMMY must evolve from credit outreach to entrepreneurial **outcomes**, from quantity to **quality** of enterprises. With reforms in mentorship, monitoring,

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and integration with developmental schemes, PMMY can become the backbone of India's self-reliant economy and inclusive growth strategy.

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Aircraft Objects Bill, 2025-Significance & Challenges- Explained Pointwise

The Parliament has recently passed the **Protection of Interests in Aircraft Objects Bill, 2025** to address recurring disputes involving repossession of leased aircraft—exemplified by high-profile cases like **Kingfisher**, **SpiceJet**, and **Go First**. The Bill was introduced to address long-standing challenges in India's aviation sector, particularly the legal uncertainties faced by international lessors & creditors. It also operationalizes the **Cape Town Convention and Aircraft Protocol (CTC)**, a long-pending reform aligned with India's aviation ambitions under **India@2047.**

What is the Cape Town Convention and Aircraft Protocol?

1. The **Cape Town Convention and Protocol**, adopted by the **International Civil Aviation Organization (ICAO)** in **2001**, is an international treaty that:

- **Standardizes legal frameworks** for transactions involving aviation assets like aircrafts, engines, and helicopters.
- **Protects the interests of creditors and lessors**, enabling faster repossession in case of default.
- Creates a **global aircraft registry** and lays out **remedies** for lessors, overriding conflicting domestic insolvency provisions.

2. India signed the Convention in **2008**, but its implementation remained stalled due to the absence of ratification and legislative backing—until now.

What are the key Provisions of the Protection of Interests in Aircraft Objects Bill, 2025?

1. Implementation of Cape Town Convention: Gives statutory force to the CTC and Aircraft Protocol in India.

2. DGCA as Registry Authority: It empowers the **Directorate General of Civil Aviation (DGCA)** to manage registration and de-registration of aircraft as well as issue directions to implement the Convention.

3. Time-bound Repossession: Creditors can reclaim aircraft **within two calendar months** of default or a mutually agreed period, whichever is shorter.

4. Debtor Obligations: Airlines must maintain accurate records of dues and comply with DGCA directions.

5. Overriding Effect: If any existing law conflicts with this Bill, the **provisions of this Bill will prevail**, including over the IBC.

What is the significance of the Bill?

1. Dispute resolution: The legislation establishes a legal framework to resolve the disputes between airlines & lessors over high-value aviation assets, such as, aircraft, helicopters & engines.

2. Global integration: The legislation aims to align India's aviation laws with international standards, in order to boost investor confidence amid rapid fleet expansion by IndiGo & Air India.

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3. Streamlined processes: Once enacted, the law will streamline the processes, allowing lessors to repossess aircraft for unpaid dues, avoiding lengthy court proceedings like those seen with GoFirst's 2023 shutdown.

4. Improving Legal Clarity: According to the Civil Aviation Minister, the Bill provides much-needed legal clarity, citing delays in GoFirst and SpiceJet cases.

5. Enhancing Investor Confidence:

- The Bill will reduce the perceived risks, bringing India closer to global leasing hubs like **Dublin, Singapore**, and **Hong Kong**. Helps attract international financiers and **domestic leasing activity at GIFT City**.
- The Bill will also lower the risk of doing future business in India, which will positively impact an airline's net income.

6. Cost Reduction: Airlines estimate **leasing costs may fall by 8–10%**, which will have a trickle down effect like fleet expansion and financial sustainability as well as potentially reducing the airfares – benefiting the customers.

7. Support for Domestic Leasing Ecosystem: The Bill promotes Gujarat's **GIFT City** as a hub for aviation financing, aligned with **India's Financial Sector Development Council's goals**.

8. Support for Startups: Smaller airlines may benefit from **EXIM Bank's 10% interest rebate** for leasing.

9. Training Hub Vision: With a demand for **30,000 pilots in the next 15–20 years**, the Bill complements the goal of making India a **pilot training hub**.

What are the challenges with respect to aircraft leasing in India?

1. Challenges in Aircraft Leasing & Repossession:

- **Kingfisher Airlines (2012)**: Lessors faced **years-long legal battles** to reclaim the aircraft.
- **Go First (2023)**: Insolvency proceedings under **IBC** imposed a **moratorium**, blocking lessors from reclaiming aircraft for months.
- **SpiceJet-BBAM Dispute ($132 million)**: Legal ambiguities led to prolonged settlement.

2. Conflict with Domestic Laws: Despite India's accession to the **Cape Town Convention (2008)**, the absence of **enabling legislation** has led to conflicts of domestic laws like **IBC and SARFAESI Act** with international standards. Also, courts have often **interpreted the treaties differently**, creating uncertainty for lessors. This led to difficulties in repossessing aircraft during airline insolvencies, as seen in the case of GoFirst (2023).

3. Lag in AWG Rating: The inconsistencies between the domestic laws & international standards has increased the risks of lessors & lowered India's compliance score on Aviation Working Group's (AWG) Cape Town Convention Index. Though India's compliance rating has improved from **50 to 62**, it is still far from the target score of **90** required to match leading jurisdictions.

4. Challenges Faced by Lessors: Moratoriums under the Insolvency and Bankruptcy Code (IBC) prevented lessors from reclaiming assets. **Operational dues to airports and oil companies** were unfairly passed onto lessors. **Complex tax laws** and **ad-hoc arrangements** created an unpredictable business environment.

What are the concerns associated with the Bill?

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1. Unsubstantiated claims:

- Executives in the international leasing industry explain that the claims promoted of reduced leasing costs as a result of proposed law are not entirely true as the creditworthiness of an airline, its financial & volume of orders are the real driving factors, especially for airlines like Air India & IndoGo.
- Similarly, airline executives state that the claims of a likely respite in airfares are exaggerated as ticket prices are driven by market forces of demand & supply for air travel, and that costs incurred by airlines don't drive the fares.

2. Taxation and Regulatory Burden: Industry executives describe India's tax regime as "whimsical, suspicious, and inconsistent." Lessors face **Income Tax notices for using SPVs** to lease aircraft without a "permanent establishment," reducing ease of doing business.

3. Market Dominance & Viability: Concerns over dominance of **IndiGo and Air India**. Debt burdens and high **aviation fuel costs** remain unresolved.

4. Lack of Comprehensive Arbitration Reform: Aviation disputes still fly overseas for resolution. **Bharatiya Vayuyan Adhiniyam, 2024** lacks detailed arbitration provisions.

What should be the way forward?

1. Harmonize with IBC: A formal amendment or override clause in the **Insolvency and Bankruptcy Code** to ensure smooth operation of repossession rights. *E.g. Ireland's Cape Town Convention Act, 2005*

2. Comprehensive Arbitration Reform: Enact a **sectoral dispute resolution mechanism** or amend the **Bharatiya Vayuyan Adhiniyam, 2024** to include arbitration panels under DGCA**. *E.g. Singapore International Arbitration Centre (SIAC)* with a specialized aviation dispute desk.*

3. Simplify Taxation and SPV Norms: Align tax structures with **international leasing norms**, removing ambiguity around SPVs and permanent establishments. *E.g. Introduce 'safe harbor' tax rules* for SPVs operating within IFSC-GIFT City.*

4. Boost Domestic Leasing: Incentivize domestic lessors and financial institutions to invest in aviation through policy support and **EXIM Bank rebates**. *E.g. Japanese Operating Lease (JOL) scheme.*

5. Improve Compliance Ratings: Work with **Aviation Working Group** to reach a **compliance score of 90**, sending a strong signal to international markets. *E.g. UAE, Malaysia*, and *New Zealand* maintain high scores by implementing **CTC-based repossession timelines.**

6. Ratification Monitoring: Regular review of India's compliance with Cape Town Convention. Leverage the **AWG Compliance Index** as a benchmark. *E.g. Institute a CTC Implementation Oversight Committee (CIOC).*

7. Regulatory Integration: Implement recommendations from the **High-Level Committee for Regulatory Reforms** across aviation and financial domains. *E.g. UK's Better Regulation Task Force.*

Conclusion

The **Protection of Interests in Aircraft Objects Bill, 2025**, is a **landmark reform** that addresses long-standing **legal ambiguities** in aircraft leasing. While it **boosts investor confidence** & will align India with global norms, challenges like **taxation disputes** and **delayed implementation** remain. For India to become a **global aviation hub by 2047**, **consistent policy reforms**, **tax rationalization**, and **faster dispute resolution** are crucial. The Bill is a **step in the right direction**, but **sustained efforts** are needed to unlock its full potential.

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Deep Tech Startups-Significance & Challenges-Explained Pointwise

Commerce Minister Piyush Goyal has recently commented that the Indian startup ecosystem is less focused on advanced technologies vis-à-vis China, has led to raising of a question about whether this gap can be closed or not?

In this article we delve about deep tech startups, its significance , the challenges they are facing in India, the initiatives taken by the government for their growth & what could be the way forward.

What are Deep tech Startups?

Deep tech startups refer to startups based on high technology fields like Artificial intelligence, Deep learning, Robotics, Semiconductors, Biotechnology, Space, e-vehicles, etc. which aim to solve complex problems & create significant impact across various sectors.

What is the significance of Deep Tech Startups?

1. Drive innovation: Deep tech innovations form the basis for science & tech breakthroughs. They form the backbone of transformative industries. *For e.g. Discovery of Penicillin by Alexander Fleming in 1928 ushered in the era of antibiotics & dramatically reduced the deaths from infections.*

2. Economic & industrial impact: Deep tech innovations like GenAI can add $1 trillion to India's GDP by 2030. According to the former NITI Aayog CEO Amitabh Kant, the cascading effects of deep tech innovations would be critical for India to become a developed economy. Deep tech startups are crucial for ushering in Industrial Revolution 4.0.

3. Strategic importance: Deep technologies are not only economic drivers, but are essential for developing self-reliance **(Atmanirbharta)** in critical sectors like defence, energy, healthcare etc. Developing & leveraging such deep tech innovations helps in providing a technological bulwark against geopolitical uncertainties & supply chain vulnerabilities *for e.g. China developed DeepSeek AI to achieve technological independence from the West, particularly in the face of US-led restrictions on advanced semiconductors exports.*

4. Solving societal challenges: Development of India-centric deep technologies can help in fueling innovations to provide solutions to India-specific problems like affordable & accessible healthcare or sustainable energy, language-based AI, North-South divide etc.

What are the challenges hindering the growth of deep tech startups in India?

1. Low R&D funding & investment: Annually, USA, UK, Germany & Japan spend >3% of their GDP on R&D, China spends 2.68%, while India spends less than 1% of its GDP. While China's **'Made in China 2025'** initiative poured in >$800bn in strategic sectors, India's total technological investment from 2014-2024 estimated at $160bn is pale in comparison. This funding gap stifles the startups aiming to tackle complex problems. Moreover, the investment from the private sector remains low despite government policies like Make in India.

2. Long gestation conundrum: Building of deep tech innovations takes time – which is usually longer than what the venture capital timelines allow in India. The venture capital landscape in India prioritizes quick return investments over deep tech startups that require patience. This myopic view, coupled with regulatory hurdles like Angel Tax (now scrapped) – stifles deep tech growth in India.

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3. India's talent paradox: Though India produces lakhs of engineers annually, but only a fraction of engineers in India specialize in frontier technologies. Also, there is a continuous brain drain happening from India to Western countries where many Indians are driving innovations at firms like Tesla & NVIDIA or founding startups in Silicon Valley *for e.g. Aravind Srinivas (Co-founder of Perplexity)*.

4. Commercialization bottlenecks: Indian startups face difficulties in scaling-up from prototype to product due to long R&D cycle, weak industry-academia collaboration for tech transfer, lack of regulatory sandbox etc.

5. Regulatory & bureaucratic hurdles: Complicated IP protection & patent filing process, regulatory uncertainties in sectors like genomics, drones etc are delaying the development of deep tech startups.

6. Dominance of USA & China: While the USA is the global leader in through companies like Nvidia, China is also very rapidly catching up. According to a WIPO report, China has filed over 38,000 generative AI patents between 2014-2023. Also, according to a study by the Australian Strategy Policy Institute, China leads globally in 57 out of 64 critical technologies.

7. Stagnation in startup ecosystem: Though India has the 3rd largest startup ecosystem in the world with >100 unicorn startups, but majority of the startups in India are based on quick commerce & other consumer-tech innovations rather than deep tech breakthrough such as startups like OpenAI, Blue Origin, Deep Mind etc.

8. Innovation ecosystem: India lags behind in innovation. According to the Global Innovation Index 2024, India ranks 39th while China ranks 11th. None of the Indian universities rank among global leaders in original research & innovation.

What are the government initiatives?

1. Policy reforms in high tech sectors: Government has taken several initiatives in high tech sectors to promote innovation & private sector participation as well as to boost entrepreneurship & self-reliance for e.g. **Indian Space Policy 2023**, liberalized **Drone Rules 2024**, **Draft National Deep Tech Startup Policy (NDTSP) 2023**, **Nuclear Energy Expansion Policy 2024** etc.

2. India Semiconductor Mission & Design-linked Incentive Scheme: Government has allocated Rs 76,000cr to build FAB capacity & design ecosystems.

3. IndiaAI Mission: In 2024, the Union Cabinet has approved Rs 10,000cr for IndiaAI Mission – which aims to establish a comprehensive AI ecosystem.

4. National Supercomputing Mission: Aim is to build a network of 70 high-performance computer facilities with a cumulative capacity of 45 PF (Petaflops).

5. National Quantum Mission: Aims to put India among the top 6 leading nations involved in the R&D in quantum technologies.

6. Deep Tech Fund: Government has recently announced Rs 10,000cr Deep Tech Fund of Funds as well as Rs 1000cr space tech venture capital fund with the aim to bridge the critical funding gaps & catalyzing innovations. These initiatives also send a strong signal to the private investment ecosystem that India is committed to playing the long game in advanced technology.

7. Innovation ecosystem: Govt has introduced policies like Atal Innovation Mission, NIDHI-PRAYAS, T-Hub, iCreate etc to foster innovation & entrepreneurship at early stages for inquisitive minds.

8. Slow but definite growth: Despite various challenges, India has seen pockets of deep tech startups success – supported by various government initiatives such as Space tech (Skyroot, Agnikul, Digantara), Robotics

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(Addverb, CynLR), Gene editing (CrisprBits), Quantum solutions (Qnu Labs), EVs (Ola, Ather) etc. As per NASSCOM, India's 4000 deep tech startups attracted $1.6bn investment in 2024 – which is a 78% increase year-on-year.

What is the way forward?

1. Increase R&D investments: USA is facilitating a $500bn AI initiative called Stargate, France is mobilizing $112bn in public & private investments towards AI development. China has set up a $138bn fund for accelerating growth in emerging technologies. Thus, India is also required to follow their steps.

2. Increased & patient capital: Attracting more venture capital with a long-term perspective, as well as government-backed funds specifically for deep tech, is crucial. Loan guarantees and other mechanisms to reduce investor risk can help.

3. Industry-Academia linkage: A close collaboration between India's premier universities & research institutes like IITs, IISc and deep-tech startups is needed. *For e.g. India can take inspiration from USA's Federal institutes like Defence Advanced Research Projects Agency & NASA to encourage bold innovations.*

4. Education sector reforms: Reforms in the education sector are needed to build a framework for cutting-edge research & promoting innovation from the very beginning.

5. IPR Ecosystem: Providing robust IPR protection & speeding up the process of patent approval can also help in promoting deep tech innovations in India.

6. Global integration: Encourage international collaboration for joint R&D and market access. Facilitate Indian deep tech participation in global standards bodies & consortia. Promote collaboration of Indian universities & research institutes with global powerhouses in frontier technologies.

7. Developing Specialized Talent: Focused programs to train and upskill professionals in deep tech domains, along with initiatives to attract and retain global talent, are necessary.

Conclusion:

Deep tech startups are essential to India's technological sovereignty, economic resilience, and strategic autonomy. By promoting deep tech entrepreneurship, streamlining regulatory processes, enhancing IP protection, India can unlock the immense potential of its deep tech startups & position itself as global leader in this transformative space.

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Second 1991 Moment – Significance & Challenges – Explained pointwise

'1991' marks an important year in Indian economic history because this is the year when the Indian policymakers adopted the LPG reforms which opened up the Indian economy. However, even though these reforms laid the foundation for the tremendous growth of the economy in the following decades, but still the experts on Indian economy asked for 2nd generation reforms to compliment them for helping the Indian economy to achieve its true potential.

This article basically delves into the significance/need for 2nd generation economic reforms, what could be the challenges to them, what have been the government's initiatives & what could be the way forward – particularly

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given the opportunity provided by the tariffs imposed by the Trump administration (Trump Tariffs) – which can be regarded as India's 2nd 1991 moment.

What are the Economic reforms 2.0?

Economic Reforms 2.0 refers to the next generation of structural & policy reforms aimed at transforming the Indian economy for sustained growth, global competitiveness, and inclusive development. While the 1991 reforms primarily focused on opening up the economy, reducing government control, and promoting private sector participation to overcome a severe economic crisis, "Economic Reforms 2.0" has a broader and more nuanced agenda.

Why do we need Economic reforms 2.0?

1. Reviving investment & economic growth: India economy has been growing at a moderate pace of 6% for the past few years – which is insufficient for India to overcome the Middle Income Trap & become a developed economy by 2047. Economic reforms 2.0 are required to achieve and maintain a high growth trajectory needed to to become the 3rd & potentially the 2nd largest economy in the world and to become a major global economic power.

2. Addressing Structural Bottlenecks: Economic reforms 2.0 will help in overcoming the persistent challenges in land acquisition, outdated labor laws, regulatory bottlenecks (Red Tapism), inefficiency in public institutions etc that hinder investment and growth in India. The 2nd generation reforms will help in reviving the private sector confidence by improving the ease of doing business, providing opportunity for investment & enhancing the infrastructure.

3. Enhancing Competitiveness: India's Foreign Trade Policy 2023 aims to achieve the target of $1 trillion merchandise export target by 2040. To achieve this target, India needs reforms that promote innovation, entrepreneurship & integration with global value chains. Economic reforms 2.0 are required to make Indian businesses more competitive globally and boost exports.

4. Creating Quality Jobs: Jobless growth has been the biggest criticism of the 1991 reforms. Thus, the 2nd generation reforms are required to generate sufficient high-quality employment opportunities for India's large and growing workforce (quantitative & qualitative job opportunities). India has the largest workforce in the world & it is currently enjoying the advantage of demographic dividend which is expected to last a couple of decades more – Economic reforms 2.0 are expected to take advantage of this opportunity & prevent this demographic dividend from becoming a demographic catastrophie.

5. Inclusive Growth: One of the biggest challenges of Economic reforms 1.0 was the skewed growth pattern that they had induced. 2nd generation reforms will ensure that the benefits of economic growth reach all sections of society and reduce the inequality in the country by improving the access to quality healthcare & education as well as expanding the scope of social security benefits in the country.

6. Adapting to Global Changes & Challenges: The global economic order has been rapidly changing since the last decade particularly in the wake of COVID19, Russia-Ukraine war & now the protectionist trade policies like the Trump Tariffs. Also, the Western world is betting on India to stand up to the Chinese rising hegemony. Thus, to respond to the evolving global economic trends, technological advancements (e.g. AI), and geopolitical shifts – India needs to step up by introducing the economic reforms 2.0.

What are the challenges to such reforms?

1. Complacency: India has not adopted the 2nd generation reforms for such a long time because of the '***deep comfort***' among the policymakers with the mediocre level of economic growth. China, after the financial crisis

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of 2008, decided to move up in the global value chain & leave the lower value manufacturing space to other players – which was quickly occupied by countries like Vietnam, Indonesia, Mexico, Bangladesh – while India remained complacent because of its 'deep comfort'.

2. Political Consensus: Achieving broad political consensus on reforms, especially those that are politically sensitive, can be challenging. *For e.g. resistance shown by the political parties & pressure groups to the farm laws introduced in 2020-21.*

3. Resistance from Vested Interests: Incumbent players and beneficiaries of the existing system may resist changes. *For e.g. major industrialists in India are not in favour of the reforms because these reforms would provide competition to them & dent their existing easy profits.*

4. Implementation Capacity: Effective implementation of reforms at the ground level across a diverse country like India is a significant challenge.

5. Balancing Growth with Social Equity: Ensuring that reforms lead to inclusive growth and do not exacerbate inequalities is crucial. *For e.g. Industrial Revolution 4.0 is expected to generate higher skills jobs but it could also trigger unemployment in semi-skilled & unskilled labour sectors.*

6. Centre-State Relations: The federal structure of India creates coordination challenges between the central and state governments, particularly in areas like taxation (e.g., GST), agriculture, and infrastructure development. Lack of incentive sharing or trust between Centre & States can delay or dilute the reforms.

7. Global Economic Headwinds: External factors like global slowdowns, protectionist measures, trade wars, conflicts like Russia-Ukraine war or climate change related tariff measures like EU's Carbon Border Adjustment Mechanism (CBAM) can impact the effectiveness of domestic reforms.

What have been the government's initiatives in this regard?

1. Labor Reforms: The government has introduced several labour sector sector reforms like consolidating and simplifying complex labor laws into 4 labour codes – Code on wages, Code on social security, Code on industrial relations & Code on occupational safety. Skill development of workforce by establishing a separate Ministry of Skill Development, introducing Skill India Mission etc.

2. Land Reforms: Digitalization of Land Records by introducing Digital India Land Records Modernization Programme (DILRMP) that aims to modernize land records, improve transparency, and reduce disputes. Enacting Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 to speedup the process of land acquisition in a fair & transparent manner.

3. Financial Sector Reforms: The government has introduced several reforms to strengthen the public sector banks, develop the bond markets, and improve the regulatory frameworks such as Project Shashakt, National Asset Reconstruction Companies, Mission Indradhanush etc.

4. Agricultural Reforms: The government has made attempts to liberalize the agricultural markets by introducing the farm laws in 2020, promoting private investment in the sector by promoting contract farming, introducing reforms in agriculture markets such as e-NAM etc.

5. Manufacturing sector reforms: Introducing "Make in India" initiative which is a broad program aimed at boosting domestic manufacturing, attracting foreign investment, improving infrastructure, and simplifying business processes. Production Linked Incentive (PLI) Scheme that aims to boost manufacturing, attract investments, and create jobs in strategic sectors.

6. Digital India Initiative: Promoting digital payments (UPI), e-governance, and digital infrastructure.

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7. Infrastructure development: Large-scale investment in infrastructure projects such as Bharatmala, Sagarmala, introduction of National Infrastructure Pipeline, Dedicated Freight Corridor etc.

8. Logistic efficiency: Providing efficient logistics by introducing National Logistic Policy that aims to provide an integrated logistics ecosystem to reduce costs & improve export competitiveness. PM Gati Shakti which is a strategic initiative to enhance logistics efficiency through multimodal connectivity infrastructure, promoting economic growth and sustainable development

9. Taxation reforms: Introduction of Goods and Services Tax (GST)**,** reduction in corporate tax rate, digitalisation of tax system etc.

10. Ease of Doing Business: Improving Ease of Doing Business by introducing Insolvency and Bankruptcy Code (IBC) that aims to strengthen the framework for resolving insolvency. Strengthening the legal framework for commercial dispute resolution to improve contract enforcement by establishing Commercial Courts & Arbitration Centres.

What could be the way forward?

1. Building Political Consensus: Engage in extensive consultations with all political parties, industry associations, labor unions, farmer groups, and civil society organizations to build a wider understanding and consensus on the need and direction of reforms.

2. Phased Implementation: Implement reforms in a phased manner, carefully assessing the impact and making necessary adjustments along the way. Avoid "big bang" approaches that can lead to significant disruptions.

3. Enhancing Ease of Doing Business: Reduce the regulatory burden by simplifying the regulations at all levels of government, focusing on reducing compliance costs and improving transparency. Leverage technology for online portals and single-window clearances. Improve the efficiency and speed of the judicial system for commercial dispute resolution. Promote alternative dispute resolution mechanisms.

4. Boosting Manufacturing and Exports Competitiveness: Negotiate Favorable Trade Agreements to enhance market access for Indian goods and services. Invest in export-oriented infrastructure, including ports, airports, and special economic zones. Further strengthen the PLI scheme by focusing on value addition & technological upgradation.

5. Strengthening the Financial Sector: Introduce Banking Sector Reforms that improve the governance, efficiency and financial health of Public Sector Banks. Deepen and broaden Indian capital markets to provide diverse sources of funding for businesses. Promote the development of the corporate bond market in India.

6. Investing in Human Capital and Social Infrastructure: Fully implement the National Education Policy (NEP) and strengthen vocational training programs to create a skilled workforce that meets the demands of a modern economy. Increase investment in healthcare infrastructure and improve access to quality healthcare services to enhance productivity and well-being. Strengthen social safety net programs to protect the vulnerable populations during periods of economic transition and ensure inclusive growth.

Conclusion:
The next generation economic reforms are required for India to achieve not only a sustainable & inclusive economic growth but also to become the next economic superpower. The Trump Tariffs provide the right opportunity for India to introduce these reforms that have been long delayed and to achieve the economic progress & social welfare that it long desires.

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Role of Governor

Recently, the SC passed a judgment regarding the reservation of Bills by the Governor – laying down a specific timeframe within which the Governor & the President have to act. The issue becomes important particularly in the wake of the ongoing tussle between the Governor of the State of TN & the State Government.

What is the role & powers of Governor in Indian polity?

1. Constitutional & Ceremonial Role = The Governor is the constitutional head of the State executives. The executive power of the State is vested in the Governor (Article 154), and all executive actions of the State government are formally taken in their name (Article 166). The Governor acts as a bridge between the Centre and the State. He/she enjoys various executive, legislative, financial and discretionary powers.

2. Constitutional Provisions:

- **Article 153:** Provides for a Governor for one or more than one states.
- **Article 154:** The executive powers of the state are vested in the Governor and can be exercised directly or through subordinate officers in accordance with the Constitution.
- **Article 155:** Provides for the appointment of the Governor by the President by warrant under his hand and seal.
- **Article 156:** Provides the term of office of Governor- Appointed for a period of five years and holds office during the pleasure of the President. Pleasure of the President means that he can be removed anytime by the President, even before the expiry of five years.
- **Article 157:** Qualifications- He should be a citizen of India and must have completed the age of thirty-five years

3. Discretionary Powers = Governor has two types of discretion in the execution of his work:

- **Constitutional discretion** which is discretion mentioned directly in the Constitution. This is exercised in matters such as reserving a bill for the consideration of the President, recommendation of the President's rule under Article 356.
- **Situational discretion** which means hidden discretion that is derived from the exigencies of political situations. For instance, the appointment of Chief Minister of a state when no party has a clear cut majority in the state legislative assembly or when the chief minister in office dies suddenly and there is no obvious successor, dissolution of the state legislative assembly if the council of ministers has lost its majority etc.

What are the issues associated with the Office of Governor?

1. Appointment of the Governor = There is a lack of specific provisions related to the appointment of a Governor in the Constitution. For instance, apart from the provision that he should be a citizen of India having completed the age of 35 years, there is no other provision regarding his appointment. This is taken advantage of by the central government to appoint loyalists and retired politicians. *For example, former Delhi CM Sheila Dikshit was immediately made the Governor of Kerala after her defeat in the legislative assembly elections of 2014 as a reward for her contribution to her political party.*

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2. Acting as an agent of Centre = There is an abuse of the position of Governor usually at the behest of the ruling party at the Centre. The post has been reduced to being a retirement package for politicians faithful to the centre. As a result, the Governor sends motivated, distorted and partial reports to the Central government with the intention to hamper the functioning of the State government and ultimately get rid of them. *For example, the Governor of Rajasthan appealed to people to re-elect the incumbent Prime Minister in the General Elections of 2019, which is against the spirit of non-partisanship that is expected from the person sitting on constitutional posts.* Many Governors appointed have had strong political affiliations to the ruling party at the Centre, raising concerns about their neutrality, especially when dealing with State governments led by opposition parties.

3. "Retirement Package" = The post has sometimes been viewed as a reward or a retirement package for loyal politicians or bureaucrats, rather than being based solely on merit and suitability for the constitutional role.

4. Misuse of Article 356 = In a number of situations of political instability in the State, the Governors recommend President's rule under Article 356 without exhausting all possible options. This power is exercised to dismiss the State government controlled by a political party opposed to the ruling party at the centre. The **Sarkaria Commission** (1998) notes that since Independence, Article 356 has been misused a 100 times.

5. Misuse of discretionary powers:

- **Formation of Government in Hung Assemblies**: The Governor's discretion in inviting the leader of a party or coalition to form the government after an inconclusive election has been a source of controversy. Allegations of bias have arisen when Governors have seemingly favored a particular party, even if it didn't have the clearest majority initially.

- **Withholding Assent to Bills:** Governors have been accused of deliberately delaying or withholding assent to Bills passed by the State legislatures, sometimes without valid constitutional reasons, thereby obstructing the legislative process and creating friction with the elected State government.

- **Interference in State administration:** In some instances, Governors have been accused of overstepping their constitutional boundaries by interfering in the day-to-day administration of the State, such as involving themselves in transfers of officials or university affairs without the advice of the Council of Ministers.

- **Reservation of Bills** = The ongoing impasse between the Governors & opposition ruled State governments primarily hinges on the interpretation of the first proviso to Art 200 that stipulates that if the Governor decides to withhold assent, the Bill must be returned to the Assembly "as soon as possible", accompanied by a request to reconsider the proposed legislation or suggest amendments. While it mandates prompt action, it stops short of prescribing a definitive timeline. This '*constitutional silence*' has often been exploited by the Governors to indefinitely delay action on a Bill without formally returning it – a tactic colloquially known as the '**Pocket Veto**'. Similarly, in the case of NCT of Delhi, the provisions of Article 239AA (4), mandates that in case of a difference of opinion between the L-G and the Council of Ministers, the former has to refer the issue to the President. In the meantime, while that decision is pending before the President, the L-G, if the matter is urgent, can use his discretion to take immediate action. The Lt. Governor of Delhi misused this provision to take administrative decisions and deprive the State assemblies of their legislative rights.

6. Arbitrarily removal of Governor = The Governors do not enjoy security of tenure. The Governors of various states are arbitrarily removed whenever there is a change of government at the centre because unlike the President there is no provision for the impeachment of the Governor. For instance, in 1989, the V.P Singh government asked all the Governors appointed by the previous government to resign.

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What are various SC's Judgments?

1. State of TN v/s Governor of TN case (2025):

- SC declared TN Governor's prolonged refusal to give assent to 10 Bills as illegal & erroneous in law. Invoking its powers under Article 142 of the constitution, the court deemed the 10 pending bills to have received the assent.
- SC has imposed a timeline on the Governor to prevent any obstruction to the State's legislative process.
  - If the governor, acting on the Cabinet's advice, opts to withhold assent or reserve a bill for president's consideration – then such action shall be taken in less than **1 month** period of time.
  - If the governor withholds the assent contrary to the advice of the minister, the bill must be returned within **3 months**, accompanied by the message detailing the rationale for the decision.
  - If the governor reserves the bill for the President against the Cabinet's recommendation, this must be done within **3 months**.
  - If the bill is re-passed by the State legislature after reconsideration, the Governor is required to grant assent within **1 month**.
- SC has also set a 3 months deadline for the President to decide on the Bills referred to her by the Governor.
- SC has also recommended that the President shall seek the advice of the SC on such a Bill, in line with the procedure outlined in Article 143 of the constitution, as a measure of prudence.
- Further limiting the discretionary powers of the Governor, the court ruled that a Bill cannot be reserved for the President's consideration once it has been returned to the State legislature, reconsidered & resubmitted for assent.
- The reservation of Bill cannot be based on "personal dissatisfaction" or "political expediency" & is only permissible in instances where there is a grave threat to democratic principles.
- SC emphasised that any exercise of **gubernatorial discretion** (i.e. governor's discretion) can be judicially reviewed to prevent any disregard for the will of the people, as expressed through their elected representatives.
- The court identified only 3 circumstances in which the governor could act without the aid & advice of the ministers – 1) When a Bill undermines the powers of the HC, 2) When a Bill requires presidential assent is explicitly mandated for e.g. under Art 31C where a law was sought to be protected from judicial review, and 3) When a Bill fundamentally undermines the constitutional values.
- Reservation of bills in 2nd instance: The governor cannot reserve the bill passed by the State legislature after its re-passage by the Legislature for the President's consideration – except – when the Bill is different from the 1st instance.

2. Samsher Singh vs State of Punjab (1974) = The exercise of discretion by the Governor should be in concurrence and harmony with the Council of Ministers. He should not take decisions against the wishes of the Council of Ministers.

3. SR Bommai v/s Union of India (1994) = It is one of the historic cases that dealt with the issue of arbitrary dismissal of State governments under Article 356. The Karnataka Governor in 1989, refused to allow the democratically elected Chief Minister to prove his majority on the floor of the Assembly and this led to the imposition of President's rule under Article 356. The verdict ruled that the floor of the Assembly is the only forum that should test the majority of the government of the day, and not the subjective opinion of the

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Governor. It also stated that the Governor's report regarding the proclamation of President's Rule in a State in the wake of breakdown of Constitutional machinery is subject to judicial review.

4. Rameshwar Prasad case (2006) = Article 361 grants personal immunity to the governors, but does not insulate them from legal immunity. Also, the discretion of the Governor can be judicially reviewed by the Supreme Court.

5. BP Singhal case (2010) = The Supreme Court ruled that even though the President could dismiss a Governor without having to provide reasons for doing so, this power could not be exercised in an "arbitrary, capricious or unreasonable manner". A change in central government cannot be a ground for removal of Governors, or to appoint more favourable persons to this post.

6. Nabam Rebia case (2016) = The Supreme Court ruled that Article 163 does not give Governors a general discretionary power and he is bound by the aid and advice of the elected Council of Ministers. He cannot take steps relating to disqualification of the Speaker. He is barred from unilaterally sending messages to the Assembly on any matter. The Governor has no power to summon an Assembly session unless the Government has lost its majority.

7. NCT Delhi v/s Union of India case (2018) = Supreme Court declared that the Lt. Governor has to work on the aid and advice of the Council of Ministers and the power to refer any matter to the President does not mean every matter.

What are the recommendations by various Committees & Commissions?

1. First Administrative Reforms Commission (1966):

- **Appointment**: Governor should have long experience in public life and administration and be politically neutral. Retired Judges should not be appointed as Governors and the Chief Minister may be consulted before his appointment.
- **Discretion:** Guidelines must be formulated regarding the exercise of discretionary powers by the Governors duly approved by the Inter-State Council and the Central government. The Governor should act on his own judgement and discretion in matters relating to submission as well as on reservation of bills for the consideration of the President.

2. Rajamannar Committee:

- **Governor not as an agent of the Centre:** The Rajmannar Committee emphasized that the Governor should act as the constitutional head of the state and not as an agent of the central government. This highlights the need for the Governor to maintain the autonomy of the state within the federal structure.
- **Deletion of Articles 356 and 357:** The committee recommended the deletion of Articles 356 and 357, which deal with the imposition of President's Rule in a state. This recommendation was aimed at preventing the misuse of these articles by the central government to undermine state autonomy.

3. Sarkaria Commission:

- **Appointment**: Governor should be an eminent person, not belonging to the same state. A person belonging to a minority group should be given preference. It recommended that a politician from the ruling party at the Union level should not be appointed as a Governor of a state run by some other political party. It recommended the amendment of Article 155 prescribing the procedure of consultation with the State Chief Minister in the selection of a person as Governor.

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- **Removal**: Governors must not be removed before completion of their five year tenure, except in rare and compelling circumstances. It provided for an order of preference to be followed by the Governor to deal specifically with the situation where no single party obtained a majority.

4. National Commission to review the working of the Constitution (2002) (Venkatachaliah Commission):

- **Appointment**: It reiterated Sarkaria Commission recommendations regarding the qualifications of a person to be appointed as the Governor.
- **Removal**: If the Governor is to be removed before completion of term, the central government should do so only after consultation with the Chief Minister.
- It recommended setting up a time limit of six months for the Governor to give his assent to a bill or reserve it for the consideration of the President.
- The Governor should not be allowed to dismiss the State government as long as it enjoys the support and confidence of the Legislative assembly.

5. 2nd ARC:

- **Appointment of non-partisan persons:** The 2nd ARC recommended that individuals appointed as Governors should be non-partisan and have extensive experience in public life and administration. This recommendation seeks to ensure that the Governor's actions are guided by the principles of impartiality and public service rather than political considerations.
- **Guidelines for discretionary powers:** The 2nd ARC suggested that the Inter-State Council should establish clear guidelines for Governors to follow when exercising their discretionary powers. This is intended to bring more clarity and structure to the Governor's role in situations where they are not bound by the advice of the Council of Ministers, reducing the potential for arbitrary or politically motivated decisions.

6. Punchii Commission:

- **Appointment**: As a qualification for the Governor, it suggests that the person should not have participated in active politics at even local level for a couple of years before his appointment.
- **Removal:** Governor should be removed only by the resolution of the State legislature. It recommended the deletion of the doctrine of pleasure of the President from the Constitution. It also opined that there should be provisions for the impeachment of the Governor by the State legislature along the same lines as that of the President.
- It also suggests that the Governors should have the right to sanction the prosecution of a Minister against the advice of the Council of Ministers.

What is the way forward?

1. Governors must act judiciously, impartially and efficiently to reflect the spirit of non-partisanship.

2. A report by the Committee of Governors titled, '**Rajyapal —Vikas Ke Rajdoot: Catalytic Role of Governors as Agents for Change in Society**', can be taken into consideration for improving the functioning of the office of Governor. It talks about the role of Governors in the development process and highlights the need for an action oriented framework to improve the functioning of the Office of the Governor. The report emphasises identifying priority areas along with activities that can help realise the objectives of Sarv Shresth Bharat

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(paramount India). It also suggests that Governors can play a mentoring role in overall implementation of developmental schemes in their States.

3. Sardar Hukum Singh in the Constitutional Assembly Debates on 30 May 1949, had argued in favour of providing a panel of names, elected by the State Legislature, for the President to choose from. In his speech on the constitutional role of Governors, Dr. B.R. Ambedkar described how a Governor should use his discretion not as "representative of a party" but as "the representative of the people as a whole of the State".

4. Implementation of reforms suggested by various committees & commission as well as SC judgments, such as:

- **Consultation with the Chief Minister:** Making it mandatory to consult the Chief Minister before appointing a Governor.
- **Fixed Tenure:** Providing a fixed tenure for Governors to ensure their independence.
- **Grounds for Removal:** Clearly defining the grounds and procedures for the removal of Governors.
- **Limiting Discretionary Powers:** Clearly defining and limiting the discretionary powers of the Governor through constitutional amendments or a code of conduct.
- **Non-Partisan Appointments:** Appointing individuals with eminence in public life who are not actively involved in politics.
- **Impeachment Process:** Considering a process for the impeachment of Governors by the State legislature.

Conclusion:

The SC ruling in TN case not only provides the opposition-ruled state government a clear constitutional remedy against the inordinate delays by the Governors in granting assent to the Bills passed by the Legislature but also upholds the principles of federalism. By recognising automatic assent in cases where the Governor fails to adhere to the prescribed timelines, the court has instituted a crucial safeguard against the abuse of the office. However, it is time that the Office of Governor also realise that they must rise above partisan politics while discharging constitutional obligation & act as a 'friend, guide & philosopher' to the State & not as a hindrance.

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RTI Amendment via DPDP Act, 2023- Explained Pointwise

The **Right to Information (RTI) Act, 2005**, hailed as a revolutionary step towards transparency and accountability in governance, is now facing a significant dilution through **Section 44(3) of the Digital Personal Data Protection (DPDP) Act, 2023**. This amendment **alters Section 8(1)(j)** of the RTI Act, effectively **removing the public interest override** and restricting access to all "personal information".

As the minister **warns**, this will have a "**devastating effect** on the transparency law". Over **30 civil society groups**, backed by **130 opposition MPs**, have raised alarm. This issue underlines the delicate balance between the right **to privacy** (as upheld in **K.S. Puttaswamy v. Union of India, 2017**) and **right to information**—both derived from **Article 21 of the Constitution**.

What is Right to Information Act (RTI), 2005?

Objective: The RTI Act was enacted to enhance transparency and accountability in government operations by empowering citizens to access information held by public authorities.

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Coverage: The Act extends to all public authorities, including central and state government bodies, ministries, and institutions significantly financed by the government.

Access to Information: Under this law, citizens can seek information in the form of records, documents, reports, and data from public authorities, thereby promoting openness in governance.

Exemptions: Certain categories of information are exempt from disclosure—particularly those that could jeopardize national security, violate confidentiality, or interfere with active investigations.

Response Timeline: Authorities must furnish the requested information within 30 days. In specific situations, this timeline may be extended up to 45 days.

Penal Provisions: Officials who unjustifiably deny information or provide misleading details may face penalties as per the provisions of the Act.

What is the significance of RTI Act, 2005 across Sectors?

1. Strengthening Governance and Accountability: As per **Central Information Commission reports** over **3 crore RTI applications** have been filed since 2005. Exposed several scams: **Adarsh Housing Scam**, **Vyapam**, and **Ration distribution irregularities** through **social audits**. Ensures accountability of **public servants** through access to information like **educational qualifications, salary records**, and **property declarations**. **Case Study:** Social audits under RTI helped expose ration distribution fraud in various states like Rajasthan and Andhra Pradesh.

2. Strengthening Democratic Participation: RTI promotes **citizen-led oversight** and informed public discourse. Ensures **parity of information access** between citizens and legislators. **E.g. Over 13 lakh RTIs filed annually (CIC 2022-23).**

3. Social Justice and Welfare Delivery: RTI has been used extensively to obtain information related to **welfare schemes (MGNREGA, PDS, pensions, etc.)**, empowering marginalized communities. **Case Study:** In Madhya Pradesh, activists used RTI to expose ghost beneficiaries in the Public Distribution System (PDS).

4. Judiciary and Executive Oversight: RTI flows from **Article 19(1)(a) (Freedom of Speech and Expression). In Central Public Information Officer, Supreme Court of India v. Subhash Chandra Agarwal (2019)** – held that the office of the CJI falls under RTI.

5. Environmental and Public Health: RTIs have exposed issues in **environmental clearances**, **pollution data**, and **COVID-19 relief fund utilization**.

What are the issues with Recent Amendment (Section 44(3) of DPDP Act, 2023)?

1. Deletion of Public Interest Clause: Section 8(1)(j) originally allowed disclosure of personal information if **"larger public interest justifies it."** The DPDP Act **removes this proviso**, creating a **blanket ban** on disclosure of all personal information.

2. Against the Spirit of Puttaswamy Judgment: The **K.S. Puttaswamy v. Union of India (2017)** judgment upheld the **Right to Privacy** as a fundamental right. However, it also stated that **"privacy and transparency are not mutually exclusive but complementary."** owhere did the judgment recommend amending the RTI Act.

3. Weakening Institutional Transparency: The amendment violates the RTI Act's principle that **no information denied to Parliament shall be denied to a citizen**. **Deletion of this proviso affects all of Section 8(1)** and weakens the spirit of **democratic oversight**.

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4. Misuse of "Personal Information" Definition: The DPDP Act vaguely defines "personal information", enabling authorities to **deny access to previously public records** under the **garb of privacy**. The **DPDP Act defines personal information vaguely**, potentially covering, educational qualifications, Disciplinary actions, Property records and Minutes of public meetings. E.g. **Fake caste certificate** cases or qualification disputes (e.g., Maharashtra bureaucrat case) may go unverified.

5. Procedural and Legislative Bypass: Amendment was passed through a **side clause (Section 44(3))** without **detailed parliamentary scrutiny**.

6. Judicial Responses: Supreme Court in *Anjali Bhardwaj vs Union of India (2019)*, delays in appointments to Commissions defeat the purpose of RTI. Despite petitions, no rollback of the 2019 amendments yet.

7. Civil Society Pushback: NCPRI, Article 21 Trust, PUCL, SFLC India have vocally opposed the amendment. Activists like **Anjali Bhardwaj and Nikhil Dey** have warned that this will **cripple social audits** and verification of public service delivery.

What are the current challenges to the RTI Framework and its impact across different sectors?

Challenge	Details
Backlog & Vacancies	Over **3 lakh appeals pending (Satark Nagrik Sangathan, 2023).**
Dilution of Autonomy	RTI (Amendment) Act 2019 gave the Centre power to decide **tenure and salaries** of CIC/SICs.
Opaque Governance	Officers' transfers, disciplinary records, assets can now be withheld
Threat to Activists	Over **100 RTI activists killed**; no functional **whistleblower protection (Report by Commonwealth Human Rights Initiative).**
Non-compliance	45% of public authorities failed **Section 4 disclosures** (Status of RTI Report 2022).
Low Awareness	Especially among **rural, SC/ST, and women (NSSO Report 2018).**
Misuse and Vagueness	Vague RTIs or misuse by vested interests increases administrative burden.

Impact Across Sectors

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Sector	Impact
Public Services	No way to verify distribution of rations, pensions, or benefits
Education & Employment	Degrees, appointments, promotions may remain unverified
Legislative Oversight	Citizens lose access to data accessible to MPs/MLAs
Anti-Corruption Efforts	Transparency in scams involving public servants weakened
Environmental Governance	Access to clearance reports, data on polluters may be curtailed

What should be the Way Forward?

1. Repeal or Revise the RTI-DPDP Amendment: Section 44(3) of the DPDP Act should be repealed. Retain the **"public interest" safeguard** in Section 8(1)(j). Restore **fixed tenure and pay parity** for CIC/SICs. Implement **recommendations of 2nd ARC** and **Law Commission**.

2. Define 'Personal Information' Clearly: Adopt standards based on **OECD Privacy Guidelines**, with **narrow definitions** and **public interest exceptions**.

3. Uphold Proportionality Doctrine: Follow **B.K. Pavitra v. Union of India (2020)** which applied proportionality in administrative actions.

4. Ensure Parliamentary Scrutiny: Future amendments to transparency laws must be passed **after detailed debates and standing committee reviews**.

5. Strengthen Information Commissions: Fill vacancies, increase budget allocation. Ensure **functional autonomy and security of tenure**. **E.g.** As per PRS India, the Central Information Commission received only ₹37 crore in Budget 2023-24 — insufficient for 2 lakh+ pending cases.

6. Strengthen the CIC: Empower CIC with enforcement powers, as recommended by the **2nd Administrative Reforms Commission (ARC)**.

7. Balance Privacy and Transparency: Formulate rules under **DPDP Act** ensuring **narrow and specific definition of "personal information."** Establish **public interest tests** through an independent authority.

8. Promote Proactive Disclosure: Strengthen **Section 4 of RTI Act** — suo motu disclosures by public authorities.

9. Reports and Recommendations

Report/Body	Key Recommendation

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2nd ARC Report	Strengthen proactive disclosure; protect whistleblowers
Law Commission (255th Report)	Ensure transparency in public appointments
CIC Annual Reports	Urged filling of vacancies and increased awareness

10. **Comparative Global Models**

Country	Key Feature
Sweden (1766)	First RTI law, based on "Principle of Public Access to Official Documents".
USA (FOIA, 1966)	Judicial remedy for delays; well-defined appellate mechanism
Mexico	Autonomous Information Commission; RTI law part of Constitution
South Africa	RTI guaranteed under Bill of Rights; includes private bodies if rights are implicated.

Conclusion

The RTI Act is **not just a legal instrument**, but a **democratic lifeline** that empowers citizens to hold the State accountable. As Mr. M.M. Ansari rightly notes, the current provisions were already **"very balanced"**, safeguarding privacy while ensuring transparency. The amendment through the DPDP Act **erodes this balance**, endangering public accountability. As India celebrates 20 years of RTI, the need is not to weaken but to **deepen transparency**, keeping intact the spirit of **participatory democracy**

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RARE EARTH MINERALS – Significance & Challenges – Explained pointwise

Recently, China has suspended exports of certain rare earth minerals & magnets that are crucial for the world's car, semiconductor & aerospace industries. The Chinese government ordered restrictions on the export of six heavy rare earth metals, which are refined entirely in China, as well as rare earth magnets, 90 percent of which are produced in China in retaliation to the increase in tariff on the Chinese imports by the USA's President Trump.

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What are Rare Earth Elements, their characteristics & sources?

- Rare earth elements (REEs) are a group of 17 chemically similar metallic elements in the periodic table. It comprises **15 lanthanides elements** (lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium and lutetium), plus **Scandium** and **Yttrium**.
- The rare earths are actually not 'rare' in nature; they occur abundantly but are often not concentrated enough to undertake viable extraction.
- **Characteristics**: REEs are characterized by high density, high melting point, high conductivity, and high thermal conductance. REEs are classified into Heavy REE and Light REE.
- **Sources**: REEs do not occur in a free state. They are found in mineral oxide ores. The principal sources of rare earth elements are **Bastnaesite**, **Xenotime** (commonly found in mineral sand deposits), **Loparite** (occurs in alkaline igneous rocks) and **Monazite**.

What is the utility of Rare Earth Elements?

1. Rare earths are used in small quantities but have **qualities that make them essential**. For example, **Neodymium** is a critical component for permanent magnets and has the ability to carry material 1,300 times its own weight. Neodymium-based permanent magnets are key components in **EV traction motors and wind turbines**. Like neodymium, **Dysprosium** is also an important component of permanent magnets that will be used in EVs and wind turbines.

2. Europium is necessary for **LED bulbs and colour television screens**. **Samarium** is used in **optical lasers**.

3. Several rare earths also have important uses in emerging hi-tech medical technologies. Further they make the refining of crude oil into gasoline more efficient and are used in many specialty metal alloys. Their sector-wise uses include:

- **Aerospace and Defence:** Used in precision-guided munitions in missiles, high-power sonar on ships and submarines, stealth helicopters, etc.
- **Healthcare**: used in medical imaging devices, such as MRIs, modern surgical machines.
- **Clean Energy**: Used in wind turbines, electric car batteries and energy-efficient lights (LEDs and CFLs).
- **Nuclear Energy**: useful for controlling nuclear reactions and is used in control rods.
- **Electronics**: Used as phosphors in cathode ray tubes, fluorescent lamps and X-ray intensifying screens.
- **Chemicals, Oil Refining, and manufacturing**: Make the refining of crude oil into gasoline more efficient and are used in many specialty metal alloys.

What is the current status with respect to the reserves of Rare Earth Elements?

<u>**National**</u>:

- India is almost 100% import dependent for most rare earths. However, India has great potential for domestic production as it possesses the 5th highest reserves of rare earths in the world.
- In India, significant rare earth minerals found are **ilmenite, sillimanite, garnet, zircon, monazite**, and **rutile**, collectively called **Beach Sand Minerals** (BSM).
- Monazite is the principal source. Monazite is mainly found in Odisha, Andhra Pradesh, Tamil Nadu, Kerala, West Bengal, and Jharkhand. According to the India Minerals Yearbook (2019), India had 12.47 million tonnes of Monazite Resources.
- They are classified as atomic minerals and are therefore not at par with other minerals. The reason that they are classified as atomic minerals is because some of these elements occur in the earth's surface along with thorium and uranium which are radioactive minerals.

<u>**International**</u>:

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- The total world reserves are estimated at 120 million tonnes of Rare Earth Oxides equivalent content (REO). Out of this, **China** alone accounts for 44 million tonnes followed by **Vietnam** and **Russia**.
- China holds the leading position among producers of rare earth oxides with 140 thousand tonnes. The other major producers are **Myanmar, Australia, USA, Russia** and **Malaysia**.
- Concentrated/partially-processed intermediate products are further processed at many locations in Europe, USA, Japan and China.

What is the strategic significance of Rare Earth Elements?

1. Multiple Uses: They are used in multiple hi-tech applications and processes like EVs, Medicinal appliances, LEDs etc. that domestic production of such elements becomes inevitable.

2. Rising Demand: The multifarious uses of rare earth elements in new age technologies shows that their demand is going to rise in future. For instance, the current demand of **Neodymium** in India is small, at around 900 tonnes per annum, because domestic manufacturing of EVs and wind turbines is still limited. However, as manufacturing of EVs and wind turbines picks up, the demand for neodymium is estimated to rise sharply by 6-7 times by 2025 (6,000 tonnes) and by 18-20 times by 2030 (20,000 tonnes).

3. Reducing Import Bill: India is almost 100% import dependent for most rare earths which creates a huge pressure on foreign exchange. Further, prices of rare elements are consistently rising due to the rising demand. For instance, the global price of neodymium has risen sharply from under US$ 100 per kg in 2018 to over US$ 200 per kg at present.

4. Highly Concentrated Supply Chain (CHINESE DOMINANCE): The global supply scenario for rare earths is highly concentrated, much more than oil and hydrocarbons, which poses a strategic challenge. Until 2023, China produced 99 percent of the world's supply of heavy rare earth metals, with a trickle of production coming out of a refinery in Vietnam. But that refinery has been closed for the past year because of a tax dispute, leaving China with a monopoly. China also produces 90 percent of the world's nearly 200,000 tons a year of rare earth magnets, which are far more powerful than conventional iron magnets. Japan produces most of the rest and Germany produces a tiny quantity as well, but they depend on China for the raw materials. In 2010, following a dispute with Japan over Senkaku Islands in the East China Sea, **China shut down exports of Rare Earth Elements to Japan**. Recently, China halted the export of critical minerals in retaliation for the Tariff War initiated by the USA's President Trump. Given India's border dispute, China might resort to similar tactics in future.

5. Huge potential: India has greater reserves than the US and Australia, only behind China, Vietnam, Russia, and Brazil. With Russia embroiled in conflict, the onus is on India to emerge as a supplier not just for domestic use but for international consumption.

What are the reasons behind the limited production of Rare Earth Elements in India?

1. Rare earth materials are not concentrated enough in many geographical locations with respect to **commercial viability**. It is expensive to commercially produce them.

2. At present they are classified as atomic minerals. The **mining for rare earths is reserved exclusively for government companies**. Currently, there are only two companies – **Indian Rare Earths Ltd** (IREL, owned by GoI) and **Kerala Minerals and Metals Ltd** (owned by Kerala government) that can mine them. Further, their production capacities and technological capabilities are limited which is why India is import dependent.

3. IREL's primary source of revenues is not rare earths. Most of its income comes from the production and marketing of other minerals contained in beach sands. Since its revenue does not depend upon rare earth elements, **IREL has little need to produce and research**. IREL has poor incentives to refocus itself as a globally competitive rare earth extraction and processing firm. This has restricted India to be a low-cost exporter of rare earth oxides instead of higher value-added products.

4. The present system (clubbing rare earth elements with atomic minerals) ends up **separating the rare earths ecosystem from other R&D ecosystems** like electronics or metallurgy. This severely impacts the

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overall umbrella of strategic research, undercutting the interdisciplinary nature of modern research work. R&D is dominated by DAE and the Bhabha Atomic Research Centre (BARC), with negligible participation by the Academia and private sector. The situation is similarly disintegrated with regards to exploration. The Geological Survey of India (GSI), Mineral Exploration Corporation Limited (MECL) and Atomic Minerals Directorate for Exploration and Research (AMD) operate in overlapping spheres while working in siloes.

5. Beach sand mining was permitted until a few years ago but was **banned in 2016** in an attempt to conserve strategic minerals including rare earths and thorium.

What steps can be taken to boost domestic production?

1. The Ministry of Mines has recently proposed moving the 17 rare earths elements outside the ambit of atomic minerals so that commercial mining by private entities and other PSUs can take place. Further, Private players can be mandated not to extract thorium and uranium from monazite rock or beach sands and restrict themselves to rare earths.

2. Based on availability and criticality of rare earths, the **Ministry of Mining has conducted an analysis for prioritizing efforts in both exploration and foreign acquisition**. India has an established relative abundance of Light Rare Earths: elements from Lanthanum to Samarium. The initial focus can be on extraction of these elements. Efforts are already on to discover Lithium deposits as well. A joint venture of 3 PSUs, named **Khanij India Bidesh Limited (KABIL)**, has been entering into long-term contracts for India's critical mineral needs.

3. The government can create a new **Department for Rare Earths (DRE)** under the Ministry of Mines. This DRE should oversee policy formulation and focus on attracting investment and promoting R&D. It could coordinate with other agencies to **partner directly with groupings such as the Quad**. This will help in building up a strategic reserve as a buffer against global supply crises.

4. The government should also create an autonomous regulator, the **Rare Earths Regulatory Authority of India (RRAI)**. It would resolve disputes between companies in this space and check compliance.

5. IREL can be de-merged into two different entities with appropriate amendments to the Atomic Energy Act. One entity can focus exclusively on Thorium extraction and can be retained under the Department of Atomic Energy. The other entity can specialise in other available rare earth processing and can be under the control of the proposed DRE.

6. A **consolidation in the exploration of rare earths is necessary**. The National Mineral Exploration Policy, 2016 had a proposal to set up the **National Centre for Mineral Targeting** (NCMT) to replace the present system of having committees within the Geological Programming Board of the Geological Survey of India. NCMT has not been created yet.

7. Private industry must be incentivised and enabled to set up processing capabilities beyond the extraction phase. Such a move will be crucial for higher value added products having robust domestic supply chains. Private industry linkage is necessary to promote R&D Ecosystem as well.

8. The Government should have **Rare Earth Strategic Reserves**, similar to the Strategic Petroleum Reserves. Having Rare Earth Strategic Reserves can help provide a **consistent demand environment**, as well as a **fallback at times of any unfavourable action** by the Chinese Government.

Conclusion

The time is right to focus on boosting the indigenous supply of rare earth metals that currently contribute a total value of nearly US$ 200 billion to the Indian economy. A sustained supply is also essential to reduce its dependence on Chinese imports and truly realize the vision of *Atmanirbhar Bharat*.

Read More – The Indian Express
UPSC Syllabus GS 1 – Distribution of Key Natural Resources across the world

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Model Bilateral Investment Treaty (BIT)- Explained Pointwise

The **Union Budget 2025** announced a **revision** of India's **Model Bilateral Investment Treaty (BIT)** to make it more **"investor-friendly"**, marking a decade since the last model was adopted in 2015. This revision offers India an opportunity to align its investment treaty policy with **"current global economic realities"**, as well as address emerging concerns around **investor protection**, **sovereign regulatory space**, and **dispute resolution**.

What is Bilateral Investment Treaty (BIT) and its evolution in India?

BIT is often referred to as **International Investment Agreements (IIAs)**, are legal tools that **protect foreign investments** by assuring investors certain guarantees against adverse actions by the host state. As of 2023, over **3,291 IIAs** (including **2,831 BITs**) have been signed globally **(UNCTAD).**

India's BIT Landscape:

- India has signed **86 BITs**, of which **only 13 are currently in force** (MEA, 2024).
- The **2015 Model BIT**, adopted after adverse international arbitral awards (e.g., **Vodafone, Cairn Energy cases**), sought to balance investor rights with **sovereign regulatory autonomy**. However, India has struggled to negotiate new BITs based on this model. According to legal experts, **no major capital-exporting country** has accepted it fully.

Evolution of India's Model Bilateral Investment Treaty (BIT)

Phase & Period	Key Characteristics & Motivation	Notable Developments
Phase I: 1994–2011(Liberal, Investor-Centric Phase)	– Broad protections: Fair and Equitable Treatment (FET), Most Favored Nation (MFN), unrestricted ISDS. – Asset-based definition of investment. – Aimed to attract foreign capital in post-liberalization era	– First BIT signed with UK (1994). – 66+ BITs signed by 2011
Phase II: 2011–2015 (Crisis and Reassessment Phase)	– Reassessment of treaty commitments due to rising ISDS claims. – Motivation: Protect regulatory autonomy and limit legal liability	– **White Industries v. India (2011)** – BIT-based claims by Vodafone and Cairn

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Phase III: 2015–Present (Sovereignty-Oriented Model)	– Narrow FET clause aligned with customary international law. – No MFN clause. – ISDS allowed only after **5 years of exhausting local remedies.** – Enterprise-based investment definition. – Curtail litigation risk and preserve policy space	– **2015 Model BIT introduced** – India unilaterally terminated 58 BITs. – New BITs with Brazil, Belarus based on 2015 model.
Phase IV: 2021–2025 **(Expected)** (Reform and Balancing Phase)	– Revision underway to balance investor protection with sovereign rights. – Likely changes: Flexible ISDS, enhanced investor obligations, alignment with global best practices. – Improve investment climate, support "Ease of Doing Business"	– MEA-led review of 2015 Model BIT initiated in 2021. – Revised Model BIT expected by **2025**

Key Features of the 2015 Model BIT

Aspect	2015 Model BIT
Fair and Equitable Treatment (FET)	Narrowly defined, aligned with customary international law
MFN Clause	Excluded to prevent importing favorable terms from **third-party BITs**
ISDS Mechanism	Permitted only after exhausting **local remedies for 5 years**
Scope of "Investment"	Based on **characteristics (enterprise-based),** not just assets

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Investor Obligations	Included obligations for compliance with **laws, environment, labor**
Exclusion of Taxation	Tax matters kept out of **ISDS jurisdiction**
Transparency & Public Interest	Emphasized **state's regulatory rights, including for health, environment**, and public order.

What is the significance of BIT Revision?

1. Foreign Investment Promotion & Economic Growth: FDI into India grew from **$16 billion in 2000** to **$537 billion in 2023**; similarly, **Outward Direct Investment (ODI)** rose from **$1.7 billion to $236 billion** (UNCTAD World Investment Report, 2023). A robust BIT framework encourages cross-border capital flows, enabling India to attract and protect both **inbound and outbound investments**. India's ambitious goals under **Amrit Kaal** (Vision 2047) require legal infrastructure that bolsters investor confidence.

2. Balancing Investor Rights with Sovereign Regulatory Space: Post-2008 financial crisis and climate crises, host states globally are recalibrating investment treaties to allow for policy flexibility on issues like **public health, environment, and taxation**. The revised BIT offers an opportunity to **"balance investment protection with the right to regulate"**, as emphasized by the article.

3. Boost to Infrastructure and Employment: The India-EFTA FTA (March 2024) introduced a **quantifiable commitment** by EFTA states to invest **$100 billion** in India, generating **1 million direct jobs**. Its investment chapter innovatively replaced ISDS with **G2G consultation mechanisms**. Model BIT revision can institutionalize such novel frameworks.

4. Reducing Treaty-Based Arbitrations: India has faced over **25 ISDS claims**, costing billions in arbitration and compensation (e.g., **Cairn award of $1.2 billion**). Clearer, balanced BITs can reduce litigation and foster predictability.

5. Geopolitical Strategy: As India positions itself as a **major player in global value chains (GVCs)** and "Amrit Kaal", it needs modern treaties to: attract **high-tech foreign capital**, enable **ease of doing business** and provide **certainty to international investors**.

6. Legal and Institutional Significance: BITs are **legally enforceable instruments** of international law. They strengthen the **rule of law** in investment governance. Balanced BITs preserve the **"right to regulate"** while ensuring investment protection.

What are the challenges in its implementation?

1. Legal Ambiguity & Investor Skepticism: The **ELR clause** and restricted definitions dissuade foreign investors. India's failure to secure acceptance of its 2015 BIT model reflects its **limited global legitimacy**.

2. One-Size-Fits-All vs Dual Model Dilemma: Scholars like Rajesh Singh & Karamjeet Kaur propose **"dual BIT models"** – one defensive, one investor-friendly. However, this "horses for courses" strategy may undermine India's **credibility and consistency** in international law, as investment flows are dynamic (e.g., India was a capital importer to UK in 1994 but a capital exporter by 2022).

3. Most Favored Nation (MFN) Clause Complexity: 2015 model excludes MFN, due to its misuse in **treaty shopping**. Yet, MFN is a fundamental principle of **non-discrimination** in international law, with origins dating to **17th century bilateral commercial treaties**. The clause can **support transparency** and harmonize benefits across BITs.

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4. ISDS Inconsistencies: Divergent ISDS access (defensive vs liberal models) weakens India's stance in multilateral forums like **UNCITRAL**, and invites **counter-arguments in negotiations**. **Mandatory Exhaustion of Local Remedies (ELR)** for 5 years before initiating ISDS – seen as a barrier.

5. Fragmentation of India's Treaty Network: Unilateral terminations post-2015, without replacement treaties, have left gaps in legal coverage for Indian investors abroad.

What should be the way forward?

1. Principled and Predictable BIT Framework: Integrate investor protections (fair and equitable treatment, ISDS access) with **explicit regulatory carve-outs** for: Public health, environmental protection (SDG-13), taxation. **E.g. Reference, EU Model BIT**, **CETA**, **RCEP** models.

2. Introduce Tailored MFN Clauses: Consider **forward-looking MFN clauses** with consultation requirements. Include safeguards against **treaty-shopping**, e.g., by **excluding ISDS procedures** from MFN coverage.

3. Innovate on Dispute Resolution: Emulate EFTA FTA's **G2G consultation model** or **multilateral investment court** models under discussion at UNCITRAL.

4. Avoid Dual BIT Model Pitfalls: Maintain a **single, nuanced model BIT** that can be flexibly adapted through **negotiation protocols**, rather than creating inconsistent models. Support this with **investment chapters in FTAs** (as seen in EFTA).

5. Build Legal & Institutional Capacity: Strengthen India's **treaty negotiation teams** through specialized training. Create a **central database of Indian investor concerns** abroad to better inform treaty content. **E.g. Actively participate** in **UNCITRAL Working Group III (ISDS Reform)** and **OECD investment dialogues**.

6. Public & Parliamentary Transparency: Table BITs for discussion and ratification like **trade agreements** to foster democratic accountability.

Conclusion

As India aspires to become a global investment hub during its **Amrit Kaal**, the revision of its **Model BIT** is both timely and strategic. It must **strike the right balance** between offering adequate protection to foreign investors and preserving the **regulatory autonomy** of the Indian state.

The revised BIT must reflect India's **dual role** as both a **capital importer and exporter**, without compromising on its **principled and consistent approach** to international economic law.

> **Read more-** The Indian Express
> **UPSC Syllabus- GS 3**– Investment Models

WHO Pandemic Treaty- Explained Pointwise

The COVID-19 pandemic revealed glaring weaknesses in global preparedness, coordination, and equity in responding to health emergencies. In response, WHO Member States began negotiations in December 2021, culminating in a finalized draft of the WHO Pandemic Treaty (also called Pandemic Agreement) in April 2025, which will be presented at the 78th World Health Assembly on May 19, 2025.

The treaty described as a "generational accord to make the world safer", is a milestone in multilateral cooperation and seeks to prevent future pandemics through equity, coordination, and preparedness.

What is the WHO Pandemic Treaty?

1. A legally binding international instrument developed by an Intergovernmental Negotiating Body (INB) under the WHO Constitution.

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2. Mandated in December 2021 amid COVID-19 after calls from over 20 countries and international organizations in March 2021.

3. Drafted through 13 formal negotiation rounds, including nine extended rounds and multiple intersessional consultations.

4. Its legal status: Subject to adoption by WHO's supreme decision-making body (World Health Assembly) and ratification by individual Member States.

5. Affirms "national sovereignty in public health decisions", explicitly stating that WHO cannot impose mandates such as lockdowns or vaccination.

What are the Key Provisions of the Draft Treaty?

1. One Health Approach- Recognizes that "human health is closely connected to the natural world." Calls for identification and mitigation of risks from zoonotic spillovers (pathogens jumping from animals to humans).

2. Pathogen Access and Benefit-Sharing System (PABS)- Facilitates equitable access to vaccines and diagnostics for countries sharing pathogen data and genetic sequencing. Builds on lessons from the Nagoya Protocol on genetic resource sharing.

3. Global Health Equity- Emphasizes "health equity" and solidarity. Prioritizes low and middle-income countries (LMICs) in access to pandemic-related health products.

4. Technology Transfer and Capacity Building- Mandates sharing of knowledge, skills, and expertise for local vaccine and diagnostic manufacturing. Resolves IPR (Intellectual Property Rights) bottlenecks "in the public-interest."

5. Multidisciplinary Health Emergency Workforce- Calls for the creation of a skilled, trained national and global health workforce.

6. Global Logistics and Supply Chain Network- Establishes coordinated frameworks for pandemic-time logistics and medical supply distribution.

7. Financial Mechanism- Proposes a coordinating financial structure to support pandemic prevention, preparedness, and response (PPR).

8. Sovereignty Clause- Clearly states that nothing in the treaty "shall be interpreted as providing WHO authority to order or prescribe national laws, lockdowns, or mandates."

What is the significance of the WHO Pandemic Treaty?

1. Health Security and Global Governance- It is the first legally binding international covenant exclusively aimed at spillover infections and pandemics. It fills institutional voids exposed by COVID-19, and reinforces WHO's centrality in global health governance post-US withdrawal.

2. Equity and Justice- It addresses vaccine apartheid experienced during COVID-19 (e.g., <20% of Africa vaccinated by early 2022 vs 70% in OECD). It embeds "public-interest" IPR clause, overcoming failures of COVAX and TRIPS Waivers. **For Ex-** mRNA vaccine hubs in South Africa and Indonesia under WHO's mRNA Technology Transfer Hub.

3. Scientific Collaboration- It prioritizes data sharing, essential for early detection (e.g., SARS-CoV-2 genome shared by China on Jan 10, 2020, accelerated global response). It institutionalizes a pathogen sharing protocol, akin to Global Influenza Surveillance and Response System (GISRS).

4. Legal Diplomacy & Multilateralism- It is a historic step at a time of geopolitical fragmentation. As per WHO Director-General: "This agreement is proof that multilateralism is alive and well."

5. Future Pandemic Preparedness- It reflects shift from reactive to prevention-based strategies (aligned with India's "Heal in India" and "One Health" policies). It could help reduce future economic losses—COVID-19 led

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to a 3.4% contraction in global GDP in 2020 (IMF) and exposed $11 trillion in economic losses globally (World Bank).

6. Economic Security- It avoids repetition of pandemic-induced economic disruptions. The World Bank estimates a pandemic could wipe out 5% of global GDP.

What are the challenges and criticisms of the WHO Pandemic Treaty?

1. Absence of the USA- US announced in January 2025 its withdrawal from WHO and did not participate in final negotiations. It weakens the global enforceability and undermines universality of treaty.

2. Lack of Enforcement Mechanism- The treaty lacks binding enforcement or sanctions mechanism if countries fail to comply. The non-binding International Health Regulations (2005) was during COVID-19.

3. North-South Divide- Developed countries insist on sharing immediate scientific data sharing. Low and middle-income countries (LMICs) have demanded reciprocity through guaranteed access to diagnostics and vaccines—a point of friction throughout negotiations.

4. Sovereignty Concerns- Many nations have resisted perceived WHO overreach into domestic health laws.

5. IPR and Pharmaceutical Lobbying- Resistance from pharma giants to mandatory knowledge and technology transfer. **For ex-** Moderna's reluctance to share mRNA tech with African manufacturers despite public funding.

6. Geopolitical Tensions- Growing distrust in global bodies (e.g., WHO accused of China bias in early COVID response) may hinder data sharing and transparency.

What should be the way forward?

1. Legal Strengthening with Incentives- Add mechanisms akin to WTO Dispute Settlement Body or UNFCCC compliance mechanisms. Provide incentives (e.g., R&D grants, patent pools) for cooperation, not just obligations.

2. Strengthen WHO's Role- Reform WHO funding (currently 80% from voluntary contributions) to ensure independence and authority.

3. National Pandemic Laws- Countries, including India, must update or enact comprehensive national pandemic legislations aligned with treaty obligations.

4. Equity-Centric IP Framework- Operationalize WHO's mRNA hubs, expand Medicines Patent Pool (MPP) model, and fast-track TRIPS+ flexibilities.

5. Multistakeholder Involvement- Involve civil society, academia, private sector, and marginalized communities in treaty implementation.

6. Enhance Early Warning Systems- Expand WHO's Epidemic Intelligence from Open Sources (EIOS). Integrate with AI-driven bio-surveillance systems.

> Read More- Nature
> UPSC Syllabus- GS 2- Important International Institutions, agencies and fora – their Structure, Mandate.

Heatwaves in India and Europe-Explained Pointwise

Heatwaves have become a recurring and intensifying climate phenomenon, both globally and in India. As per the World Meteorological Organization (WMO), 2024 was the warmest year on record, with global temperatures about 1.55°C above pre-industrial levels. India is witnessing an increasing frequency, duration, and intensity of heatwaves, which is a critical public health, economic, and equity challenge. Similarly, Europe has warmed almost twice as much as the global average, driven by multiple region-specific factors.

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What are heatwaves? How are they defined in India?

Heat waves are prolonged periods of excessively hot weather that can cause adverse impacts on human health, the environment, and the economy. In India IMD defines heatwave based on the following criteria.

Physiography of regions
· **Plain–** The maximum temperature recorded at a station is 40 degrees Celsius or more.
· **Coast-** The maximum temperature recorded at a station is 37 degrees Celsius or more.
· **Hills-** The maximum temperature recorded at a station is 30 degrees Celsius or more.

Based on Departure from Normal Temperature
· **Heat Wave-** Departure from normal is 4.5°C to 6.4°C
· **Severe Heat Wave-** Departure from normal is >6.4°C

Based on Actual Maximum Temperature
· **Heat Wave-** When actual maximum temperature ≥ 45°C
· **Severe Heat Wave-** When actual maximum temperature ≥47°C
Heat Wave is declared if above criteria are met in at least 2 stations in a Meteorological subdivision for at least two consecutive days.

What are the causes and factors behind rising heatwaves?

A. Heatwaves in the Indian Subcontinent
Natural causes

1. High Atmospheric Pressure Systems- Heatwaves occur when high-pressure systems stall over a region. These systems trap warm air near the Earth's surface and prevent the normal movement of air masses, leading to prolonged periods of hot weather.

2. Climate Variability- Natural climate variations, such as El Nino and La Nina events, influence weather patterns and increase the likelihood of heatwaves. For ex- During El Nino events, warmer ocean waters in the tropical Pacific lead to changes in atmospheric circulation and weather patterns.

3. Drought and Dry Conditions- Prolonged periods of drought and lack of precipitation reduces the overall moisture of the soil, causing the land to heat up more quickly during heat waves.

4. Changes in Wind Patterns- Shifts in wind pattern transports hot air from one region to another which intensifies heat waves in areas that are not typically prone to such extreme temperatures.

5. Geography and Topography- Geographic features and topographical conditions also contribute to the development of heat waves. **For ex-** Landlocked valleys and regions surrounded by mountains trap hot air and lead to temperature spikes.

Human-Induced Factors

1. Climate Change- India has warmed 0.7°C since pre-industrial levels, lower than the global land average (1.59°C), but the frequency of heatwaves has increased in the last two decades.

2. Urban Heat Island Effect- Urban areas with high population density, extensive concrete and asphalt surfaces, and limited vegetation tend to absorb and retain more heat, has created localized zones of higher temperatures. This phenomenon, known as the urban heat island effect, has intensified heat waves in cities.

B. Heatwaves in Europe
1. Greater Arctic Influence (Polar Amplification)- Europe, particularly the northern and eastern regions, lies close to the Arctic, where warming is 3-4 times faster than global average due to albedo loss from melting ice.

2. Cleaner Air & Reduced Aerosols- Reduction in air pollution leads to less aerosol-based sunlight scattering, increasing absorption of solar radiation.

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3. Urbanization & UHI Effect- Densely populated European cities exacerbate warming.

4. Sea Surface Temperature Rise & Atmospheric Circulation- Warmer seas around Europe and altered jet stream patterns lead to prolonged summer heatwaves.

5. Albedo Effect (Europe/Arctic)- Melting Arctic ice exposes dark surfaces (land/water) that absorb more heat. The Arctic is warming 3 to 4 times faster than the global average, influencing European warming trends.

6. Climate Change- Anthropogenic greenhouse gas emissions are leading to global temperature rise, now nearing the 1.5°C threshold. Land areas (especially in mid- to high-latitude regions) are warming faster than oceans.

7. Warming Rate- Average annual temperature increased 2.4°C from pre-industrial times, compared to global 1.3°C. Longest-ever heatwave in Southeast Europe; lowest number of cold days.

What is the significance of curtailing Heatwaves?

1. Public Health Significance- When external temperature approaches 37°C, the human body struggles to release internal heat, resulting in heat stress affecting organs like kidneys, liver, and brain. Reducing hospital and emergency room burden improves health system efficiency.

2. Economic and Productivity Gains- Nearly 75% of India's workforce (~380 million people) is employed in heat-exposed sectors like construction and agriculture. As per ILO estimates heat stress is estimated to result in a 3–5% GDP loss annually in countries like India. Protecting outdoor workers ensures continuity in farming, construction, logistics, and industrial sectors. It reduces loss of working hours, safeguards GDP.

3. Social Equity and Justice- The impacts of heatwaves are disproportionately felt by the poor, women, elderly, and migrant workers, making heatwave mitigation a key element in addressing social inequities. A people-centric approach protects the most vulnerable.

4. Climate Resilience and SDG Goals- Heatwaves are one of the most direct manifestations of climate change. Addressing them contributes to the global goal of mitigating climate change and reducing carbon emissions. Aligns with SDG 3 (Health), SDG 8 (Decent Work), SDG 11 (Sustainable Cities), and SDG 13 (Climate Action).

5. Mitigating Urban Heat Island (UHI) Effect- Curtailing heatwaves can enhance urban livability, lower energy consumption (through reduced air-conditioning needs), and improve the mental and physical well-being of city dwellers.

6. Reducing Environmental Stress and Ecosystem Damage- Curtailing heatwaves helps protect biodiversity, ensuring the health of ecosystems and natural resources essential for human survival.

What are the challenges in addressing heatwaves?

1. Early and Unpredictable Onset of Heatwaves- Heatwaves are now starting earlier in the year, catching authorities and populations off-guard. In 2025, severe heatwaves struck North and Central India 20 days earlier than in 2024, before HAP protocols were activated.

2. High Vulnerability of the Informal Workforce- Nearly 75% of India's workforce (~380 million), especially in agriculture, construction, and street vending, is directly exposed to outdoor heat. In Odisha and Gujarat, many daily wage workers continued working in peak heat hours due to lack of income alternatives or workplace protections.

3. Economic and Productivity Losses- As per ILO and World Bank estimates (2023) heatwaves have a tangible economic cost, including loss of 3–5% of GDP and up to 6% of annual work hours. In sectors like agriculture and construction, heat-induced fatigue reduced work output and delayed infrastructure projects in Rajasthan and Telangana.

4. Unequal and Disproportionate Impacts- Marginalized groups—women, elderly, migrants, and the urban poor—face higher exposure with fewer coping mechanisms. Migrant families living in tin-roofed shelters in Delhi reported extreme indoor heat and health issues during April 2024.

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5. Partial and Uneven Implementation of Heat Action Plans (HAPs)- While 140+ cities and 23 states have HAPs, many lack funding, inter-agency coordination, and local customization. A 2023 CEEW analysis found that only a handful of HAPs included cooling centres, outreach in local languages, or inter-departmental response mechanisms.

6. Insufficient Public Awareness and Risk Communication- Awareness about heatwave risks and protective behavior remains low, especially in rural and low-income urban areas. In Bihar, despite IMD warnings in 2024, many communities continued outdoor weddings and festivals in peak hours, leading to heat-related illnesses.

What Should be the Way Forward?

1. Strengthening and Expanding Heat Action Plans (HAPs)- Update HAPs in every State based on local vulnerability assessments. Include humidity, nighttime temperatures, and thermal comfort indexes for long term planning.

2. Data-Driven Decision Making- Collect granular, real-time heat morbidity and mortality data. Map hotspots within cities to identify intra-urban heat inequality.

3. Improve Early Warning and Forecast Systems- Introduce Heat Health Alert (HHA) systems as in the UK. Use predictive analytics for work timing adjustments in schools, factories, and offices.

4. Build Heat-Resilient Infrastructure- Promote cool roofs, white rooftops, reflective paint, better urban ventilation, and green corridors. Adopt heat-resilient building codes and zoning laws.

5. Protect Informal Workers- Allow staggered/shifted work hours. Provide financial support and insurance for wage losses during heatwaves.

6. Establish Cooling Shelters and Public Utilities- Develop summer shelters like winter shelters. Ensure availability of ORS, drinking water points, shaded rest areas.

7. Encourage Behavioral and Institutional Change- Public awareness campaigns, climate literacy, and workplace heat safety protocols.

8. Long-Term National Policy- Integrate heatwave resilience in National Disaster Management Plan, Smart Cities Mission, and urban master plans. Incentivize tree plantation, wetland conservation, and urban greening.

Conclusion

The rising threat of heatwaves in both India and Europe signals an urgent climate adaptation imperative. While Europe warms faster due to polar influence and cleaner air, India faces a distinct set of vulnerabilities driven by high outdoor labour dependence and inequality. The battle against heatwaves must move beyond token advisories and aim for science-based, people-centric, and equity-focused long-term planning. As the cost-effectiveness of heat adaptation is well-established, prioritizing this agenda is not only a climate responsibility but also a development necessity.

India's Logistics Sector: Challenges and Opportunities- Explained Pointwise

India's logistics sector is at an inflection point, catalyzed by technological disruption, infrastructure expansion, sustainability imperatives, and policy thrust. With "logistics cost in India estimated between **14–18% of GDP" (Economic Survey 2022–23),** against a **global benchmark of 8%**, inefficiencies are a major drag on competitiveness. However, recent developments—from **PM Gati Shakti** to private equity inflows and green transformation goals—signal a paradigm shift.

In the vision of **"Viksit Bharat @2047"**, an efficient, sustainable logistics network is essential to ensuring inclusive development, green growth, and economic competitiveness. Logistics is not merely about movement — it is about connectivity, cost-efficiency, environmental resilience, and scalability.

What is India's Logistics Sector and what is its Contribution?

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India's logistics sector encompasses **transportation (road, rail, air, and waterways), warehousing, supply chain management**, and **value-added services** that support the movement of goods across the country.

1. Contribution to GDP: ~**13-14%** of GDP **(NCAER, 2021-22).**

2. Employment: Employs over **22 million people** across transportation, warehousing, packaging, and related services **(CII Report 2024).**

3. Estimated Costs: **14-18% of GDP**, compared to **8-10% globally**

4. Private Equity Investments in H1 2024: **66% of total asset-class PE** (led by Abu Dhabi Investment Authority & KKR investing; $1.54 billion into Reliance Logistics). **Chennai, Mumbai, NCR, Pune** dominate with **66% of private equity investments** in H1 2024

5. Warehousing absorption: **25% YoY growth** in 2024.

6. Carbon Emissions Share: ~**13.5% of India's GHG emissions**, with road freight contributing **~88%** of sectoral emissions (IEA, 2023).

7. Third-Party Logistics (3PL): Rapid expansion due to **e-commerce, Q-commerce**, and **manufacturing** growth.

What is the Significance and Strategic Importance of Logistics Sector?

1. Economic Growth and Competitiveness: As per McKinsey reducing logistics cost by 1% of GDP can potentially save the economy **$15 billion**. Drives Make in India, Ease of Doing Business, and Export Competitiveness. Major enabler for sectors like manufacturing, agriculture, pharmaceuticals, and FMCG.

2. Infrastructure Development & Urbanization: Major logistics hubs: **Chennai, Mumbai, Pune, NCR** — being upgraded through **multi-modal logistics parks**. Emergence of Tier 2 and 3 cities in cold storage and warehousing (e.g., Patna, Coimbatore, Lucknow).

3. Employment and Skilling: Sector employs over **22 million people**. Recent Budget 2025 proposal: **5 National Centres of Excellence for Skilling** in logistics and warehousing.

4. Environmental and Climate Significance: As one of the world's most **carbon-intensive** sectors, logistics decarbonization is vital for India's **Net Zero 2070 goal**. Warehousing, oil-based freight, and inefficient modal mix contribute heavily to emissions.

5. Support to Key Sectors: Drives growth in manufacturing (Make in India), e-commerce, retail, and agriculture (farm-to-fork cold chains). Backbone for Atmanirbhar Bharat and Digital India.

6. National Development and Inclusivity: Enhances rural connectivity, MSME market access, and employment. "Viksit Bharat by 2047" hinges on future-ready logistics ensuring "growth reaches every region".

7. Geopolitical and Strategic Relevance: Strategic corridors (Delhi–Mumbai Industrial Corridor, Sagarmala) enhance **geo-economic leverage**. Efficient logistics underpin **supply chain resilience and national security**.

What are the major Government Initiatives for the development for logistic sector?

1. PM Gati Shakti – National Master Plan: Launched in 2021: a **GIS-based platform** for integrated infrastructure planning. Enables faster approvals, reduced duplication, and coordinated inter-ministerial planning. Budget 2025 made **PM Gati Shakti data/maps accessible to private sector** for better project planning.

2. National Logistics Policy (NLP), 2022: Aims to reduce logistics costs to single-digit GDP percentage. Focus on multi-modal transport, digital logistics platforms, skilling, and green logistics.

3. Multi-modal Logistics Parks (MMLPs): Over 35 MMLPs planned under PPP model to integrate **road, rail, air, and waterways**. Reduces **transit time, congestion**, and environmental impact.

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4. Sustainable and Green Freight Initiatives: Pilot electric highways (Delhi–Jaipur corridor). **S**olar-powered warehouses, EVs for last-mile delivery. Promotion of biofuels, hydrogen, ammonia-powered ships, and LNG vessels.

5. Skilling Initiatives: Budget 2025: 5 National Centres of Excellence for Skilling focused on industry-ready training. Public-private partnerships driving logistics skilling in Tier 2/3 cities.

6. Sagarmala & Bharatmala Projects: Promote coastal and port connectivity and road freight corridor development. Expected to reduce transit time and logistics cost by up to **25%**.

7. Dedicated Freight Corridors (DFCs): Western DFC (Delhi–Mumbai) and Eastern DFC (Punjab–West Bengal) to shift freight from road to rail.

8. Inland Waterways Development: Plan to **triple cargo movement on rivers** by 2030. Ganga and Brahmaputra rivers identified under **Jal Marg Vikas Project**.

Emerging Trends in 2025 and Beyond

Trend	Key Features
Digital Twins	Real-time virtual models for warehouse simulation and optimization
Q-commerce Boom	Demand for faster last-mile delivery → growth in **in-city fulfilment centres**.
Cold Chain Expansion	Growth in food, pharma, and retail → Tier 2/3 cities seeing deployment of Grade A cold storages.
Tech Integration	IoT for real-time tracking, **robotics**, **blockchain** for inventory and warehouse management.
Sustainability	Electric vehicle fleets, solar power, **circular economy** practices in packaging and supply chains.
Diversity and Inclusion	Increasing female participation in supply chain roles.

What challenges is the logistics sector currently facing in India?

1. High Logistics Costs: Logistics costs 7.8-8.9% of GDP (NCAER 2022) vs. global average of 8%**,** high freight costs and delays. "Supply chain inefficiencies and unfavorable intermodal mix" a key barrier in last-mile connectivity.

2. Carbon Emissions and Environmental Degradation: Road freight: 38% of CO_2 emissions, dominant transport mode, heavy reliance on diesel trucks (88% of transport GHG emissions). Warehousing: High energy consumption, often non-renewable. Aviation and trucking: Difficult to decarbonize due to fuel dependency.

3. Fragmented Sector: Dominated by small, unorganized players lacking technology adoption with lack of standardization and digitization. Over 90% of trucks are individually owned and low penetration of tech-based logistics among SMEs.

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4. Poor Modal Balance: Railways underutilized; India's modal mix heavily skewed towards roads. Inland water transport and coastal shipping infrastructure remains underdeveloped.

5. Inadequate Cold Chain Infrastructure: Essential for food security, pharma, and exports. Gap between supply and demand in Tier 2/3 cities.

6. Workforce Skill Deficit: Lack of industry-specific training. Acute shortage of trained manpower in supply chain, cold chain, and tech operations.

What Should be the Way Forward?

1. Modal Shift to Railways and Inland Waterways: Increase rail freight share from current ~27% to 45% by 2030 (NITI Aayog). Promote coastal shipping and inland waterways: cheaper and greener.

2. Green Infrastructure: Adopt solar, wind, and geothermal energy in warehouses. Roll out electric and LNG-powered vehicles for freight and urban logistics. Align with IMO 2050 goal to cut maritime emissions by 50%.

3. Integrated Tech-Driven Logistics: Expand Unified Logistics Interface Platform (ULIP). Widespread use of IoT, blockchain, GPS-based tracking to reduce delays, thefts, inefficiencies.

4. Cold Chain Modernization: Fast-track deployment in food, pharma sectors with Grade A infrastructure. Focus on Tier 2 and 3 cities for inclusive development.

5. Skill Development and Gender Inclusion: Expand National Logistics Workforce Strategy. Promote women's participation and diversity in supply chain roles.

6. Private Investment and PPPs: Continue enabling private equity inflow (like KKR–ADIA investment). Encourage PPP-led logistics parks and green warehousing.

7. Skill Development and Gender Inclusivity: Establish sector-specific logistics universities, promote female participation through safety measures and awareness.

8. Policy and Regulatory Reforms: Create a Unified National Logistics Regulatory Framework for inter-ministerial coordination. Use logistics performance index (LPI) benchmarking to target improvements.

9. Global Best Practices: China's 50% rail freight share, USA's rail decarbonization, IMO targets for green shipping. India must customize global models to its diverse geography and needs. Germany's Dual Vocational System: Model: Combines classroom training + on-the-job apprenticeships. Adaptation: Indian logistics firms can partner with ITIs/NSDC for similar programs.

Conclusion

India's logistics sector stands at a strategic crossroad. With sustained policy attention, rising private investments, and focus on green and digital transformation, it is poised to transition into a future-ready engine of economic growth. But to truly fulfil the vision of "Viksit Bharat by 2047", logistics must evolve to be not just efficient and integrated, but also inclusive and sustainable.

As the article rightly concludes, "the road to a greener future has been paved; it is now time to accelerate." Logistics is not merely about moving goods—it is about moving the nation forward.

Read more- The Hindu
UPSC Syllabus- GS 3- Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

India's potential in Arctic region – Explained pointwise

The melting of the Arctic region, though is an impending climatic catastrophe, however, it also presents an opportunity for great geopolitical leverage as sea levels continue to rise which leads to emergence of new trade routes. This emerging commercial opportunity becomes even more important because of the potential

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headwinds from the tariffs imposed by the USA as well as development of partnerships between countries around supply chains & trade routes and also because of the climate change. Thus, it becomes important to analyse the situation from India's point of view.

What is the significance of Arctic region's melting?

1. Climate Change Amplifier (Arctic Amplification): The Arctic is warming four times faster than the global average—a phenomenon called Arctic Amplification. As sea ice melts, white ice (which reflects sunlight) is replaced by dark ocean (which absorbs heat), further accelerating warming. This disrupts weather patterns worldwide, including the jet stream, contributing to extreme events like:

- Heatwaves in Europe and Asia
- Harsh winters in North America
- Unseasonal rainfall or droughts globally

2. Resources: The region is estimated to hold 13% of the world's undiscovered oil, 30% of untapped natural gas, Rich deposits of rare earth elements and copper & valuable fishing grounds.

3. Northern Sea Route: According to NASA, the Arctic sea ice is melting at a rate of 12.2% per decade – which will eventually lead to the opening up of a new trade route called Northern Sea Route – connecting the Atlantic & the Pacific Oceans across the North Pole. The NSR is being hailed as the shortest route between Europe & Asia. India's long term approach to explore new mega ports & new trade routes for not economic but also geopolitical significance also makes the NSR crucial.

What are the initiatives of India for Arctic region?

1. Svalbard Treaty (1920): India began its engagement with the Arctic early by signing the Svalbard Treaty in 1920.

2. Himadri = India is the only developing country, besides China, that has an Arctic research base – Himadri.

3. India's Arctic Policy (2022): This policy outlines India's approach to its engagement with the Arctic region, recognizing the Arctic's growing importance due to climate change, economic opportunities, and geopolitical shifts. The policy is structured around 6 main pillars i.e. Science & Research, Climate & Environment Protection, Economic & Human Development, Transportation & Connectivity, Governance & International Cooperation & lastly, National Capacity Building.

4. Monsoon Research: Institute of Governance & Sustainable Development and the National Council of Applied Economic Research collaborated recently to understand how changes in the Arctic, particularly the loss of sea ice, could influence India's monsoon pattern & agricultural output.

5. Observer Status in Arctic Council: India has held Observer status in the Arctic Council since 2013, participating in various working groups and contributing to scientific research.

6. Arctic Circle India Forum: The Arctic Circle India Forum is an upcoming international conference scheduled to take place in May & it reflects the growing importance of the Arctic region for India.

7. Research Initiatives: The National Centre for Polar and Ocean Research (NCPOR) in Goa leads India's Arctic research, including the establishment of a research base in Svalbard, Norway.

8. Scientific Expeditions: India has conducted multiple scientific expeditions to the Arctic, focusing on climate change studies and environmental monitoring.

9. India-Russia Collaboration:

- Establishment of a working group on the NSR under the bilateral intergovernmental commission on trade, economic, scientific, technical & cultural cooperation.
- Chennai-Vladivostok Maritime Corridor also emerges as a potential bridge to the NSR ports such as Pevek, Tiksi & Sabetta.

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What can be the way forward?

1. Shipbuilding: India needs to boost its shipbuilding capacity to sail through the turbulent waters of NSR & grab the opportunity with both hands. It needs to increase the range, categories & capacity of the ships to suit the Arctic's requirement & handle its harsh environment. India needs to make adequate investments in ice-breaking fleets & other structural upgrades to compete globally.

2. Multilateral engagements: India needs to leverage the platforms like Arctic Circle India Forum to help contextualise the dialogue from an Asia- and India-focused lens. The forum should serve as an impetus to move the needle forward on India's Arctic policy with stakeholder consultations & forging of partnerships.

3. 'Polar' Ambassador: Recent developments have seen multiple nations appointing ambassadors to represent their interests in the Arctic region, reflecting the area's growing geopolitical and environmental significance such as USA & Greenland appointing their respective Arctic Ambassadors. India can also take a leaf out of their books & appoint a Polar Ambassador for streamlining its efforts.

4. Balance between Russia & USA:

- Russia with its vast Arctic coastline, extensive experience in Arctic navigation, training of personnel apart from being a trusted partner of India, is an obvious partner for India to explore the NSR. However, India's incline towards the Russian Bloc would be implying support to China's Polar Silk Road, which China is building as a northern extension of its Belt & Road Initiative – which India strongly opposes. Moreover, NSR is providing a much greater opportunity for China to not only grab control over the Arctic route but to completely bypass the Malacca strait choke point in the Indian Ocean.

- On the other hand, if India supports the Western Bloc & partners with the U.S., it could lose its perceived stake in the massive resources that currently fall under the Russian Sphere of Influence.

- Thus, India needs to balance USA & Russia and partner with like-minded nations like Japan & South Korea which share similar concerns about growing cooperation between Russia & China in the Arctic region. The trio should advocate the rectification of disparities within the Arctic Council & promote a more inclusive & equitable Council.

Conclusion:

While the commercial advantages of the Arctic melting are significant—fueling economic activity, investment, and geopolitical interest—they also come with high environmental risks, geopolitical competition & calls for sustainable and regulated development. Thus, it provides a double-edged opportunity – which India needs to smartly grab with both hands while preventing the reckless exploitation of the Arctic reserves.

> **Read More** – The Hindu
> **UPSC Syllabus GS 1** – Critical geographical features, including water-bodies & ice-caps

Indus Water Treaty- Concerns and Way Forward- Explained Pointwise

Indus Water Treaty (IWT), which has survived 4 wars, decades of cross-border terrorism against India by Pakistan, and a long history of antagonism between the two countries, was suspended for the 1st time by India following the terrorist attack on the tourists in Pahalgam on 22/4.
Among the slew of diplomatic actions against Pakistan announced by India – including the closure of Attari border post, cancellation of visas – the suspension of the IWT may have the most far-reaching ramification. Thus, this calls for an analysis of the provisions of the Indus Water treaty, the associated concerns and the Way Forward to address these concerns.
Indus Water Treaty negotiated in 1960 between India and Pakistan is a landmark transboundary water-sharing mechanism. The Treaty has 12 Articles & 8 Annexures (from A to H). However, disagreements have persisted among both India and Pakistan over the treaty.
Before suspending the treaty, India had called for amendments in the treaty last year due to its dissatisfaction

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over the dispute resolution process, blaming Pakistan's continued 'intransigence' in implementing the treaty. Pakistan has also raised objections regarding India's construction of Kishenganga and Ratle hydroelectric projects.

What is the History behind the introduction of the Indus Water Treaty? What are its main provisions?

History Behind the Indus Water Treaty

Pre Independence	Preceding partition, the six rivers of the Indus basin, which originated in the Himalayas/Tibet (Indus, Sutlej, Beas, Ravi, Jhelum and Chenab) was a common network, for both India and Pakistan.
At the Time of Partition	The partition of India raised questions about the distribution of water between the two nations. Since the rivers flowed from India, Pakistan felt threatened by the prospect of control of river waters by India.
Inter-Dominion Accord (May 4, 1948)	The Inter-Dominion Accord of May 4, 1948 laid out that India would release enough water to Pakistan in return for annual payments (by Pakistan). However, the problems of this arrangement were soon realized and it was considered necessary to find an alternative solution.
Indus Water Treaty 1960	India and Pakistan signed the Indus Water Treaty with the intervention of the World Bank in 1960. Precise details were laid out regarding the way in which the waters would be distributed.

Main Provisions of the Indus Water Treaty:

Eastern Rivers with India	Under the Indus treaty, all the waters of 3 eastern rivers namely Ravi, Sutlej, and Beas (with a mean annual flow of 33 Million Acre-feet (MAF)) were allocated to India for exclusive use.
Western Rivers with Pakistan	Pakistan gets control of 3 Western Rivers (Chenab, Indus and Jhelum) with a mean annual flow of 80 Million Acre-feet (MAF).
Western River Water utilization permitted for India	The Indus River treaty allows India to utilize the waters of Western Rivers for: **a. Limited irrigation use** **b. Non-consumptive use**– For applications such as power generation, navigation etc. This, allows India to generate hydroelectricity through a run-of-the-river projects (without the storage of waters) on the western rivers, subject to specific criteria for design and operation. **c. Storage level permitted-** India can store up to 3.75 MAF of water of the Western Rivers for conservation and flood storage purposes.

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Water Division Ratio	The Indus Water treaty gives India 20% of the water from the Indus River System and the rest 80% of the water to Pakistan.
Dispute Resolution Mechanism	The Indus Water Treaty provides a 3-step dispute resolution mechanism. **a. Permanent Commission-** The disputes of the parties can be resolved at the Permanent Commission, or can also be taken up at the inter-government level. **b. Neutral Expert (NE)-** In case of unresolved questions or 'differences' between the countries on water-sharing, such as technical differences, either side can approach the World Bank to appoint a Neutral Expert (NE) to come to a decision. **c. Court of Arbitration-** If either party is not satisfied with the Neutral Expert's decision or in case of 'disputes' in the interpretation and extent of the treaty, matters can be referred to a Court of Arbitration.

What has been the significance of the Indus Water Treaty?

The Indus Waters Treaty has been largely successful in maintaining water cooperation between India and Pakistan for over 60 years, despite periods of political tensions and conflict between the two countries.

1. Only cross border water sharing treaty in Asia- The Indus water Treaty is the only cross border water sharing treaty between two nations in Asia.

2. Generous towards lower riparian state- It is the only water pact that compels an upper riparian state to defer to the interests of a downstream state. Pakistan has been given 80% share in the river water system. This is 90 times greater volume of water than Mexico's share under a 1944 pact with the US.

3. Passed the Crisis test- The Permanent Commission set up as a part of the Dispute Resolution Mechanism under the treaty has met even during the 1965 and 1971 wars between India and Pakistan.

4. India's Generosity- India's respect for the values of trans-boundary river treaty is also a major factor behind the successful functioning of the treaty. India chose not to invoke the Vienna Convention on the Law of Treaties, to withdraw from the Indus Water Treaty in the face of terror attacks like Indian Parliament in 2001, Mumbai in 2008, Uri in 2016 and Pulwama in 2019.

5. Successful Model- The Indus Water Treaty serves as a successful model of cooperation between two rival countries.

What are the concerns with the Indus Water Treaty?

India's Concerns:

1. Most Generous treaty- Experts have termed this the most generous water sharing treaty. The treaty has resulted in unequal sharing of the waters with 80% allotment to Pakistan. It is the only water-sharing pact in the world that compels upper riparian State to defer to the interests of the downstream State.

2. Prevents India from building any storage systems on Western Rivers- Despite the Indus water treaty providing for certain exceptional circumstances for building storage systems on Western Flowing Rivers, Pakistan has deliberately stopped such efforts. The extensively technical nature of the treaty allows Pakistan to stall legitimate Indian Projects.

3. Pakistan's continued "intransigence" in India's Hydroelectric Projects- In recent times disputes over the Kishenganga and Ratle hydroelectric projects have intensified. Although, they are 'run-of the-river' projects,

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which generate electricity without obstructing the natural flow of the river, Islamabad has repeatedly alleged that these violate the IWT. Also, Pakistan is directly seeking arbitration at The Hague, bypassing treaty-compliant proceedings. Pakistan's proposal for a PCA mechanism in these hydropower projects is in contravention to the graded dispute settlement mechanism provided in Article IX of the IWT.

India had issued notices – first in 2023 & again in 2024 – to seek a 'review and modification' of the agreement. The latest notice, which includes the word 'review', signaled New Delhi's intent to revoke and renegotiate the 64-year-old treaty. Article XII (3) allows for modifications through a new, ratified agreement between both governments.

4. Old and Outdated Treaty- According to the Departmentally Related Standing Committees on Water Resources report of 2021, present day pressing issues such as climate change, global warming and environmental impact assessment have not been taken into account by the Treaty. The Indus basin, which has been ranked as the world's second most over-stressed aquifer by NASA in 2015, has been severely affected by climate change. India seeks renegotiation and amendments to the treaty for sustaining its burgeoning population.

5. Loss to Indian States in the Indus Basin- There have been substantial economic losses to the Indian States in the Indus River Basin. **For ex-** According to J&K Govt's hired consultant report, J&K has been suffering economic losses to the tune of hundred of millions annually due to the Indus Water Treaty.

Pakistan's Concerns:

1. Lower Riparian Concerns- As a lower riparian state, Pakistan fears infrastructure developments will reduce downstream flows.

2. Accusations of 'Water Terrorism'- Pakistan accused India of "water terrorism" for the Shahpurkandi barrage project, despite the project's compliance with the IWT.

3. Environmental Flow Issues- Pakistan insists on maintaining environmental flows, supported by the 2013 Permanent Court of Arbitration ruling on India's obligation to release flows downstream of the Kishanganga project.

4. Tied Hands of Pakistan: Dispute resolution mechanisms in the IWT will be of no use & assistance of Pakistan in case India decides to 'revoke' the treaty. As there is no provision in IWT about its duration or suspension, there is no avenue that Pakistan can approach for 'revival' of the treaty. Pakistan cannot approach the **International Court of Justice** to implement the treaty because of the Indian reservation given under the ICJ statute that bars the filing of a case by Pakistan against India.

What is the significance of suspension of IWT for India?

1. Strategic Pressure Tool (Diplomatic leverage): Suspension can be used to pressure Pakistan over cross-border terrorism and ceasefire violations. Demonstrates that tolerance has limits in bilateral relations.
2. Utilisation of resource: India can now create storage on western rivers – Indus, Jhelum & Chenab. After suspending the IWT, India can immediately stop sharing water flow data with Pakistan. There will be no design or operational restrictions on India for the use of water of the Indus & its tributaries.
3. National Sentiment and Sovereignty: Suspension of IWT reflects India's assertion of sovereign rights over its rivers, especially amid growing public and political pressure after militant attacks like Uri (2016), Pulwama (2019) & now Pahalgam.
4. India can also stop visits by Pakistan officials to the 2 HEPs currently under construction in J&K – Kishenganga HEP on Kishenganga (a tributary of Jhelum) and Ratle HEP on Chenab.
5. India can undertake reservoir flushing (a technique used to remove accumulated sediments from reservoir by releasing water through low-level outlets to scour-out the sediments & transport it downstream) on the Kishenganga project, which will increase the life of the dam.
6. Climate and Water Security: With increasing water scarcity, India may prioritize domestic agricultural and drinking water needs over treaty obligations.

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Read More- Need to amend the Indus Waters Treaty

What are the Concerns with the termination or abrogation of the IWT?

Abrogating the Indus Waters Treaty (IWT) between India and Pakistan could have serious consequences for the region:

1. Escalation of Geopolitical Tensions- Abrogation of the treaty is likely to escalate political tensions between India and Pakistan. This might heighten the risk of water conflicts between the two nuclear-armed neighbors.

2. Threat to Regional Stability- The Indus river basin is shared by India, Pakistan, China and Afghanistan. Instability in the IWT could have ripple effects on water cooperation in the wider region.

3. Damage to India's International Standing- Unilaterally suspending or withdrawing from the IWT could damage India's image as a responsible global power. It may be a setback for future negotiations of water treaties, like the Teesta Water Treaty with countries like Bangladesh.

4. No 'Exit Clause': The IWT lacks an exit clause i.e. neither India nor Pakistan can legally abrogate it unilaterally. The treaty has no end date & any modification requires the consent of both the parties.

What Should be the Way Forward?

1. While the IWT cannot be exited, it does contain a dispute resolution mechanism: Article XI, along with Annexures F & G – which lays out procedures for raising grievances – first before the Permanent Indus Commission, then a Neutral Expert, and eventually, a forum of Arbitrators.

2. Integration of Ecological Perspectives- The ecological perspectives must incorporate Environmental Flows (EF) to sustain the Indus Valley ecosystems, as suggested by the Brisbane Declaration and the 2013 Permanent Court of Arbitration ruling on Kishanganga.

2. Recognisation of Climate Change Impacts- Strategies must be developed to manage climate change effects. India should explore the possibility of using climate change as a 'change in circumstances' to initiate conversation on renegotiation of the IWT.

3. Enhanced Water Data-Sharing- A World Bank-supervised, legally binding data-sharing framework should be established to monitor water quality and flow changes. Such estimates would add to the accuracy of each side's dependence on the other in sharing the waters of these rivers.

4. Incorporation of International Legal Standards- The treaty provisions must be aligned with the 1997 UN Watercourses Convention and the 2004 Berlin Rules on Water Resources for sustainable water use.

5. Proactiveness on India's part in utilization of allocated water share- As suggested by the standing committee of water resources, the canal systems in Punjab and Rajasthan should be repaired to increase their water carrying capacity. Also, India should take steps to completely utilize its entitlement of waters of Western Rivers.

6. Use of pressure tactic in case of escalation- As suggested by some experts, in case of escalation of hostilities by Pakistan in future, India can suspend the meetings of Permanent Commission. If the first state of dispute redressal is not functional, the subsequent two steps of 3-tier dispute redressal don't kick in.

7. Internationalize Pakistan's Violations: Instead of withdrawing, India can highlight Pakistan's terror-related breaches as violations of peaceful cooperation under the treaty's spirit.

Conclusion:
The Indus Waters Treaty, despite being resilient, is under increasing strain due to geopolitical tensions because of Pakistan's continued support to cross-border terrorism, climate stress, and domestic water needs. While India has the right to re-evaluate its approach, outright suspension poses significant strategic and legal

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challenges. A calibrated approach of assertive diplomacy, technical readiness, and treaty modernization is the best path forward.

INDUS WATER TREATY

Key Provisions

River Water Distribution	Eastern Rivers- Ravi, Sutlej, and Beas with India. Western Rivers- Chenab, Indus and Jhelum with Pakistan India's Share- 20% and Pakistan's Share- 80%
Western River Water utilization permitted for India	Non Consumptive Use of Western River Water like construction of Run of River Hydroelectric Plants Permitted to India.
Dispute Resolution Mechanism	3 stage Dispute Resolution Mechanism Stage 1- Permanent Commission Stage 2- Neutral Expert (NE) Stage 3- Court of Arbitration

Significance of the Treaty

1. **Successful Model**- Only cross border water sharing treaty between two nations in Asia. Treaty between two rivals.
2. **Generous towards lower riparian state**- Pakistan's share is about 90% greater than Mexico's share in the 1944 treaty with US.
3. **Passed the Crisis test**- The Permanent Commission has met even during the 1965 and 1971 wars.

Concerns with the Treaty

India's Concerns

1. **Dispute over India's Hydroelectric Projects**- Pakistan has raised objections on Ratle and Kishanganga Projects.
2. **Climate Change Impact**- Indus River System is the most water stressed according to NASA.
3. **Loss to Indian States in the Indus Basin**- J&K and Punjab Complain of million dollar losses

Pakistan's Concerns

1. **Lower Riparian Concerns**- infrastructure developments will reduce downstream flows
2. **Accusations of 'Water Terrorism'**- Pakistan has raised objections regarding the Shahpurkandi barrage project.

Way Forward

1. Integration of Ecological Perspectives and Recognisation of Climate Change Impacts.
2. Enhanced Water Data-Sharing
3. Incorporation of International Legal Standards like 1997 UN Watercourses Convention and 2004 Berlin Rules on Water Resources for sustainable water use
4. Pro activeness on India's Part in utilization of allocated water share like desilting of canals and run-off river hydroelectric plants.

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World Trade Organisation – Relevance & Challenges – Explained Pointwise

One of the major global headwinds casting a shadow on the international trade is the 'reciprocal tariffs' which have been imposed by the US President Donald Trump to punish the countries, including some of the closest trading partners of America. These tariffs, also known as the 'Trump Tariffs', have been compared to the **Smoot-Hawley Tariffs** of 1930 – which is believed to had hastened the slide into the Great Depression. However, unlike the 1930s, the world today has an international organisation, called WTO, regulating the international trade according to a rule-based order. However, many have also argued that the WTO has lost its relevance in the present period. Thus, in this article we will try to discuss the achievements of WTO, the challenges that it is currently facing & what could be the reforms that should be brought in it.

What is WTO?

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The World Trade Organization (WTO) is the primary international organization governing the rules of trade between nations. It was established in 1995, replacing the **General Agreement on Tariffs and Trade (GATT)**, which had been in effect since 1948.

Principles: The WTO operates on several core principles such as:

- **Non-discrimination:**
  - **Most-Favoured-Nation (MFN):** Treating all trading partners equally.
  - **National Treatment:** Treating foreign products, services, and nationals no less favorably than domestic ones.
- **Reciprocity:** Countries should aim to lower trade barriers in exchange for similar concessions from other countries.
- **Trade Liberalization:** Gradual reduction of tariffs and quotas.
- **Binding Commitments:** Countries' commitments to open markets are binding and enforceable.
- **Transparency:** Member countries are required to publish their trade regulations. WTO collects and shares trade information among members.
- **Dispute Settlement:** Provides a legal and institutional framework for resolving trade conflicts

What have been the achievements of WTO?

1. Facilitation of International Trade- Binding rules for global trade in goods and services have facilitated dramatic growth in cross-border business activity. The real volume of world trade has expanded by 2.7 times since the inception of WTO.

2. Forum for Negotiations: It serves as a platform for countries to negotiate new trade agreements and address trade-related issues, promoting ongoing trade liberalization.

3. Reduction in Tariffs- After the creation of WTO, average tariffs have almost halved, from 10.5% to 6.4%. This has facilitated the growth of International trade.

4. Boost to national incomes- Accession to WTO has given a lasting boost to national income of several developing economies.

5. Rise of global value chains- The predictable market conditions fostered by the WTO have combined with improved communications to enable the rise of global value chains. Trade within these global value chains today accounts for almost 70% of total merchandise trade.

6. Reduction in poverty- The free and fair trade principles has also contributed to reduction in world poverty levels. Taking into account, the World Bank's $1.90 threshold for extreme poverty, the poverty level has fallen from ~33.33% in 1995 to ~10% today.

7. Dispute settlement: The Dispute Settlement Body (DSB) of WTO provides a rules-based system to resolve trade conflicts. It has handled over 600 disputes, many involving major powers like the US, EU, and China. It has helped in avoiding the trade wars and ensures compliance with international norms so far.

8. Support for Developing Nations: WTO has provided technical assistance, training, and special provisions to developing countries which has helped them in developing their capacities. It has allowed longer timeframes and flexibilities to them in implementing trade agreements. It has also launched the **Aid for Trade** initiative to help the least-developed countries (LDCs).

9. Trade Policy Review: The WTO reviews national trade policies to ensure transparency and compliance with WTO regulations, fostering greater openness in trade practices.

What are the challenges and key areas of reforms for WTO today?

The WTO was expected to perform 3 functions – the negotiating function, the dispute settlement function, and the trade monitoring function. It has been struggling to perform any of them.

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1. Stalemate in Trade Negotiations (Doha Round Failure): The Doha Development Round, launched in 2001, aimed to improve trade conditions for developing countries. It failed to reach consensus due to deep disagreements between:

- Developed nations (pushing for access to developing markets)
- Developing nations (seeking agricultural subsidies reform).

The failure reflects the WTO's inability to adapt to evolving global dynamics.

2. Bias Towards Developed Countries: WTO rules are often seen as favoring the economic interests of rich nations. Developed countries continue to provide massive agricultural subsidies (e.g., EU, US), while pressuring developing nations to open up markets. This has led to growing North-South tensions within the WTO framework.

3. Rising Protectionism and trade restrictions:

- MFN (Most Favoured Nation) principle is the bedrock of WTO & hence it was included as Article 1 in the Agreement. However, many countries (especially developed countries) are now stepping away from the MFN because according to them the trade liberalization has not happened as much as they were expecting, Moreover, they are finding it easier to negotiate on tariffs bilaterally by signing FTAs rather than at WTO.
- Trade restrictions by the developed and advanced economies has affected international trade (~$747 billion in global imports), and postponement of investment by businesses. WTO has not evolved into a forum to find a solution out of such kind of economic crisis.

4. Failure of dispute resolution mechanism (DSM)- There has been a lack of consensus among the members regarding the reforms of the Appellate Body. The appointment of nominees to WTO's appellate body has at times been blocked by developed countries, paralyzing the WTO as a judge and enforcer of global trade rules. *For ex- US has been blocking appointments to the Appellate Body since 2019.*

5. Trade distortion by misusing the Special and Differential Treatment (S&DT)- Provisions for agricultural and industrial subsidies have been misused by many developed countries, causing trade distortions. High income countries like South Korea and China have mis-utilised the concessions of developing countries, as developing countries are defined based on 'self-declaration'.

6. Shift to Plurilateral Agreements- There has been a shift towards plurilateral agreements like the TPP Agreement. Plurilateral Agreements favour developed countries more as they are able to push their interests (developing countries have less negotiating power) unlike WTO where all agreements happen through consensus.

7. Lack of consensus- WTO works on the principle of consensus-based decision making which often leads to deadlock & inaction. Moreover, there is lack of consensus on WTO reforms. For e.g. on one hand, the countries of Global South demand rationalization of fisheries subsidies, handholding of their public stockholding programs. On the other hand, developed nations have put their old obligations on the back-burner and are pushing the WTO to form rules on e-commerce, an area where they have a clear edge. Due to slow bureaucratic process of WTO, it takes years to complete the negotiations & bring reforms, making the WTO too slow to respond to modern trade issues like: E-commerce, Digital services, Climate-related trade policies.

8. Lack of Support for Least Developed Countries (LDCs): Despite promises, LDCs struggle to access global markets due to: Complex rules, High compliance costs & Limited representation in negotiations. WTO has not fully delivered on its development agenda.

9. Lack of Transparency: WTO negotiations are often criticized for being opaque, with limited input from civil society and smaller countries. The process is seen as undemocratic, favoring the interests of richer members.

10. China-factor: WTO has been criticized to allow China to flood the global markets with its cheap exports, but simultaneously restricted access to its domestic markets. WTO rules were highly inadequate to anticipate

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that how one country can produce more than 50% of steel & would flood the market & able to distort the trade – without violating the WTO rules, but clearly undermining the integrity of multilateral trading system.

11. India-specific challenges:

- WTO required the participating members to reduce their domestic subsidies on agriculture sector. However, agriculture is a politically sensitive issue for any government in India. Moreover, for country like India, which relies on domestic production, to limit its subsidies to just 10% will limit its developmental needs & raise food security concerns.
- India's large-scale public stockholding programs for food security have been contentious at the WTO, as other members argue these programs distort global trade. The "Peace Clause" offers temporary protection, but a permanent solution remains elusive, leaving India's food security policies vulnerable to challenge.
- India has opposed recent plurilateral initiatives (agreements among subsets of WTO members) on issues such as investment facilitation, arguing there is no mandate for such negotiations. This stance has isolated India and is seen as obstructing the WTO's ability to address emerging trade topics like digital trade, climate, and labor standards.
- India's competitive advantage in services (IT, finance, education) is often hampered by barriers in developed markets, including visa restrictions (e.g., H-1B visas in the US). Negotiations under the General Agreement on Trade in Services (GATS) have not yielded sufficient gains for India's service exporters.
- The WTO's TRIPS agreement poses challenges for India's generic pharmaceutical industry, which is vital for affordable medicines both domestically and globally. Stringent patent rules can restrict India's ability to produce generics, impacting public health.
- Developed countries frequently use non-tariff barriers, such as sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT), which Indian exporters find costly and difficult to comply with. These requirements often necessitate significant investment in infrastructure and standards compliance, putting Indian producers at a disadvantage.
- India often faces an asymmetry in negotiating power against developed countries, making it challenging to advance its interests effectively. To counter this, India builds coalitions with other developing countries, but this sometimes leads to a perception of obstructionism.

What are the suggested WTO reforms?

1. Dispute Settlement System Revival:

- **Restore Appellate Body Functionality:** Simplify procedures, reduce costs, and improve transparency. Clearer timelines, stricter compliance with rulings, and safeguards against overreach.
- **De-politicization of Appointment process-** The appointment process to dispute settlement body should be made independent of political control.
- **Interim Solutions:** Some members propose alternative dispute resolution mechanisms (e.g., mediation) while addressing Appellate Body paralysis.
- **Dispute settlement reform-** Expanding the Appellate Body panel from seven to nine judges, redefining membership of the Appellate Body from part-time to full-time, and allocating more resources to the Appellate Body Secretariat.

2. Special and Differential Treatment (SDT) Reform:

- **Objective Criteria:** Replace self-declared developing-country status with metrics like GDP per capita, trade share, and human development indicators.
- **Graduation Mechanism:** Phase out SDT benefits for advanced developing economies (e.g., G20 members) while retaining protections for LDCs

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3. 30 for 30- India had earlier issued a comprehensive proposal called "30 For 30". It was to bring at least 30 operational improvements to the WTO before the Organization completes 30 years, that is by 1 January 2025. A year long cooling-off period before hiring a diplomat in any role in the organization, resolving old issues before picking up new ones, and a time-bound work programme to make dispute settlement more accessible for developing countries are some of the suggested operational improvements.

4. New rules on emerging trade domains- There must be consensus based new agreements on emerging trade domains like electronic commerce, investment facilitation, domestic regulation in services. It will make trade more efficient and predictable in cutting-edge sectors of the economy.

5. Increasing participation in global trade- Efforts must be made to make it easier, safer and viable for women and smaller businesses to participate in global trade. This would help make trade more inclusive.

6. Reforming the voting process- Clear guidelines must be spelt as to when a country may use its veto power. Veto usage needs to be weighed against the interests of all, and in light of the WTO's mandate.

7. Independent panel as arbiter- An independent panel could play the role of arbiter, evaluating the competing claims and helping to overcome the political deadlock.

8. Increasing transparency- WTO members should proactively disclose their subsidies to develop trust and transparency among WTO members.

Conclusion:
However, despite these challenges, WTO remains essential, but without real reforms, its influence will continue to decline, and global trade may become more fragmented and unstable. WTO reform is not just about fixing broken systems—it's about revitalizing global trust in a fair and inclusive multilateral trading order.

> **Read More:** The Hindu
> **UPSC Syllabus GS2: Important international institutions, agencies & fora.**

Non-Aligned Movement – Challenges & Relevance – Explained Pointwise

2025 marks the 70th anniversary of 1st Asia-Africa Summit, popularly called as Bandung Conference, which laid the foundation of Non-Aligned Movement (NAM). The Asia-Africa Summit gave birth to a new paradigm of South-South Cooperation. It demonstrated the need for the Global South to work together to champion its collective aspirations on the world stage.
However, due to shifting global landscape, divergent national interests, rise of alternative platforms, lack of leadership & inaction – questions have been raised about whether NAM is still relevant today or not.

What is NAM?

NAM was a started during the cold war as an organization of States which were recently got liberated & that didn't seek to formally align themselves with either **USA** *(representing capitalist bloc)* or **USSR** *(representing socialist bloc)* or their ideologies, but sought to remain independent or neutral. However, it doesn't mean that the countries committing to NAM will not take any advantages from either USA or USSR but means that they will not going to have any ideological commitments.
The movement originated in **1955** during **ASIA-AFRICA CONFERENCE** in **Bandung –** where 29 newly independent Asian & African countries met – which led to the development of a Global South. The Organization came into existence in **1961** with **BELGRADE CONFERENCE** under the leadership of **India, Yugoslavia, Egypt, Ghana & Indonesia**.
Policy of non-alignment was based on 5 principles called **PANCHSHEEL:**

- Mutual respect for each other's territorial integrity & sovereignty.
- Non-interference in each other's military & internal affairs.
- Mutual non-aggression
- Equality & mutual benefit

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- Peaceful coexistence & economic cooperation

What are the challenges faced by NAM?

1. Losing relevance: NAM is based on the philosophy of non-alignment which is rooted in the legacy of colonialism & ideology of cold war. With the end of the cold war & changing world order- NAM is seem to be losing its relevance.

2. Internal Cohesion and Divergent Agendas: NAM's membership is large and diverse, encompassing countries with vastly different political systems, economic interests, and foreign policy priorities. This diversity leads to difficulties in achieving unity and taking decisive action on global issues. While agreement on broad principles is common, consensus on specific international issues is rare, often resulting in only general statements rather than concrete resolutions or collective action.

3. Fragmentation and Leadership Vacuum: The breakup of key founding states (e.g., Yugoslavia) and the lack of strong, natural leaders today have weakened NAM's influence. Some major members have shifted their focus to other alliances or regional groupings. The movement lacks charismatic or widely accepted leaders who can steer its agenda in the current multipolar world.

4. Perceived Lack of Impact and Action: NAM is often seen as reactive rather than proactive, preferring criticism or support over hardline resolutions or interventions. Its impact on pressing global issues, such as conflicts, nuclear disarmament, and economic reform, is perceived as limited. The movement's calls for nuclear disarmament and equitable international economic structures have not yielded substantial results, leading to questions about its effectiveness.

5. Emergence of alternative platforms: Alternative platforms like BRICS, SCO, G20 etc have emerged with overlapping agendas- reducing the need & scope for NAM.

What is the contemporary relevance of NAM?

1. NAM Principles: The core principles that catalyzed the coming together of leaders of developing world in 1955, i.e. **Panchsheel,** are equally relevant even today. These principles are required to uphold & defend the rules-based global multilateral system which is under siege today & UN in its present form – has become highly inadequate to address the global challenges.

2. Representation and Voice for the Global South: NAM is the second largest grouping of states after the United Nations, comprising 120 member countries and representing nearly two-thirds of UN members and over half of the world's population. It continues to serve as a collective voice for developing nations, advocating for their interests in global forums, especially at the United Nations.

3. Advocacy Against Neo-Colonialism and Western Hegemony: In the post-Cold War era, NAM has repositioned itself to confront what it perceives as Western dominance and neo-colonialism, focusing on the marginalization and exploitation of poorer nations in a unipolar world. The movement opposes foreign occupation, interference in internal affairs, and aggressive unilateral measures by powerful states.

4. Focus on Socio-Economic Challenges: NAM has shifted its agenda toward addressing economic underdevelopment, poverty, and social injustices, which it identifies as major threats to peace and security for its members. It plays a role in promoting economic cooperation, equitable development, and the reduction of global inequalities, particularly those exacerbated by globalization and neo-liberal policies.

5. Promotion of Multilateralism and Peace: The movement remains committed to principles of peaceful coexistence, mutual respect, non-interference, and disarmament. NAM actively supports multilateral approaches to global challenges, including nuclear disarmament, regional security, and the strengthening of international law.

6. Platform for Unity and Coordination: NAM provides a forum for developing countries to coordinate their positions on major international issues, enhancing their bargaining power in negotiations with developed

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nations. It is especially active within the UN system, where NAM countries often debate and advance common positions on issues like development, climate change, and reform of international institutions.

Conclusion:
The Global South has to be at the forefront of shaping the evolving multipolar world to ensure it is focused on a fair, just, inclusive & equitable global community. In this scenario, NAM remains relevant in 2025 as a vital platform for the Global South, championing multilateralism, socio-economic justice, and resistance to global power imbalances. While it faces challenges of cohesion and influence, its advocacy for equitable development and international cooperation continues to resonate for many member states.

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India-Saudi Arabia Relationship – Significance & Challenges – Explained pointwise

PM Modi recently went on State Visit to the Kingdom of Saudi Arabia before he cut short the trip after Pahalgam terror attack. The April 2025 visit of Prime Minister Narendra Modi to Saudi Arabia marked a strategic milestone, with the signing of multiple MoUs in energy, digital infrastructure, pharmaceuticals, and labour welfare.

India and Saudi Arabia enjoy a strong relationship and close people-to-people ties marked by trust and goodwill. However, there are still certain challenges & various government initiatives which we will discuss in this article.

A Brief history of India Saudi Arabia Relations

Source-Wikipedia

> **Initial Warm Phase:** India Saudi Arabia **established diplomatic relations in 1947** which was followed by high-level visits from both sides. King Saud of Saudi Arabia visited India in 1955 and the Prime Minister Jawaharlal Nehru visited the Saudi Arabian Kingdom in 1956.

> **Cold Phase During Cold War:** During the **Cold War**, Saudi Arabia put itself in the American camp but India followed the policy of non alignment. This dampened the initial warmth in the relations. Also, the defeat of Pakistan in 1971 followed by the **oil crisis of 1973** and Soviet intervention in Afghanistan further deteriorated the India Saudi relation.

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Normalization of relationship: In January 2006, King Abdullah bin Abdul-Aziz visited India which was the first visit by a Saudi monarch in 51 years and the first top level bilateral visit since Indira Gandhi's trip to Saudi Arabia in 1982. **The Delhi Declaration 2006** was signed which aimed to strengthen ties in areas of energy, trade, science and technology, education, health, and political cooperation on regional and international issues.

Deepening of Strategic Relationship: The **Riyadh Declaration 2010** furthered on the Delhi Declaration 2006 agreement and focused on enhancing cooperation on counter terrorism, money laundering, narcotics, arms and human trafficking, and defence and economic cooperation. PM Modi visited Riyadh in 2016 and in 2018 met Saudi Crown Prince in Argentina on the sideline of the G-20 summit. Saudi Crown Prince held bilateral talks with PM Modi after the recently concluded G-20 summit. India-Saudi Arabia have further deepened their strategic relationship by forming **Strategic Partnership Council (SPC).**

What is the significance of India Saudi Arabia relations?

India and Saudi Arabia hold a lot of importance for each other and hence India-Saudi Arabia relationship is seen as one of the most promising partnership in the 21st Century.

Geo-Political Significance:

1. Saudi Arabia's growing geopolitical importance: Saudi Arabia has substantial geopolitical influence in the regional politics of Middle East especially on the **Israeli-Palestinian peace process**. Saudi Arabia has cultivated ties with major powers such as the US, Russia, China and the EU.This increasing geopolitical profile of Saudi Arabia has to led to deepening of India's geopolitical engagement with Saudi Arabia.

2. Deepening of Chinese geopolitical relation with Saudi Arabia: China has deepened its geopolitical relation with Saudi Arabia. China has initiated the **Saudi Arabia-Iran relations reconciliation.** Thus it becomes important for India to engage with Saudi Arabia in the geopolitical arena to counter the growing Chinese geopolitical influence.

Geo-Strategic Significance:

1. Counter Terrorism Cooperation: Saudi Arabia has a substantial influence over Pakistan. India can use this influence to bring Pakistan to negotiating table for talks on terrorism. Saudi Arabia has shown an understanding of **India's terrorism-related concerns** and has agreed to work with India in countering the global menace. For e.g. Saudi Arabia strongly condemned the Pahalgam terror attack.

2. Defence cooperation: Saudi Arabia has limited experience in countering threats from groups like **Houthi militias**. Both countries have conducted joint military exercises on tackling terrorism in the mountainous areas bordering Yemen. They are exploring the possibilities of joint development and production of defence equipments.

3. Fighting piracy and protection of oil routes: Piracy in the Gulf of Aden and surrounding regions remains a threat to Sea Lines of Communication. There is also an increase in naval cooperation between India and Saudi Arabia with two editions of the bilateral naval exercise-**Al Mohed al Hindi** conducted to protect the world's oil artery the Strait of Hormuz.

Geo-Economic Significance:

1. Energy security: Saudi Arabia is 3rd largest source of crude oil & natural gas for India. It is a **source of 17% or more of crude oil and 32% of LPG requirements** of India and thus a key pillar of India's energy security. With US sanctions on Iran**,** India needs to import crude oil from other sources to meet its energy need. Saudi Arabia have offered India with additional crude oil supplies to meet India's growing needs. The partnership is expanding into renewable energy, particularly green hydrogen, supporting India's energy transition and Saudi Arabia's Vision 2030 diversification strategy.

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2. Saudi Arabia's Vision 2030: Vision 2030 plan of Saudi Arabia calls for **diversification of** the oil-dependent economy by attracting tourism and foreign investment and turning it into a global hub for business and culture. Saudi Arabia needs India's technological assistance to execute Vision 2030.This Vision opens up immense opportunities for Indian businesses like the **IT sector** and the **infrastructure businesses.**

3. Investment: Saudi Arabia has one of the **largest Sovereign Fund** in the World. It is an important nation to invest fund in India particularly in National Infrastructure and Investment fund (NIIF). Saudi oil giant Aramco and the Abu Dhabi National Oil Company have acquired 50% stake in the $44 billion project in Ratnagiri, Maharashtra. Saudi Arabia has committed to investing up to USD 100 billion in India, spanning critical sectors such as energy, infrastructure, technology, and health

4. Trade: India is Saudi Arabia's second-largest trade partner and Saudi Arabia is India's fourth-largest trade partner. Bilateral trade between the countries in FY2022-23 was valued at **$52.76 billion.** Trade between the countries is going to increase in the coming decades.

Cultural Significance:

1. Cultural Connect: Saudi Arabia facilitates **Hajj pilgrimage** to over 1,75,000 Indians every year. This is why Saudi Arabia is culturally significant for India.

2. Indian Diaspora: The 2.7 million strong Indian community in Saudi Arabia is the **'most preferred community'** in Saudi Arabia and act as gents of soft power diplomacy. It is the largest expatriate group in the Kingdom. They send remittances of over US $11 billion annually to India.

3. Cultural and tourism exchanges are being enhanced, including new initiatives in film, education, and tourism under Saudi Vision 2030

What are the Challenges in India Saudi Arabia Relations?

However this deepening relation between India and Saudi Arabia also face several challenges which have been enumerated below.

1. Complexity of Middle East Politics: The politics of the Middle East are complex and multidimensional. There exist several fault lines like **Saudi Arabia-Iran Rivalry, Saudi Arabia-Israel animosity**. India faces a complex challenge to manage its relationship with all these countries without antagonizing others. For e.g. India tries to maintain ties with Iran (especially for projects like Chabahar Port), but Saudi Arabia's rivalry with Iran can complicate things.

2. Saudi Arabia–Pakistan Relations: Saudi Arabia has deep historical ties with Pakistan, including military and financial support, which sometimes causes friction with India. **Saudi Arabia is one of the largest financial aid provider to Pakistan**. Pakistan has been using these funds to breed terrorism and hatred towards India. This has also led to some discomfort in deepening of India-Saudi Arabia Relationship in the field of counterterrorism.

3. Labour and Migration Issues:

- **Expatriate Welfare:** The large Indian expatriate community (over 2.6 million) in Saudi Arabia sometimes faces challenges related to working conditions, wage disputes, and limited legal recourse, particularly under the erstwhile **Kafala system**. Although reforms are underway, ensuring the welfare and protection of these workers remains a priority.
- **Nitaqat Program of Saudi Arabia:** The Nitaqat program was introduced in 2011 in order **to increase the employment of Saudi nationals in the private sector**. Saudi policy of 'Nitaqat' have upset the large expatriate community of Indian working in the Kingdom.

4. Asian Premium: The "Asian premium" is an extra charge that the Organization of the Petroleum Exporting Countries (OPEC) levies on oil sales to Asian countries, including India, over and above the actual selling price of the oil. This premium has been a contentious issue, with Asian countries arguing that it is unfair and calling for its elimination. Saudi Arabia, the world's largest oil producer, has reduced the Asian premium charged on

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oil exports to India from around $10 per barrel to $3.5 per barrel. This move comes after India started sourcing a significant portion of its energy requirements from Russia, which is not a member of OPEC and therefore does not apply the Asian premium on its oil sales. India has been pressing oil producers to remove this premium for a long time, and has even suggested the introduction of an "Asian discount" instead.

5. Trade Deficit: India consistently faces a significant trade deficit with Saudi Arabia, primarily due to its heavy reliance on Saudi crude oil imports. In FY 2023-24, the trade deficit was nearly USD 20 billion.

6. Kashmir Issue: Occasionally, Saudi Arabia (through the OIC – Organization of Islamic Cooperation) has made statements supporting Pakistan's stance on Kashmir, though less so recently.

7. China's Growing Influence: Saudi Arabia is also deepening ties with China (energy deals, investment, and even security cooperation), which can dilute India's influence.

8. Maritime Security: Ensuring the safety of maritime trade routes in the Red Sea and the Gulf, especially in light of actions by non-state actors, requires close cooperation but also presents a shared security challenge.

What are the government initiatives to boost the bilateral relations?

1. POLITICAL COOPERATION:

- India's **LOOK WEST ASIA POLICY (2005):** India's Look West Policy is a strategy adopted by India to strengthen its relations with Arab nations, Iran, and Israel. It aims to promote economic, political, and cultural ties with these countries. It also aims to enhance cooperation in various fields such as trade, energy, security, and technology.
- Est of **STRATEGIC PARTNERSHIP COUNCIL:** Established in 2019, the SPC is a high-level mechanism to steer bilateral cooperation in various sectors. It is co-chaired by the Prime Ministers of both countries. Strategic Partnership Council has been expanded to include four ministerial committees, covering areas such as defense cooperation, tourism, and culture.
- **Joint Statements and Declarations:** The **Delhi Declaration (2006)** and the **Riyadh Declaration (2010)** elevated the relationship to a strategic partnership. The recent Joint Statement during PM Modi's **April 2025** visit outlines the future direction of the partnership.
- **High-Level Visits**: Regular ministerial-level interactions to ensure implementation of agreements.
- Both countries cooperate in multilateral forums like the G20, BRICS+, and the UN on various global issues

2. ENERGY & INFRASTRUCTURE INITIATIVES:

- **Joint Refinery and Petrochemical Projects**: Both nations are collaborating on establishing two refineries and petrochemical projects in India, aiming to enhance energy cooperation and infrastructure integration.
- **Electricity Grid Interconnectivity**: Feasibility studies are underway to establish electricity grid interconnectivity between India, Saudi Arabia, and the broader region, reflecting efforts to strengthen energy cooperation.
- Both the countries are collaborating in the sector of renewable energy as well especially in **Green Hydrogen** & various initiatives under **International Solar Alliance**. For e.g. **$12 Billion Saudi Investment** dedicated to India's green hydrogen, solar, and wind energy sectors

3. ECONOMIC COOPERATION:

- **High-Level Task Force on Investment (HLTF):** Established to facilitate Saudi Arabia's announced investment of **USD 100 billion** in India across sectors like energy, infrastructure, technology, and health.
- **Fintech and Digital Infrastructure Cooperation:** Collaboration on cross-border fintech, digital payments, and the development of digital public platforms like UPI

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- **Skill Verification Program**: An agreement on a Skill Verification Program was signed between India's Ministry of Skill Development and Entrepreneurship and Saudi Arabia's Ministry of Human Resources, aiming to streamline the employment process for Indian workers in Saudi Arabia.

4. DEFENCE AND SECURITY COOPERATION:

- **Joint Military Exercises:** The first-ever joint land exercise, EX-SADA TANSEEQ, was held in India in 2024, and the naval exercise 'Al Mohed Al Hindi' is conducted regularly.
- **Counter-Terrorism Cooperation:** Intelligence-sharing mechanisms and joint condemnation of attacks like Pahalgam (April 2025).

5. CULTURAL AND PEOPLE-TO-PEOPLE TIES:

- **Bilateral Haj Agreement:** The annual agreement facilitates the pilgrimage of a large number of Indian Muslims to Saudi Arabia, with a quota of around 1.75 lakh in 2024. The agreement also supports women pilgrims without a *Mehram* (male guardian).
- **Yoga Diplomacy:** Recognition of Yoga as a sport in Saudi Arabia in 2017 and the popularity of Yoga in the Kingdom signify growing cultural exchange.
- **Cultural Exchange Programs:** Initiatives to promote literature, performing arts, tourism, and educational ties are being explored under Saudi Vision 2030.

6. COOPERATION IN SCIENCE AND TECHNOLOGY:

- **Space Cooperation:** An MoU has been signed between the Saudi Space Agency and the Indian Department of Space for cooperation in peaceful uses of space.
- **Technology and Innovation:** Collaboration in emerging technologies like AI, blockchain, and other advanced fields, including the potential development of a "Digital Silk Road."
- **Healthcare Cooperation:** MoUs on cooperation in health, including antimicrobial resistance and medical product regulation

7. CONNECTIVITY INITIATIVE = India-Middle East-Europe Corridor: Announced during the G20 summit, this ambitious project aims to build a rail and shipping corridor connecting India with the Middle East and Europe, enhancing economic growth and political cooperation.

What Should be the way forward for India-Saudi Relations?

1. ENHANCING ECONOMIC AND INVESTMENT TIES:

- **Diversify Trade Basket:** Move beyond the traditional focus on crude oil. Promote trade in non-oil sectors such as technology, pharmaceuticals, food processing, textiles, and engineering goods. Explore joint ventures and manufacturing partnerships.
- **Greater Integration of economies:** Some **labour-intensive establishments** from Saudi Arabia can be shifted to India which would reduce Kingdom's expatriate population. This would also eliminate the need to bring Nitaqat Policies.
- **Finalize Bilateral Investment Treaty and FTA with GCC:** Expedite negotiations for a Bilateral Investment Treaty to provide greater security and confidence to investors from both sides. Simultaneously, push for the early conclusion of a Free Trade Agreement between India and the Gulf Cooperation Council (GCC), which would significantly boost economic engagement.
- **Explore Local Currency Trade:** Investigate the feasibility of trading in local currencies (Rupee and Riyal) to reduce dependence on the US dollar and lower transaction costs.
- **Focus on New-Age Technologies:** Encourage collaboration in fintech, digital infrastructure (including UPI integration), AI, blockchain, space technology, and renewable energy. Establish joint research and development centers and facilitate technology transfer.

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- **Leverage Synergies with Vision 2030 and Viksit Bharat 2047:** Actively align Indian capabilities with Saudi Arabia's ambitious Vision 2030 projects (like NEOM, Qiddiya) in sectors like construction, IT, tourism, and entertainment. Similarly, explore how Saudi investments can contribute to India's Viksit Bharat 2047 goals in infrastructure, manufacturing, and technology.

2. STRENGTHENING ENERGY PARTNERSHIP:

- **Move Towards Comprehensive Energy Cooperation:** Expand the energy partnership beyond a buyer-seller relationship in crude oil. Explore joint ventures in refineries, petrochemical complexes, and strategic petroleum reserves.
- **Solar and Green Hydrogen**: Leverage Saudi Arabia's desert landscapes and India's solar expertise to create a **global green energy hub** under the **International Solar Alliance**, focusing on grid interconnectivity and joint R&D.

3. DEEPENING DEFENCE AND SECURITY COOPERATION:

- **Institutionalize Defence Collaboration:** Formalize and expand defence cooperation through regular joint military exercises (across all domains – land, sea, air), personnel exchanges, and joint training programs.
- **Promote Defence Industry Cooperation:** Encourage collaboration in defence research and development, technology transfer, and joint manufacturing of defence equipment, aligning with India's focus on "Make in India" in defence.
- **Enhance Cybersecurity Cooperation:** Given the increasing importance of cybersecurity, establish robust mechanisms for information sharing, joint training, and cooperation in addressing cyber threats.
- **Strengthen Counter-Terrorism and Intelligence Sharing:** Continue and enhance cooperation in intelligence sharing, combating terrorism, extremism, and terror financing.
- **Maritime Security**: Conduct regular naval patrols in the Arabian Sea and Indian Ocean to secure critical shipping lanes.

4. ENHANCING MULTILATERAL AND REGIONAL COOPERATION:

- **Coordinate on Global Issues:** Continue close coordination on global issues in multilateral forums like the G20, BRICS+, and the UN, working towards a multipolar and rules-based global order.
- **Promote Regional Stability:** Engage in joint efforts to promote peace and stability in the Middle East and South Asia through dialogue and diplomatic initiatives.
- **Strengthen Cooperation within GCC+ Frameworks:** Utilize Saudi Arabia's GCC leadership to advance India's interests in West Asia, including countering regional instability.

5. PRIORITIZE DIASPORA WELFARE:

- **Labour Reforms:** Advocate for **Kafala system reforms** to ensure wage protection, faster dispute resolution, and skill recognition for Indian workers.
- **Hajj Facilitation:** Secure an expanded Hajj quota and streamline pilgrimage processes for Indian Muslims.

6. IMEC Implementation: Accelerate the **India-Middle East-Europe Economic Corridor** to enhance shipping routes, port connectivity, and logistics hubs, positioning both nations as global trade intermediaries.

7. Increased Cooperation in Space: With India's growing space prowess , space becomes an important domain of cooperation between the two countries. Newly established **Saudi Space Agency** can engage with ISRO.

Conclusion

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In the fast-changing geopolitical profile of the Middle East ,India and Saudi Arabia both need each other to balance their relationships for a **peaceful and stable West Asia** where more than 8 million people of Indian origin reside and contribute for the betterment of the economy of the region. By aligning **India's "Think West" policy** with **Saudi Vision 2030**, both nations can transform their relationship into a **global strategic alliance**, addressing mutual economic, security, and technological aspirations while ensuring regional stability.

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Office of Deputy Speaker – Role & Significance – Explained pointwise

The Office of Deputy Speaker has remained vacant for the entire term of 17th Lok Sabha (2019-2024) & even in 18th Lok Sabha, the House has not elected any Deputy Speaker as of yet. This is not just just a procedural lapse but a constitutional anomaly which may going to have strong repercussions on our democratic parliamentary system.
In this article, we will learn about the constitutional position, roles & responsibility of the Office of Deputy Speaker, its significance & impact of leaving the post vacant as well as what could be the way forward.

What are the Constitutional Provisions Regarding Deputy Speaker?

1. Article 93: The House of the People (Lok Sabha) is required to elect two members as Speaker and Deputy Speaker whenever these offices become vacant. The article does not specify a time frame for this election but uses the phrase **"as soon as may be"**.

2. Article 178: This article provides the corresponding requirement for the Speaker and Deputy Speaker of a State's Legislative Assembly.

Election of Deputy Speaker:

- According to **Article 93** of the Indian Constitution, it is **mandatory** to elect a Deputy Speaker.
- The Deputy Speaker is elected soon after the formation of a new house, following the election of the Speaker.
- **Rule 8 of the Rules of Procedure and Conduct of Business in Lok Sabha:** The election of the Deputy Speaker is held on a date fixed by the Speaker.
- The Deputy Speaker is elected once a motion proposing their name is passed in the House. Typically, the Deputy Speaker serves for the entire duration of the House.

Position of Deputy Speaker:

- The **Deputy Speaker** is the **second-highest authority** in the **Lok Sabha** after the **Speaker**.
- The Deputy Speaker is not subordinate to the Speaker but is directly responsible to the Lok Sabha. However, when the Speaker is presiding, the Deputy Speaker functions as a regular member of the House.
- **Article 95:** The Deputy Speaker performs the duties of the Speaker when the office is vacant and acts as the Speaker when the latter is absent from House sittings. In both scenarios, the Deputy Speaker assumes all powers of the Speaker.
- The Deputy Speaker **continues in office** even if the House is dissolved — until the newly elected House chooses a new Deputy Speaker.
- By convention (developed after 11th Lok Sabha), the **Deputy Speaker** is elected **from opposition political party** — to promote **non-partisan functioning** (it is not a constitutional requirement).

Responsibilities and Functions:

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1. Presiding Officer: The Deputy Speaker performs the duties of the Speaker when the Speaker's office is vacant, or when the Speaker is absent from a sitting of the House. In such cases, the Deputy Speaker assumes all the powers of the Speaker. This ensures the continuity of the legislative process and maintains order and decorum in the Lok Sabha.

2. Maintaining Order and Decorum: Like the Speaker, the Deputy Speaker is responsible for upholding parliamentary rules and conventions, managing debates, and ensuring the orderly conduct of proceedings. They help in maintaining order and decorum in the House during debates and proceedings ensuring the rules of the House are followed.

3. Administrative Responsibilities: The Deputy Speaker may share administrative responsibilities with the Speaker, contributing to the effective management of parliamentary affairs.

4. Independence from Speaker: Deputy Speaker is not subordinate to the Speaker and is directly responsible to the House. Both the Speaker and Deputy Speaker must submit their resignations to the House.

5. Committees-related functions: If the Deputy Speaker is a member of a parliamentary committee, they automatically become its chairperson. This allows them to play a significant role in the detailed examination of legislation and other matters. For e.g. Deputy Speaker acts as chairman of the **Committee on Private Members' Bills and Resolutions**.

6. Representative Role: In the absence of the Speaker, the Deputy Speaker represents the House in ceremonial functions and official events.

What is the significance of the post of Deputy Speaker?

1. Ensures Continuity and Stability: The Deputy Speaker acts as the second-in-command in the Lok Sabha, presiding over the House in the absence of the Speaker or when the Speaker's office is vacant. This guarantees that the business of the House is not disrupted, ensuring the smooth and uninterrupted functioning of parliamentary proceedings. For e.g. 1st elected Deputy Speaker of Lok Sabha, **M.A. Ayyangar**, served as the acting speaker following the death of Speaker G.V. Mavalankar in 1956. His appointment during the crisis established a precedent for Deputy Speaker's importance as a ready & capable replacement.

2. Upholds Parliamentary Integrity and Order: When presiding, the Deputy Speaker exercises all the powers and responsibilities of the Speaker, including maintaining order, conducting debates, and enforcing parliamentary rules. Thus, the role of Deputy Speaker is not just supplementary to the Speaker's. It is vital for the uninterrupted functioning of the lower House of the Parliament. The presence of a Deputy Speaker helps uphold the integrity and efficiency of the legislative framework by providing an impartial authority to manage the House.

3. Promotes Representation and Inclusivity: Historically, the Office of Deputy Speaker has also held symbolic importance in fostering bipartisan respect. By convention, the Deputy Speaker is often chosen from the opposition party or alliance, promoting a balance of power and inclusivity within the parliamentary system. This practice enhances the legitimacy of parliamentary proceedings and fosters cooperation between the ruling and opposition parties as well as reinforce the non-partisan ethos that the Speaker's office aims to uphold.

4. Strengthens Democratic Principles: The Office of Deputy Speaker is not merely a ceremonial seat but a constitutional imperative. The constitutional mandate for the election of a Deputy Speaker (Articles 93 and 95) reflects the commitment to democratic values and the principle of collective leadership. The role exemplifies impartiality and fairness, which are vital for the credibility of legislative institutions.

5. Facilitates Effective Administration: The Deputy Speaker often shares administrative responsibilities with the Speaker and may chair important parliamentary committees, contributing to the detailed scrutiny of legislation and issues. This involvement enhances the quality of deliberations and decision-making within the House. Constitutional expert **S.C. Kashyap** has also noted that it is not possible for a Speaker to physically preside over every sitting of the House in its entirety in a Session. Thus, in such absences, the Deputy Speaker steps in to ensure that the proceedings continue without procedural disruption.

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6. Broader Role & Responsibilities: The role of Deputy Speaker has not been limited to just 'filling in' for the Speaker. They can chair important sessions (including joint sittings), preside over specific committees, handle sensitive debates that require neutral & trusted authority.

7. Symbol of Parliamentary Tradition: The office of the Deputy Speaker traces its roots to pre-independence legislative practices and remains an integral part of India's parliamentary heritage. The position originated in the Central Legislative Assembly under British Rule, where it is known as the Deputy President. The 1st to hold the office was **Sachidanand Sinha** in 1921. By the time India achieved independence in 1947, the Office of Deputy Speaker already became an institutional fixture in legislative governance.

What could be the impact of leaving the Office of Deputy Speaker vacant?

1. Leaving the Deputy Speaker's position vacant undermines the institutional safeguards established by the Constitution. It centralizes the procedural power solely within the Speaker & the ruling party, eliminating a vital counterbalance.

2. In an emergency situation, such as the Speaker's resignation, death, or removal, the lack of a designated second-in-command could lead to confusion or even a temporary leadership vacuum in the House.

3. The delay in election of the Deputy Speaker also signals a broader disregard for parliamentary conventions – especially the unwritten rule of offering the post to the opposition. Failing to fill the post is not just a passive oversight, it is an active sidelining of consensus politics.

4. The intent of the constitution by including the phrase "as soon as may be" is clear that the Lok Sabha must never function without a second-in-command – a constitutional safeguard to ensure continuity, stability & institutional balance.

5. Though, the Constitution does not prescribes a definite timeline for the election of Deputy Speaker, but the phrase "as soon as may be" must not be interpreted as "whenever convenient". The argument that there is 'no urgency' to appoint the Deputy Speaker runs counter to the entire ethos of constitutional democracy. Our Constitutional framers foresaw the importance of redundancy in leadership & thus created the post of second-in-command. Hence, the position of Deputy Speaker are not afterthoughts – they are foundational to the system's resilience.

What could be the way forward?

1. Amend the Rules or Constitution to Specify a Time Frame: Introduce an explicit time limit-such as requiring the election of the Deputy Speaker within a fixed number of days (e.g. 60 days) after the Speaker's election or within the first or second session of the new Lok Sabha. A statutory mechanism can be introduced to allow the President to initiate the process within a time frame – upon the advice of PM or the Speaker. This would remove ambiguity and make the election process time-bound, reducing the scope for government discretion and delays.

2. Strengthen Parliamentary Conventions: Reinforce the established convention of electing the Deputy Speaker in the second session at the latest, and encourage all parties to uphold this practice in the interest of parliamentary integrity and continuity. Public and institutional pressure, including from the Opposition and civil society, can help ensure adherence to this convention.

3. Empower the Speaker to Fix an Early Date: The current rules allow the Speaker to fix the date for the Deputy Speaker's election. The Speaker should be encouraged, either by convention or through internal parliamentary resolutions, to set this date promptly after the Speaker's own election.

4. Judicial or Institutional Oversight: The Supreme Court has already sought responses regarding the prolonged vacancy. Continued judicial scrutiny or recommendations from parliamentary committees can act as a deterrent against undue delays.

5. Political Consensus and Transparency: Foster a political consensus, possibly through an all-party meeting, to ensure that the Deputy Speaker's election is not held hostage to political bargaining but is treated as a matter of institutional propriety and balance.

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Conclusion:
The Office of Deputy Speaker of Lok Sabha is neither symbolic nor optional. It is a constitutionally sanctioned position designed to uphold the integrity & continuity of legislative functioning. Disregarding it not only violates the Constitution's letter but also undermines the spirit of the democratic balance. Thus, it is time for the Parliament to reaffirm its respect for constitutional norms & institutional integrity by electing a Deputy Speaker – which will ensure House's commitment to rule-based governance.

> **Read More: The Hindu**
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Solid Waste Management in India- Explained Pointwise

The Solid Waste Management in India remains an Achilles heel for India. The Supreme Court of India recently criticized the solid waste management in New Delhi. There are more than 3,800 tones of untreated solid waste in Delhi alone. This waste reaches landfills and threatens public health and the environment. Proper steps need to be undertaken for safe disposal and treatment of solid waste in India.

What is a Solid Waste?

- **Solid Waste:** Solid waste refers to any unwanted or discarded material that is not in a liquid or gaseous state. The solid waste includes a wide range of materials generated from various sources such as households, industries, commercial establishments, construction sites, and institutions.
- **Types of Solid Waste:**
    - **Municipal Solid Waste (MSW)** – Household, commercial, market waste.
    - **Biomedical Waste** – Hospitals, clinics (requires special handling).
    - **Electronic Waste (E-waste)** – Phones, laptops, appliances.
    - **Construction & Demolition (C&D) Waste** – Debris, bricks, tiles.
    - **Industrial Waste** – By-products from factories, often hazardous.
    - **Plastic Waste** – Single-use plastics, packaging material.

What is the status of Solid Waste generation in India?

Status of Solid Waste Generation in India:

- According to a study published in 'Nature' – India is the biggest plastic polluter in the world – releasing 9.3mT of plastic waste annually – which is equivalent to around 20% of global plastic emission.
- According to CPCB report, only ~50% of total solid waste generated in the country is treated. The processing of solid waste in India has improved significantly, from 19% in 2015-16 to ~50% in 2020-21. In the corresponding period, the proportion of solid waste landfilled has fallen from 54% to 18.4%.

The total quantity of Solid waste generated in India per Day	~1,60,000 Metric Tonnes Per Day (TPD)
Waste Collection per day	~1,53,000 Metric Tonnes Per Day (TPD) Waste Collection efficiency is ~96%
Waste treatment per day	~80,000 Metric Tonnes Per Day (TPD) Only 50% of the total waste is treated
Waste Landfilled per day	~30,000 Metric Tonnes Per Day (TPD)

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	18.4% of the total waste generated ends in landfill
Unaccounted Waste Generation	~50,000 Metric Tonnes Per Day (TPD) 31.2% of the total waste generated remains unaccounted.

About 50-55% of the waste generated in Indian cities is biodegradable wet waste, about 35% is non-biodegradable wet waste and 10% is an inert component.

What are the Challenges with Solid Waste Management in India?

1. Rising Waste Generation: Rapid economic growth has raised the consumption levels in the economy, which has in turn increased the waste generation. Further, the expansion of digital economy is leading to a multifold increase in e-waste generation. Rising plastic waste generation in eco-sensitive regions like Himalayas are choking the fragile ecosystems present there. ***For ex-*** *A Planning Commission Report had estimated that India will generate 165 million tonnes by 2030.*

2. Lack of proper Waste Management: India lacks proper waste management and disposal techniques.

- **Inadequate Infrastructure:** Many urban and rural areas lack proper infrastructure for waste collection, segregation, transportation, processing, and disposal.
- **Collection & Treatment:** While collection rates are improving, a significant portion of the generated waste remains uncollected.
- **Poor Processing:** Only 50% of the waste produced is actually processed in India. ~30% of waste is not accounted and ~20% ends up in landfills, reflecting poor waste disposal method.
- **Incorrect and Inadequate Segregation Techniques:** There is poor segregation of waste at source. Hazardous waste and e-waste is not sealed and labelled leading to improper disposal. ***For ex-*** *Valuable materials like aluminum and plastics end up in landfills instead of being recycled.*
- **Reuse/recycling of waste:** Reuse and recycling of waste is predominantly an informal economy, lacking access to advanced technology.
- **Financial Constraints:** Local municipal bodies often face budget limitations hindering investments in modern waste management systems.

3. Littering and Illegal Dumping: Due to poor disposal methods, almost half of waste is placed in uncontrolled dumps and landfills. A substantial amount of untreated waste, approximately 24%, ends up in landfills, many of which are unscientific and overflowing. These landfills are the source of generation of methane gases, leachates, and landfill fires, adversely affecting the surrounding environment

4. Lack of land resources: The urban areas in India lack adequate land resources to set up waste processing plants. ***For ex-*** *Waste processing plants in Delhi need large land parcels, of about 30-40 acres each for treatment.*

5. Lack of public awareness: Lack of public awareness regarding proper waste management practices, contributes to littering and improper disposal habits.

6. Lack of regular waste collection services: The lack of regular waste collection services adds up to the building up of waste as well as littering. Illegal dumping in open areas and water bodies increases the pressure on the municipal body, warranting more resources for clean-up.

7. Lack of proper data: Lack of data regarding the quantity & quality of waste generated & processed in India is a major roadblock in its management. The data regarding the rate of waste generation in India is underestimated & of waste collection is over-estimated. For e.g. according to the official estimates, the plastic waste generation rate in India is 0.12 kg/capita/day, while according to the study published in 'Nature' , it is as high as 0.54 kg/capita/day. The agencies in India claim to collect 95% of the waste generated, however, these official statistics do not include rural areas, open burning of uncollected waste or the waste recycled by the informal sector.

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8. Informal Sector: The informal sector, consisting of waste pickers and recyclers, plays a crucial role in managing and extracting value from waste, though often under hazardous conditions.

9. Waste Composition: A large percentage of Indian waste is organic, offering potential for composting and biomethanation. However, the increasing proportion of non-biodegradable waste like plastics and e-waste presents management challenges.

What are the harmful impacts of poor Waste Management?

1. Health Issues: The improper waste management leads to several health issues such as:

- Open burning of waste leads to formation of harmful particles which can cause lung diseases.
- Poor collection of solid waste leads to garbage dumps which act as breeding ground for rats and mosquitoes etc. Mosquitoes act as carriers of diseases like malaria and dengue.

2. Environmental Issues: Improper waste management techniques lead to various environmental problems such as:

- Unscientific dumping in landfill leads to formation of harmful chemicals which permeate into soil and groundwater. This renders groundwater unfit for drinking and cause multiple diseases
- Waste in landfills leads to formation of harmful gases leading to air pollution. *For ex-* *Around 90-98% of landfill gases* *are made up of* *methane and carbon dioxide, remaining 2-10% includes nitrogen, oxygen, ammonia, sulphides, hydrogen and various other gases.*
- A lot of land-based waste eventually ends up in sea leading to marine pollution.

3. Economic Impacts: Improper waste management usually has grave economic impacts such as:

- Expansion of landfills occupy useful land, leading to wasteful utilization of an economic resource.
- Poor waste collection leads to clogging of drains, which has become a factor in urban flooding, leading to economic losses.
- Poor waste management leads to general filth in cities, which impacts tourism potential.

What have been the Government interventions for Solid Waste Management?

Policy and Legal Framework for Waste Management in India	The Government of India (GoI) has formulated various Rules and Regulations. These rules are updated periodically and have been formulated under the **Environment Protection Act, 1986**. These include a. Solid Waste Management Rules b. e-Waste Management Rules c. Plastic Waste Management Rules
Extended Producer Responsibility (EPR) Mechanism	EPR is a policy approach in waste management that makes producers responsible for the entire lifecycle of their products, including their collection, recycling, and disposal. In 2022, EPR initiatives utilizing market mechanisms were implemented for plastic packaging, E-waste, battery waste, and used oil.
Swachh Bharat Mission for Solid	Central assistance is provided under Swachh Bharat Mission for solid waste management, including plastic waste management in urban and rural areas.

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Waste Management	
Compost Banao, Compost Apnao Campaign	It is a multi-media campaign launched by MoHUA on waste-to-compost under SBM-(U). The aim is to encourage people to convert their kitchen waste into compost to be used as fertilizer and to reduce the amount of waste getting to landfill sites.
Promotion of Waste to Energy	The Ministry of New and Renewable Energy (MNRE) launched Program on Energy from Urban, Industrial, Agricultural waste/residues and Municipal Solid Waste to promote setting up of Waste-to-Energy projects and to provide central financial assistance.
GOBAR-Dhan Scheme	This scheme promotes the conversion of cattle dung and organic farm waste into biogas and organic compost in rural areas.
National Action Plan for Municipal Solid Waste Management	This plan by the Central Pollution Control Board (CPCB) outlines strategies for waste minimization, utilization, recycling, processing, and environmentally sound disposal.

What should be the Way Forward?

1. Scientific Waste Management: The waste management planning should be based on sound scientific and engineering studies. They should consider waste composition, capital and long-term operating costs, transport distances, and the geographical location of waste processing and disposal facilities.

2. Smart Waste Management System: In the long term, technology like (Internet of Things) can be integrated into waste management. *For ex- RFID-enabled door-to-door waste collection monitoring can enhance collection efficiency and GPS based vehicle tracking can help in real time monitoring.*

3. Emphasis on recycling, resource recovery & processing: Policies supporting recycling and recovery of resources from waste must be implemented stringently. Waste processing methods like composting, vermicomposting and bio-methanation should be adopted for treating organic waste. Establish efficient material recovery facilities (MRFs) and support the formalization of the recycling sector.

4. Scaling up Waste-to-energy: Bio-methanation (anaerobic digestion) which uses microorganisms to convert the organic waste into methane, can be used as fuel. Bio-methanation plants should be scaled up. Also, Refuse-Derived Fuel (RDF) which consists of plastics, paper, and textile waste, having good calorific value, can be used to generate power in waste-to-energy projects.

5. Polluter Pays Principle: Waste Management Rules which have incorporated '**Polluter Pays Principle**', need to be stringently implemented to penalize non-compliance. Polluter pays principle casts absolute liability on the polluter for the harm caused to the environment & extends not only to compensate the victims of pollution but also the cost of restoring environmental degradation. While the liability is clear under this principle, but the process of determining an equitable compensation is difficult as it must account for both tangible & intangible damages inflicted on environment & the affected communities. To overcome this, the Courts have modified the principle into '**Government Pays Principle**' under which it is the government which has to pay the compensation to the affected individuals & recover the same from the polluters, until the damage caused to the ecology is fully reversed.

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6. Increasing Public Awareness: Self- help groups, residents' welfare associations, and community-based organizations should be encouraged to educate and acquaint people with beneficial waste management strategies, including separation, recycling modes, and drop off centers for recyclables, as well as composting.

7. Data collection: There is an urgent need to collect & provide reliable data about waste generation & its composition in the country for its effective management. We need to know how much of the waste is being generated, where & how it is being managed for finding an effective solution. We also need to have data regarding the infrastructure that has been built over the years for waste management & such infrastructure needs to be geotagged to help in proper disposal of waste.

8. Extended Producer Responsibility (EPR): To effectively operationalize the EPR, the producers, importers & and brand owners that have a legal obligation to collect the waste, can collectively form kiosks across the country to collect the waste from local bodies – so that all the waste that is covered under EPR can be deposited & effectively managed.

Conclusion:
According to the SC of India, environmental protection is not only a regulatory obligation but also a constitutional imperative which aims to to safeguard the fundamental rights of the individuals & preserve the ecological balance. Thus, it is the right time to hold the waste management system in the country accountable to the people whose health is impacted by the land, water & air pollution caused by unmanaged & mismanaged waste all across the country.

Read More: The Hindu
UPSC Syllabus: GS III, Conservation, Environment Pollution and Degradation.

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